Section 42A Report:

Plan Change 7 to the Canterbury Land and Water Regional Plan; and

Plan Change 2 to the Waimakariri River Regional Plan

Matthew McCallum-Clark
Philip Maw
Angela Fenemor
Andrea Richardson
Lochiel McKellar
Adele Dawson
Daniel Clark
Shirley Hayward
Duncan Gray
Jarred Arthur
Lisa Scott
Fouad Alkhaier
Amber Kreleger
Zeb Etheridge
Mark Megaughin

March 2020
# Table of Contents

Abbreviations ........................................................................................................................................................................... 5

Part 1: Introduction and Planning Context .......................................................................................................................... 10
  1. Purpose of Report .................................................................................................................................................................. 10
  2. Format and Assessment Approach ........................................................................................................................................ 14
  3. Legal and Statutory Context .................................................................................................................................................. 16

Part 2: Common Themes in Submissions on PC7 and PC2 .................................................................................................... 26
  1. Introduction ......................................................................................................................................................................... 26
  2. Te Mana o Te Wai ................................................................................................................................................................. 26
  3. The use of Overseer, the Farm Portal and Good Management Practices ............................................................................ 30
  4. Waipuna (Springs) ................................................................................................................................................................. 36
  5. Schedule 7 and Schedule 7A (General) .................................................................................................................................. 40
  6. Drafting Style ....................................................................................................................................................................... 44
  7. Submissions on the whole of PC7 ........................................................................................................................................... 46
  8. Submissions not on PC7 ......................................................................................................................................................... 52
  9. Submissions seeking new region-wide definitions .............................................................................................................. 54

Part 3: Submissions on Part A of PC7: Omnibus ................................................................................................................... 56
  1. Introduction to Part A of Plan Change 7: Omnibus ................................................................................................................ 56
  2. National Policy Statement for Freshwater Management ................................................................................................... 58
  3. National Environmental Standard for Plantation Forestry ................................................................................................. 74
  4. Ngāi Tahu values .................................................................................................................................................................. 84
  5. Habitats of indigenous freshwater species .......................................................................................................................... 88
  7. Managed Aquifer Recharge .................................................................................................................................................... 138
  8. Commercial Vegetables .......................................................................................................................................................... 160
  9. Schedule 6 (Bathing Sites) .................................................................................................................................................... 192
  10. Schedule 17 (Salmon Spawning Sites) ............................................................................................................................ 197
  11. Minor Changes .................................................................................................................................................................... 201

Part 4: Submissions on Part B of PC7: OTOP .......................................................................................................................... 232
  1. Executive summary ............................................................................................................................................................... 232
  2. Section – Introduction/Overview ......................................................................................................................................... 233
  3. Freshwater Outcomes and Freshwater Management Units ............................................................................................ 236
  4. Cultural .................................................................................................................................................................................. 249
  5. Quantity ................................................................................................................................................................................ 267
  6. Quantity – Orari Specific Provisions ................................................................................................................................... 286
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. Quantity – Temuka Specific Provisions</td>
<td>297</td>
</tr>
<tr>
<td>8. Quantity – Timaru Specific Provisions</td>
<td>302</td>
</tr>
<tr>
<td>10. Quantity – Pareora Specific Provisions</td>
<td>322</td>
</tr>
<tr>
<td>11. Quantity – Groundwater Specific Provisions</td>
<td>328</td>
</tr>
<tr>
<td>12. Quality – Nutrient Management</td>
<td>344</td>
</tr>
<tr>
<td>13. Schedule 7 and Schedule 7A – OTOP specific requirements</td>
<td>382</td>
</tr>
<tr>
<td>14. Miscellaneous Topics</td>
<td>386</td>
</tr>
<tr>
<td>Part 5: Submissions on Part C of PC7: Waimakariri</td>
<td>392</td>
</tr>
<tr>
<td>1. Executive summary</td>
<td>392</td>
</tr>
<tr>
<td>2. Section 8 – Introduction/Overview</td>
<td>393</td>
</tr>
<tr>
<td>3. Freshwater Outcomes and Freshwater Management Units</td>
<td>395</td>
</tr>
<tr>
<td>4. Cultural</td>
<td>404</td>
</tr>
<tr>
<td>5. Quantity</td>
<td>412</td>
</tr>
<tr>
<td>6. Quantity – Surface Water</td>
<td>439</td>
</tr>
<tr>
<td>7. Quantity – Abstraction of Groundwater</td>
<td>461</td>
</tr>
<tr>
<td>8. Water Quality and Nutrient Management</td>
<td>470</td>
</tr>
<tr>
<td>9. Wetlands and Riparian Margins</td>
<td>544</td>
</tr>
<tr>
<td>10. Miscellaneous Provisions and Submissions</td>
<td>549</td>
</tr>
<tr>
<td>Part 6: Submissions on PC2</td>
<td>562</td>
</tr>
<tr>
<td>11. Submissions on Plan Change 2 to the WRRP</td>
<td>562</td>
</tr>
<tr>
<td>Appendix A – Qualifications and Experience of Reporting Officer</td>
<td>564</td>
</tr>
<tr>
<td>Appendix B – Statutory Framework</td>
<td>569</td>
</tr>
<tr>
<td>1. Introduction</td>
<td>569</td>
</tr>
<tr>
<td>2. Statutory Framework – general requirements</td>
<td>569</td>
</tr>
<tr>
<td>3. Contents and preparation of regional plans</td>
<td>569</td>
</tr>
<tr>
<td>4. Regional rules</td>
<td>570</td>
</tr>
<tr>
<td>5. Giving Effect to National Direction</td>
<td>575</td>
</tr>
<tr>
<td>6. Functions</td>
<td>575</td>
</tr>
<tr>
<td>7. Section 32</td>
<td>576</td>
</tr>
<tr>
<td>8. Section 32AA</td>
<td>578</td>
</tr>
<tr>
<td>9. The NZCPS, National Policy Statements and the RPS</td>
<td>579</td>
</tr>
<tr>
<td>10. National Environmental Standards, Other Plans and WCOs</td>
<td>588</td>
</tr>
<tr>
<td>11. Other Statutes</td>
<td>591</td>
</tr>
<tr>
<td>Appendix C – Policy Table</td>
<td>594</td>
</tr>
<tr>
<td>Appendix D – Technical Memorandums</td>
<td>604</td>
</tr>
</tbody>
</table>
1. Appendix D.1 – Delineation of Nitrate Priority Sub-areas ............................................................... 604
2. Appendix D.2 – Additional EPM and BBM Modelling ................................................................. 605
3. Appendix D.3 – Model uncertainty ................................................................................................. 609
4. Appendix D.4 – Reducing the nitrate targets with 30% .............................................................. 613
5. Appendix D.5 – Waimakariri sub-region Groundwater Budgets and Allocation Limits - Zeb Etheridge ................................................................. 615
6. Appendix D.6 – Updated Opihi catchment modelling in response to submissions ............... 618
Abbreviations

Abbreviations used throughout the text of this report are:

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full text</th>
</tr>
</thead>
<tbody>
<tr>
<td>7DMALF</td>
<td>7-day Mean Annual Low Flow</td>
</tr>
<tr>
<td>Aqualinc</td>
<td>Aqualinc Research Limited</td>
</tr>
<tr>
<td>CERA</td>
<td>Canterbury Earthquake Recovery Authority</td>
</tr>
<tr>
<td>CIA</td>
<td>Cultural Impact Assessment</td>
</tr>
<tr>
<td>CCC</td>
<td>Christchurch City Council</td>
</tr>
<tr>
<td>CLWRP</td>
<td>Canterbury Land and Water Regional Plan</td>
</tr>
<tr>
<td>CNMA</td>
<td>Certified Nutrient Management Advisor</td>
</tr>
<tr>
<td>COMAR</td>
<td>Cultural Opportunity Mapping and Assessments</td>
</tr>
<tr>
<td>CRPS</td>
<td>Canterbury Regional Policy Statement 2013</td>
</tr>
<tr>
<td>CWMS</td>
<td>Canterbury Water Management Strategy</td>
</tr>
<tr>
<td>DIN</td>
<td>Dissolved Inorganic Nitrogen</td>
</tr>
<tr>
<td>DRP</td>
<td>Dissolved Reactive Phosphorus</td>
</tr>
<tr>
<td>DWSNZ</td>
<td>Drinking-water Standards for New Zealand 2005 (Revised 2018)</td>
</tr>
<tr>
<td>EAV</td>
<td>Estimated Annual Volume</td>
</tr>
<tr>
<td>ECan Act</td>
<td>Environment Canterbury (Temporary Commissioners and Improved Water Management) Act 2010</td>
</tr>
<tr>
<td>ECan/Environment Canterbury</td>
<td>Canterbury Regional Council</td>
</tr>
<tr>
<td>E. coli</td>
<td>Escherichia coli</td>
</tr>
<tr>
<td>FEP</td>
<td>Farm Environment Plan</td>
</tr>
<tr>
<td>FMU</td>
<td>Freshwater Management Unit</td>
</tr>
<tr>
<td>GAZ</td>
<td>Groundwater Allocation Zone</td>
</tr>
<tr>
<td>GIS</td>
<td>Geographic Information System</td>
</tr>
<tr>
<td>GMP</td>
<td>Good Management Practice</td>
</tr>
<tr>
<td>Ha</td>
<td>Hectare(s)</td>
</tr>
<tr>
<td>HDWP</td>
<td>Hinds Drains Working Party</td>
</tr>
<tr>
<td>HNCA</td>
<td>High Nitrogen Concentration Area</td>
</tr>
<tr>
<td>HWRRP</td>
<td>Hurunui Waiau River Regional Plan</td>
</tr>
<tr>
<td>ICMP</td>
<td>Integrated Catchment Management Plan</td>
</tr>
<tr>
<td>IMP</td>
<td>Iwi Management Plan</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Definition</td>
</tr>
<tr>
<td>--------------</td>
<td>------------</td>
</tr>
<tr>
<td>Kg</td>
<td>Kilograms</td>
</tr>
<tr>
<td>Kg/ha/year</td>
<td>Kilograms per hectare per year</td>
</tr>
<tr>
<td>L/s</td>
<td>Litres per second</td>
</tr>
<tr>
<td>LUC</td>
<td>Land Use Capability</td>
</tr>
<tr>
<td>m</td>
<td>Meter(s)</td>
</tr>
<tr>
<td>m³</td>
<td>Cubic meter</td>
</tr>
<tr>
<td>m³/s</td>
<td>Cubic meters per second</td>
</tr>
<tr>
<td>m³/yr</td>
<td>Cubic meters per year</td>
</tr>
<tr>
<td>MAR</td>
<td>Managed Aquifer Recharge</td>
</tr>
<tr>
<td>MAV</td>
<td>Maximum acceptable value</td>
</tr>
<tr>
<td>MALF</td>
<td>Mean Annual Low Flow</td>
</tr>
<tr>
<td>MCI</td>
<td>Macroinvertebrate Community Index</td>
</tr>
<tr>
<td>MfE</td>
<td>Ministry for the Environment</td>
</tr>
<tr>
<td>mg/L</td>
<td>Milligrams per litre</td>
</tr>
<tr>
<td>µg/L</td>
<td>Micrograms per litre</td>
</tr>
<tr>
<td>mg/m³</td>
<td>Milligrams per cubic meter</td>
</tr>
<tr>
<td>MKT</td>
<td>Mahaanui Kurataiao Ltd</td>
</tr>
<tr>
<td>mm/ha/week</td>
<td>Millimetres per hectare per week</td>
</tr>
<tr>
<td>MPZ</td>
<td>Mātaitai Protection Zone</td>
</tr>
<tr>
<td>MRB</td>
<td>MacFarlane Rural Business</td>
</tr>
<tr>
<td>N</td>
<td>Nitrogen</td>
</tr>
<tr>
<td>NAZ</td>
<td>Nutrient Allocation Zone</td>
</tr>
<tr>
<td>NES</td>
<td>National Environment Standard</td>
</tr>
<tr>
<td>NESDW</td>
<td>National Environmental Standard for Sources of Human Drinking Water 2007</td>
</tr>
<tr>
<td>NESPF</td>
<td>National Environment Standard for Plantation Forestry 2017</td>
</tr>
<tr>
<td>N/ha/yr</td>
<td>Nitrogen per hectare per year</td>
</tr>
<tr>
<td>NOF</td>
<td>National Objectives Framework</td>
</tr>
<tr>
<td>NPA</td>
<td>Nitrate Priority Area</td>
</tr>
<tr>
<td>NPSHPS</td>
<td>Proposed National Policy Statement for Highly Productive Soils</td>
</tr>
<tr>
<td>NZCPS</td>
<td>New Zealand Coastal Policy Statement</td>
</tr>
<tr>
<td>Acronym</td>
<td>Description</td>
</tr>
<tr>
<td>---------</td>
<td>-------------</td>
</tr>
<tr>
<td>OEFRAG</td>
<td>Opuha Environment Flow Release Advisory Group</td>
</tr>
<tr>
<td>ORRP</td>
<td>Opihi River Regional Plan</td>
</tr>
<tr>
<td>OTOP</td>
<td>Orari-Temuka-Opihi-Pareora</td>
</tr>
<tr>
<td>OVERSEER®</td>
<td>OVERSEER® Nutrient Budget Model</td>
</tr>
<tr>
<td>PCEFWARP</td>
<td>Pareora Catchment Environmental Flow and Water Allocation Regional Plan</td>
</tr>
<tr>
<td>PC2</td>
<td>Proposed Plan Change 2 to the WRRP</td>
</tr>
<tr>
<td>PC5</td>
<td>Plan Change 5 to the CLWRP</td>
</tr>
<tr>
<td>PC7</td>
<td>Proposed Plan Change 7 to the CLWRP</td>
</tr>
<tr>
<td>ppm</td>
<td>Parts per million</td>
</tr>
<tr>
<td>QMCI</td>
<td>Quantitative Macroinvertebrate Community Index</td>
</tr>
<tr>
<td>RAMA</td>
<td>Rock Art Management Area</td>
</tr>
<tr>
<td>RL</td>
<td>Reduced level</td>
</tr>
<tr>
<td>RMA</td>
<td>Resource Management Act 1991</td>
</tr>
<tr>
<td>Section 32 Report</td>
<td>Section 32 Evaluation Report for Plan Change 7 (Omnibus, Orari-Temuka-Opihi-Pareora and Waimakariri) to the Canterbury Land and Water Regional Plan and Plan Change 2 to the Waimakariri River Regional Plan</td>
</tr>
<tr>
<td>SFRG</td>
<td>Suitability for Recreation Grade</td>
</tr>
<tr>
<td>SoDR</td>
<td>Summary of Decisions Requested on Plan Change 2 to the WRRP and Plan Change 7 to the CLWRP</td>
</tr>
<tr>
<td>SWAZ</td>
<td>Surface Water Allocation Zone</td>
</tr>
<tr>
<td>The Council</td>
<td>Environment Canterbury</td>
</tr>
<tr>
<td>TLI</td>
<td>Trophic Level Index</td>
</tr>
<tr>
<td>TN</td>
<td>Total Nitrogen</td>
</tr>
<tr>
<td>TP</td>
<td>Total Phosphorus</td>
</tr>
<tr>
<td>TSA</td>
<td>Targeted Stream Augmentation</td>
</tr>
<tr>
<td>TWAS</td>
<td>Tangata Whenua Advisory Service</td>
</tr>
<tr>
<td>We</td>
<td>means any author of this Section 42A Report</td>
</tr>
<tr>
<td>WRRP</td>
<td>Waimakariri River Regional Plan</td>
</tr>
<tr>
<td>WCO</td>
<td>Water Conservation Order</td>
</tr>
<tr>
<td>ZC</td>
<td>Zone Committee</td>
</tr>
<tr>
<td>ZIPA</td>
<td>Zone Implementation Programme Addendum</td>
</tr>
</tbody>
</table>
Section 42A Report - Plan Change 7 to the CLWRP and Plan Change 2 to the WRRP

Abbreviations of submitter names used in this report are:

<table>
<thead>
<tr>
<th>Abbreviated Name</th>
<th>Submitter</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALIL</td>
<td>Ashburton Lyndhurst Irrigation Limited</td>
</tr>
<tr>
<td>AMWG</td>
<td>Adaptive Management Working Group</td>
</tr>
<tr>
<td>Arowhenua and Te Rūnanga</td>
<td>Te Rūnanga o Arowhenua and Te Rūnanga o Ngāi Tahu (PC7-424)</td>
</tr>
<tr>
<td>Ballance</td>
<td>Ballance Agri-Nutrients Limited</td>
</tr>
<tr>
<td>BCIL</td>
<td>Barrhill Chertsey Irrigation Limited</td>
</tr>
<tr>
<td>Beef + Lamb</td>
<td>Beef and Lamb New Zealand Limited</td>
</tr>
<tr>
<td>CACB</td>
<td>Canterbury Aoraki Conservation Board</td>
</tr>
<tr>
<td>CCC</td>
<td>Christchurch City Council</td>
</tr>
<tr>
<td>CDHB</td>
<td>Canterbury District Health Board</td>
</tr>
<tr>
<td>Claxby Irrigation</td>
<td>Claxby Irrigation Limited</td>
</tr>
<tr>
<td>DairyNZ</td>
<td>DairyNZ Limited</td>
</tr>
<tr>
<td>DHL</td>
<td>Dairy Holdings Limited</td>
</tr>
<tr>
<td>DOC</td>
<td>Director General of Conservation</td>
</tr>
<tr>
<td>ECOP</td>
<td>Environmental Code of Practice for Plantation Forestry 2007</td>
</tr>
<tr>
<td>Federated Farmers</td>
<td>Combined Canterbury Provinces, Federated Farmers of New Zealand</td>
</tr>
<tr>
<td>Fish &amp; Game</td>
<td>North Canterbury and Central South Island Fish and Game Councils with respect to Part 1 and 2 of this report, Central South Island Fish and Game Council with respect to Part 3 and North Canterbury Fish and Game Council with respect to Part 4 and 5</td>
</tr>
<tr>
<td>Fonterra</td>
<td>Fonterra Co-operative Group Limited</td>
</tr>
<tr>
<td>Forest &amp; Bird</td>
<td>Royal Forest and Bird Protection Society of New Zealand</td>
</tr>
<tr>
<td>Fulton Hogan</td>
<td>Fulton Hogan Limited</td>
</tr>
<tr>
<td>Genesis</td>
<td>Genesis Energy Limited</td>
</tr>
<tr>
<td>GWS</td>
<td>Geraldine Water Solutions</td>
</tr>
<tr>
<td>HortNZ</td>
<td>Horticulture New Zealand</td>
</tr>
<tr>
<td>HNZPT</td>
<td>Heritage New Zealand Pouhere Taonga</td>
</tr>
<tr>
<td>HHWET</td>
<td>Hekeao Hinds Water Enhancement Trust</td>
</tr>
<tr>
<td>Irrigation NZ</td>
<td>Irrigation New Zealand Incorporated</td>
</tr>
<tr>
<td>Mackenzie DC</td>
<td>Mackenzie District Council</td>
</tr>
<tr>
<td>M A Orchards et al</td>
<td>M A Orchards Limited, Kerrytown Orchards Limited Partnership and Falvey Orchards Limited Partnership</td>
</tr>
<tr>
<td>Meridian</td>
<td>Meridian Energy Limited</td>
</tr>
<tr>
<td>Acronym</td>
<td>Full Name</td>
</tr>
<tr>
<td>---------</td>
<td>-----------</td>
</tr>
<tr>
<td>MHV</td>
<td>MHV Water Limited</td>
</tr>
<tr>
<td>NIWA</td>
<td>National Institute of Water and Atmospheric Research</td>
</tr>
<tr>
<td>NZDF</td>
<td>New Zealand Defence Force</td>
</tr>
<tr>
<td>NZDFA</td>
<td>New Zealand Deer Farmers Association Canterbury/West Coast and South Canterbury/North Otago Branches</td>
</tr>
<tr>
<td>Te Ngāi Tūāhuriri Rūnanga</td>
<td>Te Ngāi Tūāhuriri Rūnanga</td>
</tr>
<tr>
<td>Te Rūnanga o Ngāi Tahu and Te Rūnanga o Kaikōura, Te Hapū o Ngāti Whēke, Te Rūnanga o Kōkourārata, Ōnuku Rūnanga, Wairewa Rūnanga, Te Taumutu Rūnanga, Te Rūnanga o Arowhenua, Te Rūnanga o Waihao and Te Rūnanga o Moeraki (PC7-423)</td>
<td></td>
</tr>
<tr>
<td>OWL</td>
<td>Opuha Water Limited</td>
</tr>
<tr>
<td>OWUG</td>
<td>Orari Water Users Group</td>
</tr>
<tr>
<td>Potatoes NZ</td>
<td>Potatoes New Zealand</td>
</tr>
<tr>
<td>Rangitata Dairies</td>
<td>Rangitata Dairies Limited Partnership</td>
</tr>
<tr>
<td>RSIL</td>
<td>Rangitata South Irrigation Limited</td>
</tr>
<tr>
<td>Ravensdown</td>
<td>Ravensdown Limited</td>
</tr>
<tr>
<td>SCCC</td>
<td>South Canterbury Chamber of Commerce</td>
</tr>
<tr>
<td>Synlait</td>
<td>Synlait Milk Limited</td>
</tr>
<tr>
<td>TCG</td>
<td>Temuka Catchment Group Incorporated</td>
</tr>
<tr>
<td>TCWP</td>
<td>Temuka Catchment Working Party</td>
</tr>
<tr>
<td>TWUG</td>
<td>Te Ana Wai (TeNgawai) Water Users Group</td>
</tr>
<tr>
<td>Timaru DC</td>
<td>Timaru District Council</td>
</tr>
<tr>
<td>Waimakariri DC</td>
<td>Waimakariri District Council</td>
</tr>
<tr>
<td>WIL</td>
<td>Waimakariri Irrigation Limited</td>
</tr>
<tr>
<td>Waimakariri NGF</td>
<td>Waimakariri Next Generation Farmers Trust</td>
</tr>
<tr>
<td>Waimate DC</td>
<td>Waimate District Council</td>
</tr>
<tr>
<td>WWHT</td>
<td>The Water and Wildlife Habitat Trust</td>
</tr>
</tbody>
</table>
Part 1: Introduction and Planning Context

1. Purpose of Report

1.1. This report\(^1\) is prepared under the provisions of Section 42A of the RMA and assesses information provided in the submissions on PC7 and PC2.

1.2. The purpose of this report is to provide the Hearing Panel with a summary and analysis of the submissions made on PC7 and PC2 and to make recommendations on possible amendments to these plan changes in response to those submissions.

1.3. This report has been prepared by the following authors. Brief statements of the authors’ qualifications and experience are contained in Appendix A.

- Adele Dawson – Senior Planner (Incite)
- Andrea Richardson – Senior Planner (Canterbury Regional Council)
- Angela Fenemor – Associate Planner (Incite)
- Daniel Clark – Senior Scientist (Canterbury Regional Council)
- Lochiel McKellar – Planner (Canterbury Regional Council)
- Matthew McCallum-Clark – Director (Incite)
- Philip Maw – Solicitor (Wynn Williams)
- Shirley Hayward – Principal Scientist (Canterbury Regional Council)
- Duncan Gray – Senior Freshwater Ecology Scientist (Canterbury Regional Council)
- Jarred Arthur – Water Quality and Ecology Scientist (Canterbury Regional Council)
- Lisa Scott – Groundwater Scientist (Canterbury Regional Council)
- Fouad Alkhaier – Senior Scientist (Canterbury Regional Council)
- Amber Kreleger – Groundwater Scientist (Canterbury Regional Council)
- Zeb Etheridge – Water Resource Scientist (Canterbury Regional Council)
- Mark Megaughin – Hydrologist (Beca)

1.4. The recommendations are informed by both the technical information provided by the technical authors and the evaluation undertaken by the planning authors. Both planning and technical authors, are identified for each section of this report, and for specific paragraphs where relevant. Throughout the text of the report, “we” and similar terms are used to identify these authors. The recommendations made on any provisions of PC7 are recommendations of the relevant planning author.

1.5. It should be emphasised that any conclusions reached or recommendations made in this report are not binding on the Hearing Panel. It should not be assumed that the Hearing Panel will reach the same conclusions having considered all the information in the submissions and the evidence to be brought before them, by the submitters.

---

\(^1\) This report is variously referred to in the text as ‘the report’ or ‘the s42A report’, or ‘the Section 42A Report’.
**About Plan Change 7 to the CLWRP**

1.6. Proposed Plan Change 7 to the CLWRP proposes to amend the region-wide sections 1, 2, 4, 5 and 16, and sub-region sections 7, 8, 11, 12, 13, 14 and 15 of the CLWRP, in three separate packages, being:

- Part A of PC7- Omnibus: Amendments to the region-wide sections 1, 2, 4, 5 and 16, and sub-regions sections 11, 13 and 15 of the CLWRP. The CLWRP Planning Maps are also amended;
- Part B of PC7 - Orari-Temuka-Opihi-Pareora sub-region: Amendments to Section 14 and Section 16 (Schedules 7 and 7A) of the CLWRP. The CLWRP Planning Maps are also amended; and
- Part C of PC7 - Waimakariri sub-region: Amendments to Section 8 and consequential amendments to Section 7 (Hurunui-Waiau), Section 12 (Central Canterbury Alpine Rivers), and Section 16 (Schedules 7, 7A and 14) of the CLWRP. The CLWRP Planning Maps are also amended.

**Part A of Plan Change 7 – Omnibus**

1.7. Part A of PC7 (Omnibus) amends the region-wide sections 1, 2, 4, 5 and 16 of the CLWRP, and sub-region Section 13 (Ashburton). Consequential amendments are also proposed to sub-region Sections 11 (Selwyn Te Waihora) and 15 (Waitaki and South Coastal Canterbury). The CLWRP Planning Maps are also amended.

1.8. The amendments proposed as part of Part A of PC7 are to ensure the CLWRP responds appropriately to new directives from central government, emerging environmental issues, and changes in matters that are strategic priorities for Environment Canterbury.

1.9. Part A of PC7 introduces region-wide responses to a range of issues that have emerged, particularly arising from amendments to the NPSFM, the introduction of the NESPF and provisions for managing a number of discrete activities or topics.

1.10. Proposed amendments to policies, rules and schedules cover the following key topic areas:

- NPSFM;
- NESPF;
- Ngāi Tahu values;
- Habitats of indigenous freshwater species;
- HDWP recommendations;
- Managed aquifer recharge;
- Commercial vegetable growing operations;
- Schedule 6 (Freshwater bathing sites);
- Schedule 17 (Salmon spawning sites); and
- Minor topics.

**Part B of Plan Change 7 – Orari Temuka Opihi Pareora sub-region**

1.11. Part B of PC7 amends Section 14 (Orari-Opihi-Pareora) of the CLWRP to become the OTOP sub-region. Part B of PC7 proposes new provisions for the management of land use, freshwater quality and quantity, and the protection of sites of cultural significance in the OTOP.
sub-region. These provisions respond to recommendations made by the OTOP ZC in their ZIPA. The recommendations in the ZIPA were developed through a collaborative process led by the OTOP ZC and sets out the community’s preferred outcomes for freshwater in the OTOP sub-region as described in the OTOP Zone Implementation Programme.

1.12. Part B of PC7 proposes new provisions to manage the quantity and quality of freshwater, focusing on abstractions and allocation of freshwater and the minimisation of nutrient losses from farming activities. In addition, there are provisions proposed to protect sites of cultural significance throughout the sub-region, including rock art (tuhituhi neherā) sites and waipuna (springs).

1.13. To manage freshwater resources in the OTOP sub-region, Part B of PC7 proposes to divide the sub-region into six FMUs as follows:
- Orari FMU;
- Temuka FMU;
- Opihi FMU;
- Timaru FMU;
- Pareora FMU; and
- A single FMU comprising the entire sub-region for groundwater, including the seven Groundwater Allocation Zones in the sub-region as sub units.

1.14. The architecture of Part B of PC7 is similar to that of other sub-regional sections in the CLWRP, by first setting out proposed provisions that apply sub-region wide. Where a tailored response is required to address issues specific to an FMU, FMU-specific provisions are proposed. The proposed provisions manage the allocation and abstraction of freshwater and require reductions, over time, to reduce over-allocation of surface water resources. Provisions to manage potential adverse impacts from farming activities, adopt the region-wide nutrient management framework as a starting point. In some areas within the OTOP sub-region, technical information supporting the development of the ZIPA indicates that water quality outcomes will not be met when applying the region-wide nutrient management provisions. In these areas, further reductions in nitrogen loss are required over time. New provisions are also proposed to manage the impacts of farming land use activities, the take and use of water and discharge of contaminants on sites of cultural significance.

**Part C of Plan Change 7 – Waimakariri sub-region**

1.15. Part C of PC7 amends Section 8 (Waimakariri) of the CLWRP to include new provisions for the management of freshwater in the Waimakariri sub-region. These amendments are in response to recommendations developed through a collaborative process led by the Waimakariri ZC.

1.16. Part C of PC7 comprises an integrated package of plan provisions to manage the effects on water quality arising primarily from agricultural activities and the effects associated with the abstraction of water. The plan provisions include policy direction to protect and enhance ecosystem health, tangata whenua and biodiversity values.

1.17. The provisions that manage farming activities use the region-wide nutrient management provisions for Red NAZ as a starting basis. The technical information supporting Part C of PC7 indicates that water quality outcomes for the sub-region will not be met by applying the region-wide nutrient management provisions, requiring further restrictions on farming activities and, in some cases, additional reductions in nitrogen losses, over time.
1.18. The provisions that manage water quantity set environmental flow and allocation regimes for waterbodies within the Waimakariri sub-region. The flow and allocation regimes include minimum flows, allocation limits and partial restrictions for surface water abstractions and allocation limits for groundwater. The technical information supporting Part C of PC7 indicates that some components of the existing regimes are insufficient to ensure that the values of the waterways are maintained, where the proposed environmental flow and allocation regimes in Part C of PC7 are set to overcome these issues.

**About Plan Change 2 to the WRRP**

1.19. Proposed Plan Change 2 to the WRRP proposes to remove the area from the WRRP that is within the Waimakariri sub-region as defined in Section 8 of the CLWRP. The WRRP continues to apply to the mainstem of the Waimakariri River, the upper catchment area and the tributaries to the south of the Waimakariri River. A consequence of PC2 is that a single regional plan, the CLWRP, would apply to the Waimakariri sub-region.

1.20. The WRRP currently manages water quantity, activities in the bed of lakes and rivers and water quality (point source discharges) in the Waimakariri River catchment area. This area partially overlaps with Section 8 of the CLWRP and the CWMS Waimakariri Water Zone.

1.21. During the development of the Waimakariri ZIPA, the Waimakariri ZC identified that having two regional plans managing freshwater in the same zone adds unnecessary complexity for plan users and the Council, and a simpler planning framework would be preferable. The simpler planning framework is proposed to be achieved by incorporating the part of the WRRP that applies to the Waimakariri sub-region into Section 8 of the CLWRP. This is consistent with the policy intent for the CLWRP, as expressed in Section 2.8 of the CLWRP, which states:

*In the future this Plan will manage all land and water activities (that can be controlled by a regional council) in the Canterbury Region. At the time of notifying this Plan there are a number of separate regional plans that control specific aspects of land and water separately. These plans continue to operate separately from this Plan until they are reviewed, or a catchment specific collaborative process is undertaken to review limits. At that point they are to be incorporated into this Plan.*

1.22. The scope of PC2 to the WRRP is limited to amendments necessary to remove the area managed under Section 8 of the CLWRP from the WRRP. The amendments include:

a. Amendments to Section 1.3 (Area to which the plan applies) and Section 1.4 (How to Use This Plan)

b. Addition of a new definition ("Waimakariri River Catchment")

c. Amendments to policies, rules, tables and appendices to remove reference to the waterbodies that will be managed under the CLWRP;

d. Amendments to the Planning Maps and Figures to remove the area that will be managed under the CLWRP.
2. Format and Assessment Approach

2.1. This section details the format and structure of this Section 42A Report including the reporting and analysis approach taken to the assessment of submissions, including any assumptions made.

Submissions & Further Submissions

2.2. Proposed Plan Change 7 to the CLWRP and PC2 to the WRRP were publicly notified on 20 July 2019, with the submission period ending on 13 September 2019. Within this period, 560 submissions were received on PC7 and 28 submissions were received on PC2. The SoDR was publicly notified on 18 November 2019, with the period for making further submissions closing on 13 December 2019. Two addenda to the SoDR were subsequently notified on 4 December 2019\(^2\) and 18 January 2020\(^3\). Thirty-five further submissions were received.

Reporting Approach

2.3. The report is set out in a structure that assesses Parts A, B and C of Plan Change 7 to the CLWRP and Plan Change 2 to the WRRP separately. Matters that are applicable to more than one of Parts A, B and C of PC7 are generally assessed in the ‘Common Themes’ Section of this report that precedes these sections and are not repeated in the individual Parts of PC7.

2.4. Recommendations are made where appropriate, and these are either to retain provisions without amendment, add to or amend the provisions with the amendment shown by way of strikeout and underlining. Where the authors consider that an amendment may be appropriate but consider it would be beneficial to hear further evidence before making a final recommendation, this is made clear within the report. In the absence of a specific recommendation, the default position of the authors is to retain the provisions as notified in PC7 and PC2. All recommended changes are set out in an accompanying ‘tracked changes’ versions of PC7 and PC2, and have footnoted references with a submission point and submitter name that provides the scope for the recommended change.

2.5. Proposed Plan Change 7 to the CLWRP and PC2 must be prepared in accordance with the Council’s functions under section 30 of the RMA, Part 2 of the RMA, and its obligation to prepare an evaluation report under section 32 of the RMA, any further evaluation required by section 32AA of the RMA, and to have particular regard to the evaluation reports and any regulations.\(^4\)

2.6. The role of Part 2 in the assessment of planning documents (particularly the requirement to give effect to higher order planning documents under section 67) has been the subject of the Supreme Court’s decision in *Environmental Defence Society Incorporated v New Zealand King Salmon Company Limited*\(^5\)

2.7. The implication of the Supreme Court’s decision is that in assessing PC7 and PC2, an overall judgment approach cannot be relied on to justify a departure from directive policies in the higher order documents.

\(2\) For points previously transcribed incorrectly in the SoDR.
\(3\) For points previously omitted from the SoDR.
\(4\) RMA, section 66
\(5\) *Environmental Defence Society Incorporated v New Zealand King Salmon Company Limited* [2014] NZSC 38
2.8. As a result of the Supreme Court’s decision, it is considered that resort to Part 2 in considering how a Council promoted change to a regional plan should give effect to the relevant higher order documents (i.e. NZCPS, national policy statements and CRPS) and the Council’s duties under section 32, is only relevant where those higher order documents do not “cover the field”, or where there is uncertainty as to the meaning of particular policies.

2.9. In the case of PC7 and PC2, the Council considers the relevant higher order statutory directions have been given effect to as required, applying the approach in King Salmon. Most relevant are the directions within the CRPS and the NPSFM.

2.10. In terms of whether the NPSFM ”covers the field”, the NPSFM is not concerned with enabling activities that require water, biodiversity and the use of land. This is left to other policy statements and other superior documents such as the CRPS. In this case, it is submitted that the NPSFM does not "cover the field".

2.11. While the NPSFM does not "cover the field", it is considered that the CRPS does and that where no direction is found in applicable policies of the NPSFM, the Council still has guidance from the more extensive policies contained in the CRPS.

2.12. Further discussion on the application of Part 2 of the RMA is set out in Appendix B.

2.13. The submissions have been assessed against these criteria and the reasons given in the report for recommended changes, or for retaining the notified provisions often relates to these criteria, even where it is not explicit.

Submissions and Further Submissions

2.14. In preparing the evaluation of the submissions and further submissions lodged on PC7 and PC2, a number of assumptions have been made.

2.15. Individual provisions of PC7 received a number of submissions and to avoid identifying every submitter these have been grouped in the discussion of individual policies or rules. This means that individual submitters are often not identified and alternatively the reporting on submitters is often generalised [e.g. ‘a large number of submissions were received on Policy…] and only a single submitter or submission point is shown. This has been done as a means of confirming that there is scope within the submissions to make the requested change, rather than identifying or prioritising particular submitters. Where provisions are recommended to be retained without amendment, there is no footnote reference to any submission point.

2.16. There are further submissions on the majority of submission points. The further submissions have been closely reviewed along with the relevant submission point. The majority of further submissions are from original submitters. For most further submission points, the issue is clearly ‘live’ from the submitters’ original submission. On this basis, only in exceptional cases are further submission points noted.
3. Legal and Statutory Context

Executive Summary – Legal Issues

3.1. Detailed analysis of jurisdictional and specific legal issues raised by submissions can be found within this section of the report, with cross references to this analysis in the relevant planning discussion.

3.2. A number of scope issues have been raised. A common issue is submitters seeking to change plan provisions which are not altered, or only altered in a very minor way, by PC7. Submissions of this type are subject to a high level of risk that affected parties may not have received fair and adequate notice of the nature of changes proposed. To the extent that submitters wish to pursue relief of this type, it is submitted that they should be required to demonstrate how the changes sought are within the jurisdiction of the CRC.

3.3. Further legal analysis covers matters including:
   a. Criticisms of the section 32 analysis in respect of PC7; and
   b. The role of the ZIPA in developing PC7.

3.4. These matters are addressed in the relevant planning sections of this section 42A report.

3.5. Discussion of the statutory framework for assessing PC7 can be found at Appendix B.

Jurisdictional Issues

3.6. PC7 raises the following jurisdictional issues:
   a. Potentially invalid submissions because they are either not in the prescribed form or they are not “on” PC7; and
   b. Submissions which do not request specific relief.

3.7. For any particular change sought to PC7, the Council must consider whether a submission provides scope to make the change.

Invalid submissions and submissions not “on” PC7

3.8. This section will address:
   a. The ‘Blue box’ issue
   b. Submissions not on PC7 for example submissions discussing general monitoring and enforcement by the Council; and
   c. The use of clause 16(2) of Schedule 1 to the RMA.

3.9. Before recommending any amendments to PC7, the Hearing Panel must consider whether there is scope to make such amendments. In doing so, the Hearing Panel must consider whether:
   a. Submissions received are “on” PC7; and

---

*Legal analysis has been prepared by Wynn Williams.*
b. Any amendments are within the scope of a submission such that the Hearing Panel has jurisdiction to recommend the amendments.

3.10. Clause 6(1) of Schedule 1 to the RMA provides that when a plan change is publicly notified under clause 5 of Schedule 1, the Council and any person may make a submission “on” the plan change.

3.11. Submissions on a plan change must be in the prescribed form. The form requires a submitter to give details of the specific provisions of the plan change that the submission relates to, and to give precise details of the decision which the submitter seeks from the local authority.\(^7\)

3.12. Submissions must be “on” PC7,\(^8\) and if a submission is not “on” PC7, then the Hearing Panel does not have jurisdiction to consider it.

3.13. The Courts have endorsed a bipartite approach when considering whether a submission is “on” a plan change. First, the submission must reasonably fall within the ambit of the plan change by addressing a change to the status quo advanced by the proposed plan change. Secondly, the Hearing Panel should consider whether there is a real risk that persons potentially affected by the changes sought in a submission have been denied an effective opportunity to participate in the plan change process.\(^9\)

3.14. If a management regime in a plan for a particular resource is unaltered by the plan change, a submission seeking a new or different management regime for that resource is unlikely to be “on” the plan change (unless the change is incidental or consequential, as discussed below).

3.15. If the effect of regarding a submission as being “on” a plan change would be to permit a planning instrument to be appreciably amended without real opportunity for participation by those potentially affected, that will be a “powerful consideration” against finding that the submission was truly “on” the plan change.\(^10\)

3.16. Further, when considering whether to recommend any amendments to PC7 the Hearing Panel must be satisfied that any such amendments are within the scope of submissions.

3.17. Case law has established that for an amendment to be considered within the scope of a submission, the amendment must be fairly and reasonably within the general scope of:\(^11\)
    a. An original submission; or
    b. The plan change as notified; or
    c. Somewhere in between.

3.18. The question of whether an amendment goes beyond what is reasonably and fairly raised in submissions will usually be a question of degree, to be judged by the terms of the plan change and the content of submissions. This should be approached in a realistic workable fashion rather than from the perspective legal nicety, with consideration of the whole relief package detailed in submissions.

---


\(^8\) Resource Management Act 1991, Sch 1, cl 6(1).

\(^9\) Palmerston North City Council v Motor Machinists Ltd [2013] NZHC 1290 at [90], endorsing the approach of William Young J in Clearwater Resort Ltd v Christchurch City Council HC Christchurch AP34/02, 14 March 2003. See also Mackenzie v Tasman District Council [2018] NZHC 2304 for a more recent application of the test.

\(^10\) Clearwater Resort Ltd v Christchurch City Council HC Christchurch AP34/02, 14 March 2003 at [66].

\(^11\) Re Vivid Holdings Ltd (1999) 5 ELRNZ 264 at [19].
3.19. Further the courts have recognised that councils need scope to deal with the realities of the situation and a legalistic interpretation that a council can only accept or reject relief sought in any given submission is unreal.\(^\text{12}\) Approaching such amendments in a precautionary manner, to ensure that people are not denied an opportunity to effectively respond to additional changes in the plan change process, has also been endorsed by the courts.\(^\text{13}\)

3.20. Changes that are considered to be incidental to, consequential upon, or directly connected to the plan change are also considered to be within scope.\(^\text{14}\)

3.21. An amendment can be anywhere on the line between the plan change and the submission. Consequential changes can flow downwards from whatever point on the first line is chosen, as a submission may only be on an objective or policy, but there may be methods or rules which are then incompatible with the new objective or policy in the proposed plan change as revised,\(^\text{15}\) which would then also require an amendment, as a consequential change.

3.22. Further, amendments required for clarity and refinement of detail are allowed on the basis that such amendments are considered to be minor and un-prejudicial.\(^\text{16}\)

### “Blue box” issue

3.23. The way in which PC7 has been collated has also raised some issues in terms of the scope of some submissions. The program used to compile and draft PC7 creates a blue box around provisions in which the text has changed. As soon as a change is made to a provision, no matter how minor, a blue box is placed around the entire provision.

3.24. As is set out in PC7:

3.25. There are a number of submissions which have sought changes to text that is surrounded by the blue box (for example, changes to the Schedule 8 groundwater limits, when in effect it is only the footnote numbering that was to be amended).\(^\text{17}\) These changes sought do not relate to the proposed changes that form part of PC7. The submissions appear to suggest that because some of the text of that provision has been changed, other unrelated changes to the provision may also be able to be sought.

---


\(^{13}\) General Distributors Ltd v Waipa District Council (2008) 15 ELRNZ 59 at [58]-[60]; Palmerston North City Council v Motor Machinists Ltd [2013] NZHC 1290 at [82].

\(^{14}\) Well Smart Holding (NZQN) Limited v Queenstown Lakes District Council [2015] NZEnvC 214 at [16].

\(^{15}\) Campbell v Christchurch City Council [2002] NZRMA 332 [EnvC] at [20].

\(^{16}\) Oyster Bay Developments Limited v Marlborough District Council EnvC C081/2009, 22 September 2009 at [42].

\(^{17}\) WWHT (PC7-88.100), G Fenwick (PC7-339.9, PC7-339.12).
3.26. Where amendments are sought to parts of provisions that PC7 is not seeking to amend, this relief does not represent a change to the status quo advanced by the proposed plan change. There also remains a real risk that others would not have submitted on those requested changes, as changes to those parts of the provision were not signalled in the notified version of PC7. It is not the existence of a blue box around a provision that determines the scope of the proposed plan change; that is determined by the actual amendments notified.

3.27. For those reasons, it is considered that these submissions are not “on” PC7, and the relief requested is outside the scope of the proposed plan change.

Submissions not “on” PC7

3.28. A number of submissions seek relief that is outside the scope of the Council’s functions in relation to a regional plan. By way of example, some submissions seek the addition of new freshwater outcomes or attributes to Tables 1a and 1b, or an entirely new table altogether in relation to groundwater.\(^{18}\) There is also a submission seeking a total ban on whitebait fishing for a 10 year trial period.\(^{19}\) Another submission seeks to add a wider range of water quality limits to Schedule 8 including insecticides.\(^{20}\)

3.29. These submissions request relief that is not “on” PC7, as the relief is not a result of a change to the status quo proposed by the Council. There is a real risk that relief of this sort would not be contemplated by other members of the public, and there would be other groups or persons that would seek to submit if they had been aware that those provisions may have been up for amendment.

3.30. In some cases, the requested relief is outside of the jurisdiction of the Council to be able to provide.\(^{21}\) Where the relief sought goes beyond a regional council’s functions (set out in section 30 of the RMA) this is not part of the scope of PC7, and it is not possible for the Council to recommend an amendment to PC7 to accommodate those submissions.

3.31. Where a submission is not “on” the proposed plan change, but it does request relief that is within the scope of the functions of the Council, the submitter has other options: to submit an application for resource consent, to seek a further public plan change, or to seek a private plan change.

Use of Clause 16(2), Schedule 1 to the RMA

3.32. For completeness, we note that the Council has the ability to make amendments to PC7 in accordance with clause 16(2) of Schedule 1 to the RMA. Clause 16(2) provides for alterations that are of minor effect, or to correct any minor errors.

3.33. The scope of any such amendments is limited to those which would be neutral, and therefore do not affect the rights of members of the public.\(^{22}\)

---

\(^{18}\) G Fenwick (PC7-339.3, PC7-339.4), WWHT (PC7-88.12, PC7-88.18), WWHT (PC7-88.13).

\(^{19}\) I Forsyth (PC7-152.3).

\(^{20}\) A Bray (PC7-548.1).

\(^{21}\) Some examples of these are in Section 8, below, in relation to submission points not on PC7.

\(^{22}\) Re an Application by Christchurch City Council (1996) 2 ELRNZ 431 (EnvC) at 10.
3.34. Further, the power to correct minor errors is limited to changes that would not alter the meaning of the document (such as typographical or cross-referencing errors).  

3.35. We note that Council officers have recommended the Hearing Panel consider using Clause 16(2) of Schedule 1 to the RMA to make alterations of minor effect, or to correct any minor errors, in this report.

**Summary regarding scope of submissions**

3.36. When considering whether to recommend any amendments to PC7 the Hearing Panel must be satisfied that any such amendments are within the scope of submissions, and that the submissions are “on” PC7. The main jurisdictional issues that have been raised in respect of PC7 are in relation to the “blue box” issue, and whether submissions are “on” PC7.

3.37. A number of submissions seek to make changes to provisions that are surrounded by a “blue box” automatically created by the program used to draft PC7, but the changes sought are not on the parts of the provisions that are proposed to be amended by PC7.

3.38. Where the relief sought is not a result of a change to the status quo proposed by the Council, and there is a real risk that relief of this sort would not be contemplated by other members of the public (who would have sought to submit on those amendments) influence whether a submission is considered to be “on” PC7.

3.39. In the case of the blue box issue, it is not the existence of a blue box around a provision that determines the scope of the proposed plan change; that is determined by the actual amendments notified. There are also other submissions which seek relief that is not on the spectrum between the status quo and the Council’s proposed changes to provisions, which therefore raise issues of whether other persons would have wished to submit had they contemplated those changes could be made. For those reasons, there are a number of submissions that we consider to be outside the scope of PC7, and therefore should not be considered by the Hearing Panel in respect of potential changes to PC7.

**Legal discussion – criticisms of the section 32 analysis in respect of PC7**

3.40. Section 32 of the RMA applies to PC7 as an amending proposal to a plan. The objectives in the CLWRP are unaltered by PC7. Accordingly, PC7 must be assessed in the following terms. The evaluation must:

   a. Examine the extent to which the purpose of PC7 is the most appropriate way to achieve the purposes of the RMA;  
   b. Examine whether the provisions (the policies, rules, or other methods to implement the objectives) are the most appropriate way to achieve the objectives by:
      i. Identifying other reasonably practicable options for achieving the objectives;
      ii. Assessing the efficiency and effectiveness of the provisions in achieving the objectives (the efficiency and effectiveness assessment); and
      iii. Summarising the reasons for deciding on the provisions;

---

23 *Re an Application by Christchurch City Council* (1996) 2 ELRNZ 431 (EnvC) at 11.
24 RMA, s 32(1)(a).
25 RMA, s 32(1)(b).
c. Contain a level of detail that corresponds to the scale and significance of the environmental, economic, social and cultural effects that are anticipated from the implementation of PC7.\[26\]

3.41. The efficiency and effectiveness assessment must:\[27\]
   a. Identify and assess the benefits and costs of the environmental, economic, social and cultural effects that are anticipated from the implementation of the provisions, including opportunities for economic growth (that are anticipated to be provided or reduced) and;
   b. If practicable, quantify the benefits and costs; and
   c. Assess the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the provisions.

3.42. Under section 32(3) of the RMA, where the proposal amends an existing plan (as is the case here) the examination of whether the provisions in PC7 are the most appropriate way to achieve the objectives must relate to:
   a. The provisions and objectives (being the purpose of the proposal) of PC7; and
   b. The relevant and continuing objectives of the CLWRP.\[28\]

3.43. Section 32(6) of the RMA defines objectives, proposal and provisions as follows:

   objectives means -
   (a) for a proposal that contains or states objectives, those objectives;
   (b) for all other proposals, the purpose of the proposal

   proposal means -
   a proposed standard, statement, national planning standard, regulation, plan or change for which an evaluation report must be prepared under this Act

   provisions means -
   (a) for a proposed plan or change, the policies, rules, or other methods that implement, or give effect to, the objectives of the proposed plan or change;
   (b) for all other proposals, the policies or provisions of the proposal that implement, or give effect to, the objectives of the proposal

3.44. Whilst PC7 does not itself contain objectives, the appropriateness of the policies and rules to be introduced by PC7 have been assessed against the objectives of the CLWRP and the purpose of PC7.

3.45. Under Schedule 1 of the RMA, particular regard must be had to the section 32 report when the decision is made as to whether or not to notify PC7. The section 32 report for PC7 made available at the time of notification.

3.46. Section 32A(1) provides that a challenge to an objective, policy, rule or other method on the ground that the section 32 report has not been prepared or regarded, or the requirements of section 32 have not been complied with, may only be made in a submission (rather than, for example, judicial review proceedings).

\[26\] RMA, s 32(1)(c).
\[27\] RMA, s 32(2).
\[28\] RMA, s 32(3).
3.47. Section 32A(2) makes it clear that in considering PC7, regard may be had to the matters stated in section 32 and, as set out below, in reaching a decision on a plan change, whether a further evaluation is required.

3.48. Section 32 requires a value judgment as to what, on balance, is the most appropriate option when measured against the relevant objectives. In Rational Transport Society Incorporated v New Zealand Transport Agency, the High Court rejected the submission that in order to be “most appropriate”, a plan change must be the superior method; the Court found that “appropriate” meant suitable, and there was no need to place any gloss upon that word by incorporating that it be superior.29

3.49. Further, the Court did not agree that section 32(3)(b) mandated that each individual objective had to be “the most appropriate” way to achieve the RMA’s purpose. Each object was required to be examined in the process of evaluation. Objectives could not be looked at in isolation because the extent of each objective’s relationship in achieving the purpose of the Act may depend on inter relationships.30

3.50. In Art Deco Society (Auckland) Incorporated v Auckland Council the Environment Court held that an “holistic” approach should be taken in that case, rather than a more focused, vertical or “silo” approach to objectives, policies and methods.31

3.51. More recently, the Environment Court in Lindis Catchment Group Incorporated v Otago Regional Council (which involved a change to the regional water plan managing the Lindis River by setting minimum flow and “primary allocation” of water) found that the efficiency analysis under section 32 requires a comparison of the net social benefits32 of the various options as to the proposed minimum flows and primary allocations.33

3.52. Commenting specifically on when the assessment of what is a “reasonably practicable option” should be made and what that assessment should look like, the Court found:34

...Obviously it would be useful if the assessment could be made early so that irrelevant options did not have to be considered. But equally obviously it is important not to make premature judgements.

We consider that the status quo is almost always to be regarded as a “reasonably practicable option” because it exists: it is the situation on the ground or in the water at the time of the hearing. Persons making evaluations under section 32 should be careful to avoid precluding the existing situation (especially if it is greenfields or clear water) as a reasonably practicable option by proponents arguing that the cost of the resource (e.g. land) is so high that the status quo cannot remain. What is reasonably practicable should not be defined by speculative capital costs or (usually) by the financial viability of a proposal...

3.53. Several submitters have raised perceived issues with the section 32 report prepared for PC7. These concerns include requests for further information or analysis of the costs and benefits

---

33 Lindis Catchment Group Incorporated v Otago Regional Council [2019] NZEnvC 166 at [195].
34 Lindis Catchment Group Incorporated v Otago Regional Council [2019] NZEnvC 166 at [197]-[198].
of proposed provisions, or that long-term economic impacts and community wellbeing have not or could not have been assessed.

3.54. A section 32 report has been prepared for PC7 and was available at the time of notification of PC7. The section 32 report meets the requirements of section 32, set out above, and developed in case law. Section 32A provides that a challenge to an objective, policy, rule or other method on the grounds that the section 32 report has not been prepared or regarded, or the requirements of section 32 have not been complied with, may only be made in a submission (rather than, for example, judicial review proceedings). It is considered that a challenge to any particular provisions on the basis of an inadequate section 32 report can be considered "on" PC7.

3.55. However, requesting a further section 32AA analysis of matters within the submitter’s concern prior to the hearing is arguably not within jurisdiction. Section 32A(2) makes it clear that in considering PC7 the Hearing Commissioners may have regard to the matters stated in section 32 and, in reaching a decision on a plan change, whether a further evaluation in accordance with section 32AA is required. Therefore, whether a further evaluation is required is for the Hearing Panel to determine.

Legal discussion – the role of the ZIPA in developing PC7

3.56. As set out in greater detail in in Appendix B, in order to give effect to the CWMS vision and principles, a collaborative Zone Committee process was established through the CWMS to enable community informed outcomes. The processes that the Waimakariri and the Orari-Opihi-Pareora Zone Committees went through in reaching their recommendations on PC7 are described in the section 32 report.

3.57. The Environment Canterbury (Temporary Commissioners and Improved Water Management) Act 2016 (ECan Act 2016) came into force on 10 May 2016. This provides the Council with the continuation of certain powers from the Environment Canterbury (Temporary Commissioners and Improved Water Management) Act 2010 that it would not otherwise have, to address issues relevant to the efficient, effective, and sustainable management of freshwater in the Canterbury region.

3.58. In considering PC7, particular regard must be had to the vision and principles of the CWMS, which are set out in Schedule 3 of the ECan Act 2016. This is in addition to the matters relevant under the RMA to its decisions made under clause 10(1) of Schedule 1 of the RMA. Section 21(2) of the ECan Act 2016 states that the inclusion of the vision and principles of the CWMS in Schedule 3 does not accord to the CWMS or its vision and principles any status in law other than as provided in that Act.

35 See for example V Buck (PC7-525.5); WIL (PC7-349.23); S & J Tallott (PC7-405.26); CCC (PC7-337.146, PC7-337.179), Dairy Holdings Ltd (PC7-415.63).
36 DairyNZ, page 4, SCCC PC7-340.1, Ballance PC7-441.48
37 RMA, s 32A.
38 Section 32 Report, Sections 8 and 13.
39 For completeness, we note that section 5, Part 3, and Schedules 1 to 3 of the ECan Act 2016 came into force on the transition day, as defined in the ECan Act 2016.
3.59. The vision of the CWMS is:

To enable present and future generations to gain the greatest social, economic, recreational and cultural benefits from our water resources within an environmentally sustainable framework.

3.60. The fundamental principles of the CWMS are sustainable management, a regional approach, and kaitiakitanga. The supporting principles are natural character, indigenous biodiversity, access, quality drinking water, recreational and amenity opportunities, and community and commercial use.

3.61. While section 24 of the ECan Act 2016 requires particular regard to be had to the vision and principles of the CWMS, the vision and principles of the CWMS are also being given effect to in Canterbury through the wider auspices of the CWMS as a whole. The CWMS ushered in a collaborative and integrated management approach to freshwater management, seeking to maximise opportunities for the region’s environment, economy and community. The CWMS identified that a shift was required from effects-based management of individual consents, to integrated management based on water management zones, and the management of cumulative effects of both water abstraction and land use intensification. In order to give effect to the CWMS vision and principles, a collaborative Zone Committee process was established through the CWMS to enable community informed outcomes.

3.62. The CWMS and the relevant zone committees’ ZIP Addenda is the outcome of extensive consultation and community participation aimed at reaching a consensus as to how to best manage the freshwater resources in the Orari-Temuka-Opihi-Pareora and Waimakariri sub-regions. The CWMS has been endorsed by the Council and all of the territorial authorities in the Canterbury region. As such, it provides valuable guidance about how the people and communities of Canterbury wish to see provision for their wellbeing and health and safety, through the management of the use, development and protection of resources, including water and land. In addition, the CWMS and the Zone Committee process established under it, is one way that the Council has sought to involve the community, including iwi and hapū, in how best to give effect to the NPS-FM.

3.63. Although there is no statutory requirement for PC7 to incorporate or give effect to the entire content of the CWMS, the document as a whole is an important component in determining the most appropriate way of achieving the purpose of the RMA. A decision-maker may also have regard to the CWMS as a whole as a relevant consideration. The CWMS is not a “strategy prepared under other Acts”, in terms of section 66(2)(c)(i) of the RMA, and so is not a mandatory consideration under that section. However, section 66(2)(c) does not create an exhaustive list of considerations. The High Court has held that regard may be had to non-binding national policy documents, as relevant background material, even if those documents do not have any status under the RMA. Further, it is submitted, that in having particular regard to the vision and principles of the CWMS, it is necessary to have regard to the CWMS as a whole and the Zone Committee process established under the CWMS, and the ZIP Addendum, in order to give effect to the vision and principles of the CWMS (and the NPS-FM).

3.64. Some submissions have sought changes to PC7 on the basis that it does not reflect the community outcomes set out in the various ZIPA affected. The requirements for a regional plan are set out in section 66 of the RMA, and list the various documents required to be given effect to. There is no statutory requirement for PC7 to incorporate or give effect to the ZIPA

40 West Coast Regional Council v The Friends of Shearer Swamp [2012] NZRMA 45.
41 For example; TWUG PC7-68.46, M Hawkins PC7-97.39
recommendations, as they do not fall within the categories of documents listed in section 67(3).

3.65. While the ZIPAs and the CWMS as a whole are relevant matters for the Council to have regard to when preparing PC7, the recommendations contained within them are not required to be adopted verbatim. The Council, as it has done so in this case, must go through an evaluating exercise to determine whether the recommendations are the most appropriate way to achieve the purpose of the Act.

3.66. A number of submissions have queried the appropriateness of including provisions in PC7 that were not identified in the ZIPA. As discussed above, as the ZIPA is a relevant matter for the Council to have regard to, there is no requirement to mirror the ZIPA in the provisions of PC7. The ZIPA is one consideration for the Council when determining the most appropriate way to achieve the purpose of the Act.

3.67. Further, some submissions on the OTOP sub region provisions state that the flow and allocation limits recommended by catchment working groups in the ZIPA are not representative of their views. For the same reasons discussed above, the provisions of PC7 are not required to mirror the contents of the ZIPA. Those submitters who consider the proposed flow and allocation limits do not represent their views now have the opportunity to provide further information regarding the flow and allocation regime they consider is representative of their views.

---

42 For example; Ashley Oaks Farm PC7-330.1, T & H Molloy PC7-257.1
43 For example; Arowhenua and Te Rūnanga PC7-424.193, J Richardson PC7-65.34
Part 2: Common Themes in Submissions on PC7 and PC2

1. Introduction

1.1. This section of the Section 42A Report discusses submissions that are common to more than one part of PC7 and PC2, and is intended to build a picture of, and respond to, the more general issues raised.

1.2. The following common themes are addressed:

- Te Mana o te Wai
- The use of Overseer, the Farm Portal and GMP
- Waipuna (springs)
- Drafting style
- Other submissions on the whole of PC7
- Submissions not considered to be on PC7
- Submissions seeking new region-wide definitions

2. Te Mana o Te Wai

2.1. Te Mana o te Wai is a concept that was first described in the 2014 version of the NPSFM, and considerably expanded upon and elevated in the 2017 amendment to the NPSFM. In the NPSFM, Te Mana o te Wai is described in relation to the ‘national priority’ and is the subject of Objective AA1 and Policy AA1.

2.2. The NPSFM has a single national priority of:

\[ \text{The matter of national significance to which this national policy statement applies is the management of fresh water through a framework that considers and recognises Te Mana o te Wai as an integral part of freshwater management.} \]

2.3. Te Mana o te Wai is then described as:

\[ \text{The health and well-being of our freshwater bodies is vital for the health and well-being of our land, our resources (including fisheries, flora and fauna) and our communities.} \]

\[ \text{Te Mana o te Wai is the integrated and holistic well-being of a freshwater body.} \]

\[ \text{Upholding Te Mana o te Wai acknowledges and protects the mauri of the water. This requires that in using water you must also provide for Te Hauora o te Taiaro (the health of the environment), Te Hauora o te Wai (the health of the waterbody) and Te Hauora o te Tangata (the health of the people).} \]

\[ \text{Te Mana o te Wai incorporates the values of tangata whenua and the wider community in relation to each water body.} \]

\[ \text{The engagement promoted by Te Mana o te Wai will help the community, including tangata whenua, and regional councils develop tailored responses to freshwater management that work within their region.} \]

44 This part is authored by Matthew McCallum-Clark.
By recognising Te Mana o te Wai as an integral part of the freshwater management framework it is intended that the health and well-being of freshwater bodies is at the forefront of all discussions and decisions about fresh water, including the identification of freshwater values and objectives, setting limits and the development of policies and rules. This is intended to ensure that water is available for the use and enjoyment of all New Zealanders, including tangata whenua, now and for future generations.

2.4. In more colloquial language, Te Mana o te Wai has been described as ‘the first right to wai, is to the wai itself’.

2.5. Objective AA1 and Policy AA1 then states:

To consider and recognise Te Mana o te Wai in the management of fresh water.

By every regional council making or changing regional policy statements and plans to consider and recognise Te Mana o te Wai, noting that:

a) Te Mana o te Wai recognises the connection between water and the broader environment – Te Hauora o te Taiao (the health of the environment), Te Hauora o te Wai (the health of the waterbody) and Te Hauora o te Tangata (the health of the people); and

b) values identified through engagement and discussion with the community, including tangata whenua, must inform the setting of freshwater objectives and limits.

2.6. It appears clear that the 2017 amendment anticipated a considerable change of approach with respect to the management of freshwater, through “considering and recognising” Te Mana o te Wai. We acknowledge that there has been some debate about the meaning of Te Mana o te Wai, particularly about the relevance of economic values in respect to the ‘health of the people’ and whether ‘the environment’ has the same meaning as in the RMA (therefore including a range of anthropocentric values).

2.7. The Environment Court recently released an interim decision on the proposed Southland Water and Land Plan, which assists with the interpretation and application of Te Mana o te Wai. The Court came to three “key understandings” on Te Mana o te Wai:

1. As a matter of national significance, the NPSFM requires users of water to provide for hauora (health) and in so doing, acknowledge and protect the mauri of water.

2. As a matter of national significance, the health and wellbeing of water are to be placed at the forefront of discussion and decision-making. Only then can we provide for hauora by managing natural resources in accordance with ki uta ki tai.

3. The NPSFM makes clear that providing for the health and wellbeing of waterbodies is at the forefront of all discussions and decisions about fresh water.

2.8. We acknowledge the recent clarity given to the interpretation and application of Te Mana o te Wai by the Environment Court, and consider that (a) the consideration and recognition of Te Mana o te Wai is a key decision-making test and (b) that Te Mana o te Wai cannot be viewed through an anthropocentric lens that seeks to place high value on out-of-stream use of water.

2.9. As we understand it, Te Mana o te Wai, in addition to being described in the NPSFM, can be subject to some local interpretation. We are hopeful that Ngā Rūnanga will take the opportunity to expand on what Te Mana o te Wai means for tangata whenua. To provide some context, we have considered the relevant iwi management plans, as well as some recent evidence given in the Environment Court by Ngāi Tahu.


46 Aratiatia Livestock Ltd & Ors v Southland Regional Council [2019] NZEnvC 208
2.10. Policy WM3.1 of the Mahaanui IMP and a quote from it are informative, and read as follows:

To advocate for the following order of priority for freshwater resource use, consistent with the Te Rūnanga o Ngāi Tahu Freshwater Policy Statement (1999):

1. That the mauri of fresh water resources (ground and surface) is protected and sustained in order to:
   a. Protect instream values and uses (including indigenous flora and fauna);
   b. Meet the basic health and safety needs of humans, specifically the provision of an untreated and reliable supply of drinking water to marae and other communities; and
   c. Ensure the continuation of customary in-stream values and uses.

2. That water is equitably allocated for the sustainable production of food, including stock water, and the generation of energy; and

3. That water is equitably allocated for other abstractive uses (e.g. development aspirations)

Changing the way water resources are valued must underpin and drive the changes needed in the way freshwater resources are managed and used. Water is a taonga, and the collective responsibility for protecting the mauri of this taonga is a fundamental principle of Ngāi Tahu freshwater policy. The right to use water must be premised on a responsibility to care for water.47

2.11. Overall, it would appear that the 2017 amendment to the NPSFM anticipated a considerable additional weight to be given to Te Mana o te Wai and specifically considering and recognising it in freshwater management, and this has been reinforced by the recent case-law.

2.12. At times the approach to Te Mana o te Wai has been described as a paradigm shift in the approach to appreciation of water and water bodies. “It will take a fundamental shift of mindset to think about what we can do for the river (and therefore ensure the health of our rivers is sustained), rather than what the river can do for us. This is the challenge.”48 We consider this appears to be more than just a change in approach to the management of water, but fundamentally a different way of considering its value.

2.13. We note the submissions from some parties, such as Forest & Bird49, and Ngā Rūnanga50 specifically questioning the extent to which Te Mana o te Wai has been considered and seeking greater alignment of PC7 with this concept. We acknowledge that Te Mana o te Wai is not the only criterion upon which the adequacy of provisions need to be considered, but are mindful of the significant weight applied to it in the NPSFM (in the directive nature of the national priority and Objective AA1 and Policy AA1) and the recent Southland Environment Court decision in Aratiatia Livestock Limited and others v Southland Regional Council [2019] NZEnvC 208.

2.14. At a broad level, we hold some concerns as to the extent, in the light of the recent case-law, that Te Mana o te Wai has been considered and reflected in the development of the PC7 provisions. In particular this appears through:

   a. continuation of what would appear to be very substantial allocations of water to out-of-stream uses in some catchments;

---

47 Page 77 Mahaanui IMP
48 Page 77 Mahaanui IMP
49 For example; PC7-472.105, PC7-472.159
50 For example; PC7-399.87
b. calculation of allocation blocks by adding up existing consented abstractions, rather than by assessing environmental responses;

c. delaying implementation of meaningful change to a decade or more into the future;

d. pushing responsibility for more substantial change onto future generations;

e. an emphasis on maintaining the status quo, rather than giving weight to ecological and cultural flows; and

f. not immediately implementing simple measures, such as partial restriction regimes, to protect minimum flows in rivers.

2.15. We appreciate that the development of Parts B and C of PC7 (through the collaborative CWMS process) occurred over many years, at which time the understanding of Te Mana o te Wai was still evolving. Given the more recent appreciation of the meaning of Te Mana o te Wai, we have identified opportunities to better align the provisions with this concept.

2.16. We have explicitly considered Te Mana o te Wai in many places in this Section 42A Report. In some situations, submissions seeking further relaxation of provisions have been recommended to be rejected, solely on the basis of being inconsistent with Te Mana o te Wai. For some recommendations, an option that may be more aligned with Te Mana o te Wai is also advanced, should the Hearing Panel conclude that further weight needs to be given to it.

2.17. As stated earlier, we would very much appreciate further clarification of what Te Mana o te Wai means to Ngā Rūnanga and how it should be considered and recognised in the decision-making process.
3. The use of Overseer, the Farm Portal and Good Management Practices\textsuperscript{51}

**Introduction**

3.1. The purpose of this section is to discuss submissions on OVERSEER®, the Farm Portal and GMP which are applicable to Parts A, B and C of PC7. Many of these submissions express general concerns about the nutrient management provisions of the CLWRP, rather than commenting on specific PC7 provisions.

3.2. A brief overview of the CLWRP nutrient management provisions is provided, as they form the basis for the nutrient management provisions proposed by PC7.

3.3. The CLWRP includes region-wide provisions for managing nutrient losses from farming activities to address water quality issues in the region. OVERSEER® is the default model used by the CLWRP to estimate nitrogen losses from farms. While OVERSEER® is the default, the CLWRP does provide for an equivalent model to OVERSEER® to be used to model nitrogen losses, subject to approval by the Chief Executive of Environment Canterbury\textsuperscript{52}.

3.4. Plan Change 5 to the CLWRP introduced a requirement for farming activities to operate at GMP. GMP is estimated using the Farm Portal which is a web-based tool that estimates the nutrient losses from a farming activity operating under GMP. The Farm Portal achieves this by applying a set of modelling proxies that correlate with GMP to uploaded OVERSEER® nutrient budgets. Schedule 28 of the CLWRP sets out the GMP modelled by the Farm Portal.

3.5. Where the Portal is unable to generate GMP loss rates or the number is demonstrated to be erroneous, the CLWRP provides for alternative methods to be used to calculate the GMP loss rates (through rules and definitions). Environment Canterbury refers to this alternative option as the equivalent pathway (also referred to as the alternative pathway by submitters).

3.6. As discussed in the section 32 report\textsuperscript{53}, in 2019 following PC5 being made operative, a GMP Implementation Working Group was established to consider issues relating to the Farm Portal, in particular issues with the irrigation and fertiliser proxies which form part of Schedule 28 of the CLWRP. The GMP Implementation Working Group made recommendations in relation to the proxies in Schedule 28, along with suggestions on how to best implement GMP on-farm. The Council considered the recommendations of the working group and considered that there was sufficient flexibility within the CLWRP to implement good management through the regime established through PC5.

3.7. Proposed Plan Change 7 to the CLWRP does not propose any amendments to the core provisions of the nutrient management framework outlined above. A separate nutrient management framework is proposed for commercial vegetable growing operations which restricts operations to a baseline land area instead of property-specific nitrogen limits, and, for growers requiring resource consent, requiring them to operate at GMP, prepare an FEP and demonstrate how any relevant nutrient loss reduction will be achieved. This is intended to address the current difficulties with managing these activities under the CLWRP property-specific nitrogen limits.

\textsuperscript{51} This part authored by Jacqui Todd.

\textsuperscript{52} Through the CLWRP definitions for Nitrogen baseline and Nitrogen loss calculation which allow the use of an equivalent model.

\textsuperscript{53} Section 32 Report: Section 10, Page 201.
3.8. For Parts B and C of PC7, the region-wide nutrient management provisions provide the starting point for managing nutrient losses from farming activities within the Waimakariri and OTOP sub-regions, and incorporate the GMP, OVERSEER® and Farm Portal requirements outlined above. Parts B and C of PC7 include the equivalent pathway provisions, similar to the region-wide provisions, allowing for an alternative method to the Farm Portal to be used to calculate the GMP loss rates.

Submissions

Use of OVERSEER®

3.9. Numerous submitters are opposed to the use of OVERSEER® to estimate nutrient losses, both for the proposed commercial vegetable growing provisions in Part A of PC7, and the nutrient management provisions for the OTOP and Waimakariri sub-regions in Parts B and C.

3.10. Submitters concerned about the use of OVERSEER® for commercial vegetable production do not consider that OVERSEER® is suitable for modelling horticultural systems. HortNZ\(^{54}\) states that PC7 does not acknowledge the fundamental inefficiencies and ineffectiveness of OVERSEER® and the Farm Portal as tools for calculating nitrogen budgets for Commercial Vegetable Production. Ashley Gorge Farming Society\(^{55}\) is concerned that OVERSEER® has an acknowledged variability of plus or minus 30%. It considers that this penalises good farms with good practices. RSIL\(^{56}\) states that OVERSEER® relies on extensive use of proxy crops, produces erroneous results for small blocks and is not an accurate representation for many crops.

3.11. In regard to the nutrient management provisions in Parts B and C of PC7, submitters are concerned about the accuracy and reliability of OVERSEER®. The Egg Producer Federation NZ and Poultry Industry Association NZ\(^ {57}\) is concerned about the use of OVERSEER® for the poultry industry as it was developed for the dairy industry for much larger scale farms. It notes that the poultry industry is not listed on the OVERSEER® website as one of the primary industries it supports. The submitter requests that Environment Canterbury develop an appropriate framework for nitrogen loss from the poultry industry and reference an independently audited management system used in the Southland region.

3.12. To address the concerns about OVERSEER®, submitters request that the use of OVERSEER® be removed from the CLWRP provisions and be replaced with an alternative system to estimate nutrient losses for both horticultural systems and other farming systems. Ashley Gorge Farming Company\(^ {58}\) states that there are alternative measurement systems in Europe which are more accurate. Pareora Catchment Society\(^ {59}\) requests that a new system for nutrient loss estimations based on reliable operational data should be investigated and funded nationally. Other submitters suggest that a more accurate direct measurement approach should be used to assess nutrient losses from horticultural systems\(^ {60}\).

\(^{54}\) PC7-356.66
\(^{55}\) PC7-195.3
\(^{56}\) PC7-235.42
\(^{57}\) PC7-197.1, PC7-197.24
\(^{58}\) PC7-195.3
\(^{59}\) PC7-108.13
\(^{60}\) Including; Aberdeen Farm Ltd (PC7-434.2), HortNZ (PC7-356.66), Alex McDonald Ltd (PC7-6-3), A Scott (PC7-130.3), McCains Food (PC7-187.8)
**Good Management Practice and the Farm Portal**

3.13. Numerous submitters are concerned about the use of the Farm Portal, citing current issues with the Farm Portal in calculating GMP loss rates. Most of these submissions relate to Parts B and C of PC7, which incorporate the region-wide requirement to use the Farm Portal into the OTOP and Waimakariri sub-regions. Several of these submitters\(^{61}\) state that the Farm Portal is not sufficiently robust to deal with a number of farm systems (with particular concern being expressed about the irrigation and fertiliser proxies). Pye Group\(^{62}\) considers that there is a lack of confidence in the actual numbers produced by the Farm Portal and a number of submitters are concerned that the ongoing issues with the Farm Portal mean that the starting point for reductions in the Waimakariri sub-region (Baseline GMP Loss Rate) is unclear because it keeps changing. Waimakariri NGF\(^{63}\) considers that the provisions overstate the potential for the Farm Portal to be unable to generate GMP loss rates or to generate numbers which are erroneous.

3.14. A number of submitters\(^{64}\) acknowledge the GMP Implementation Working Group and some submitters express concern that PC7 was not delayed to incorporate the recommendations of the GMP Implementation Working Group. DairyNZ\(^{65}\) supports a future plan change to implement the recommendations of the GMP Implementation Working Group.

3.15. Ngā Rūnanga\(^{66}\) seeks assurance that future amendments to the proxies do not diminish the outcomes intended by PC7.

3.16. Forest & Bird\(^{67}\) supports GMP, subject to an unambiguous and enforceable rule framework so early adopters are rewarded and laggards can be penalised. It seeks that “best environmental practice” is the goal.

3.17. WWHT\(^{68}\) requests a new definition of GMP for the commercial vegetable growing provisions.

3.18. To address concerns about the Farm Portal and GMP, a number of submitters request an alternative set of guidelines for calculating GMP, particularly in relation to the fertiliser and irrigation proxies. Pye Group\(^{69}\) requests a national based system to determine how GMP is met across the range of farming practices. Claxby Irrigation Ltd\(^{70}\) requests that the GMP numbers used in OVERSEER® modelling for the Waimakariri sub-region be clearly defined in a new schedule. A number of irrigation schemes\(^{71}\) request an alternative rule framework for commercial vegetable production to require operation at GMP until OVERSEER® can realistically model these farming operations.

3.19. Numerous submitters are generally supportive of the equivalent pathway provisions and emphasise the importance of an alternative option given the perceived issues with the Farm Portal.

---

\(^{61}\) Including; DairyNZ (PC7-357.20, PC7-357.21), WIL (PC7-349.4), Ngā Rūnanga (PC7-424.197)

\(^{62}\) PC7-352.14

\(^{63}\) PC7-425.12

\(^{64}\) Including; J L Chapman (PC7-182.6), Melbury Ltd (PC7-172.7), Federated Farmers (PC7-430.289), Ravensdown (PC7-114-110), DairyNZ (PC7-357.20 or PC7357.21)

\(^{65}\) PC7-357.20

\(^{66}\) PC7-424.197

\(^{67}\) PC7-472.209

\(^{68}\) PC7-88.66

\(^{69}\) PC7-352.14

\(^{70}\) PC7-433.32

\(^{71}\) PC7-153.3.
Many of these submitters are concerned about the lack of clarity about access to equivalent pathways and recommend amendments to the sub-regional policies and rules to make it clearer when the equivalent pathway provisions can be used. The suggested amendments include adding a definition for the term erroneous and removing the words “in limited circumstances” from the policies which refer to use of equivalent methods.

3.20. AgriMagic Ltd requests that the limitations of the Farm Portal are made more explicit and request that farmers be directed to the equivalent pathway for situations where the Farm Portal will generate a much lower GMP loss rate than they can operate to.

3.21. Fish & Game seeks amendments to the equivalent pathway provisions to provide for the immediate replacement of the loss rate in a resource consent when the Farm Portal is able to generate a Baseline GMP Loss Rate or Good Management Practice Loss Rate for that farming activity.

Analysis

3.22. The majority of the submissions opposed to the use of OVERSEER® relate to the proposed new provisions for commercial vegetable growing operations in Part A of PC7. Many of the submissions express broad concerns about the use of OVERSEER® and the Farm Portal, rather than seeking specific changes to PC7.

3.23. The commercial vegetable growing provisions are discussed in detail in Part 3 of this report. As outlined in Part 3, the proposed provisions are not explicit that OVERSEER® nutrient budgets are required.

3.24. In response to the submission by Ngā Rūnanga, PC7 does not propose any amendments to the proxies in Schedule 28.

3.25. We agree with the submissions which acknowledge the importance of the equivalent pathway provisions. We do not agree that it is appropriate to direct farmers to the equivalent pathway for certain situations, as requested by AgriMagic Ltd. We consider that the equivalent pathway is a clear option in the CLWRP. Whether it is the appropriate option will depend on a number of factors and will need to be determined on a case by case basis for each situation, in accordance with the relevant policies and rules.

3.26. In response to the request by Fish & Game that the equivalent pathway provisions require immediate replacement of the loss rate when the Farm Portal is able to generate the GMP Loss Rate, we are unclear how an immediate replacement would provide greater certainty for the consent holder and consider it is unnecessary given that the provisions already provide for consent review in this situation.

3.27. We are unclear what Forest & Bird is specifically seeking in relation to a rule framework that rewards early adopters of GMP and penalises laggards. No specific relief is sought in relation to this submission point.

---

72 Ravensdown (PC7-114-110), Federated Farmers (PC7-430.289), DairyNZ (PC7-357.20), Ballance Agri-Nutrients Ltd (PC7-441.11), Fonterra (PC7-416.10), Silver Fern Farms Ltd (PC7-468.11), Agri Magic Ltd (PC7-131.8, PC7-131.9 PC7-131.3, PC7-131.4)
73 Proposed policies 8.4.28B and 14.4.20B.
74 PC7-131.8, PC7-131.10
75 PC7-95.37, PC7-95.21
76 Proposed policy 8.4.28C.
3.28. In response to the submission from WWHT requesting a new definition of GMP, we note that GMP is defined in the CLWRP and is an important aspect of the region-wide nutrient management framework. We do not consider it appropriate to introduce a different definition of GMP into the commercial vegetable growing provisions.

3.29. In relation to the broader concerns about the use of OVERSEER® and the Farm Portal, we do not consider that it is appropriate to remove the use of OVERSEER® from PC7. OVERSEER® is the default model used by the CLWRP to estimate nitrogen losses from farms. The requirement to model nitrogen losses using OVERSEER® arises from the region-wide definitions of the CLWRP, which are not within the scope of PC7. Requiring an alternative system for determining nutrient discharges in the OTOP and Waimakariri sub-regions would be inconsistent with the overall framework of the CLWRP. In addition, it is noted that the CLWRP provides for an equivalent model to OVERSEER® to be used.

3.30. In response to the concerns about the Farm Portal and requests for an alternative set of GMP guidelines, we acknowledge issues with the Farm Portal in generating GMP loss rates. However, the CLWRP already includes an equivalent pathway rule framework that allows equivalent GMP loss rates to be calculated in circumstances where the Farm Portal is unable to generate a GMP loss rate or the number demonstrated is erroneous. PC7 anticipates the use of this equivalent pathway option. In addition, to assist in accessing the equivalent pathway option, Environment Canterbury has made available a separate tool that can be used to calculate an equivalent GMP loss rate. Consents procedures have also been implemented to ensure that applications utilising the equivalent pathway can meet the CLWRP requirements for GMP.

3.31. To address implementation issues with the nutrient management framework of the CLWRP, Environment Canterbury has committed to further work to assist in the use of OVERSEER® and the implementation of GMP requirements of the CLWRP. This work includes an OVERSEER® modelling guidance project, which involves all regional councils in New Zealand and OVERSEER Ltd, and a project to develop FEP Audit Standards, which will include consideration of GMP guidelines. These projects will consider several of the broader issues that have been raised by submitters, including on OVERSEER®, modelling issues and the need for guidance on GMP.

3.32. Given the measures that are in place to enable applicants to access the equivalent pathway, we do not consider it is necessary to define the word “erroneous”. We consider that the equivalent pathway has been made reasonably accessible to all farmers and defining erroneous could be more restrictive than the status quo and limit access to the equivalent pathway in some situations. This potentially undermines the purpose of the provisions which is to ensure that all farmers can access the equivalent pathway provisions if appropriate.

3.33. Policies 8.4.28B and 14.4.20B of Parts B and C of PC7 provide for equivalent methods to be used in “those limited circumstances” where the Farm Portal is unable to generate a GMP loss rate or the number is determined to be erroneous. These policies duplicate the region-wide policies for the equivalent pathway. We acknowledge that the words “limited circumstances” may not accurately reflect the current situation with the Farm Portal. We do not consider that the words should be removed from the policies as this would be inconsistent with the region-wide provisions and does not reflect the long-term intention for the use of the Farm Portal. In practice, the words “in limited circumstances” do not restrict access to the equivalent pathway provisions and as discussed, Environment Canterbury have implemented measures to ensure that the equivalent pathway provisions are easily accessible.
3.34. We do not recommend any changes to the proposed nutrient management provisions of PC7 in relation to OVERSEER®, GMP and the Farm Portal noting that most of these provisions follow on from the nutrient management framework of the CLWRP. OVERSEER® and the Farm Portal are core parts of the nutrient management provisions in the CLWRP and there is no proposal to change these provisions. Changing these provisions within Parts A, B and C of PC7 would be inconsistent with the region-wide sections of the CLWRP and other sub-regional sections, and, as a result of other analysis in this report, will potentially be deleted. Rather than amending the provisions at this time, Environment Canterbury is committed to a number of long-term projects to address the use of OVERSEER® and the Farm Portal to assist in the implementation of these provisions.
4. Waipuna (Springs)

Provisions and Introduction

4.1. Proposed Plan Change 7 to the CLWRP proposes a number of amendments to better recognise and protect springs (waipuna). Some amendments apply across the CLWRP such as changes to Schedules 7 and 7A, while other provisions apply more specifically in the Waimakariri and OTOP sub-regions. Submissions received across PC7 generally support this recognition and protection, but concerns have been raised regarding how the provisions are to be implemented.

4.2. The proposed amendments to Schedule 7 require FEPs to describe how springs will be managed to avoid:
   a) damage to spring beds and margins; and
   b) the direct input of nutrients, sediment and microbial pathogens.

This is achieved by including springs in Section 5E Management Area: Waterbodies of Schedule 7. Amendments to Schedule 7A require Management Plans to record the location of permanently or intermittently flowing springs.

4.3. Springs are recognised and protected in the Waimakariri and OTOP sub-regions primarily through the stock exclusion provisions. In both sub-regions it is proposed to extend the region-wide stock exclusion provisions to apply to permanently and intermittently flowing springs.

4.4. This section discusses the submissions received across PC7 relating to springs, specifically submissions raising concerns about how to define a permanently or intermittently flowing spring and on Schedules 7 and 7A.

4.5. The submissions relating to springs have been grouped into and considered according to the following topics:
   • Supporting submissions;
   • Definition of a permanently flowing or intermittently spring;
   • Schedule 7; and
   • Schedule 7A.

Supporting submissions

4.6. More than 35 submissions were received supporting the recognition and protection of springs and seek that these provisions are retained. CACB\textsuperscript{77}, R Devlin\textsuperscript{78}, Styx Living Laboratory Trust\textsuperscript{79} and Ngā Rūnanga\textsuperscript{80} also support the provisions that recognise waipuna values.

\textsuperscript{77}PC7-138.4  
\textsuperscript{78}PC7-56.4  
\textsuperscript{79}PC7-205.8  
\textsuperscript{80}PC7-424.200
4.7. DairyNZ\textsuperscript{81} and I & H McMillan\textsuperscript{82} specifically support the inclusion of waipuna/springs in Schedule 7 and seek this is retained.

4.8. Several other submitters support the inclusion of springs in Schedule 7A and seek its retention.\textsuperscript{83} We note that Schedule 7A does not include amendments to the practices listed to protect springs, the only change is to require the farm map to identify the location of springs.

**Definition of a permanently or intermittently flowing spring**

4.9. Ngā Rūnanga\textsuperscript{84} are supportive of provisions to protect waipuna. However, they seek several amendments including a new definition of waipuna/spring. Ngā Rūnanga states that a definition is required to ensure the term is used consistently.

4.10. Many other submitters\textsuperscript{85} have raised concerns about what intermittently flowing springs would include. For example, Knocklyn Holdings Ltd states that seepages in the Woodbury area can be widespread and may occur in only one out of five years and run for only short time periods. Knocklyn Holdings Ltd states that these transient or ephemeral springs should not be required to comply with the livestock exclusion provisions.

4.11. Several submitters seek changes so that the exclusion only applies to intermittently flowing springs when water is flowing in the watercourse and state further definition of intermittent is required.\textsuperscript{86}

4.12. We note that springs can vary significantly from location, flow rates and their morphology. Additionally, springs are highly valued for numerous reasons, including for their hydrology contributing to surface waterbodies, as habitat and for cultural purposes. The term spring or waipuna is not currently defined in the CLWRP, the CRPS or higher order national documents. Dictionary definitions vary but typically refer to a source of water from the ground or where groundwater flows to the earth’s surface. Environment Canterbury maintains a database of springs on the GIS mapping system. Not all areas have good coverage and not all springs or seepages are mapped. The springs identified are based on a classification system defining springs and seepages recognising there is a continuum between the two\textsuperscript{87}. Both springs and seepages are sites of groundwater discharges. However, a spring has discharge large enough to flow into a small rivulet. A seepage oozes from the ground over an area without distinct rivulets.

4.13. We understand that the primary purpose of extending the requirements in Schedules 7 and 7A to recognise and protect springs and to extend the region-wide stock exclusion provisions to apply to springs in the Waimakariri and OTOP sub-regions is to provide for the cultural values associated with springs/waipuna.

\textsuperscript{81} PC7-357.43
\textsuperscript{82} PC7-568.38
\textsuperscript{83} Including; Ravensdown (PC7-114.26), North Canterbury Fish and Game (PC7-95.51), M Currie (PC7-463.18), I & H McMillan (PC7-568.39)
\textsuperscript{84} PC7-424.125
\textsuperscript{85} Including; South Hilton Ltd (PC7-146.3), Knocklyn Holdings Ltd (PC7-173.2), Glenfield Farm (PC7-236.44), Orari Gorge Station (PC7-259.1, 259.2, 259.3), Woodbury Deer Industry Environment Group (PC7-271.1, 271.2, 271.3)
\textsuperscript{86} Including; Woodend-Sefton Community Board (PC7-107.1, 107.2), W J Winter & Sons (PC7-177.6), United Seadown (PC7-180.2), W J & L E Bailey Farming (PC7-190.2)
\textsuperscript{87} Groundwater springs: a literature review of existing classification schemes and studies, and proposal for a Canterbury spring classification system’ ECAN Report U98/7, P. Earl, 1998
4.14. The Mahaanui IMP describes that waipuna are wāhi taonga and should be protected in their own right and are an integral part of maintaining the cultural health of catchments. It is not clear from the Mahaanui IMP whether an intermittent seep such as that described by Knocklyn Holdings is considered wāhi taonga alongside permanently flowing springs such as those located in the OTOP Mātaitai Protection Zone. The cultural health assessment report prepared for the Waimakariri sub-region indicates that Ngāi Tūāhuriri Rūnanga seek recognition and protection of springs that have some form of connectiveness to surface water bodies. In relation to springs, the assessment and recommendations are focused on spring heads and refer to the spring-fed characteristics of many waterbodies in the catchment. From an ecological perspective, springs and seeps may be worthy of protection as even when they are damp and muddy, pugging damage caused by stock grazing can result in significant sediment loss when they do flow. Further, some native fish species can utilise a ‘damp but temporarily non-flowing’ spring and stream reaches, with significant adverse effects from unchecked heavy hoofed grazing.

4.15. We consider a definition of spring/waipuna would be beneficial for plan users to implement the PC7 provisions. However, currently it is challenging to provide a recommendation on this definition. Inserting a description based on dictionary definitions or scientific meaning is possible but risks inadvertently including or excluding features that should or should not be managed to achieve the intended purpose of the provisions. Based on the cultural health assessments, it appears that springs contributing to surface water bodies are the priority for protection. Seepages that may not directly flow into a surface water body are not specifically identified and we are unconvincing that this type of spring should be warranted the same level of protection. At this time, we consider that further information from submitters would be useful to inform a recommendation on a new definition of spring/waipuna.

Schedule 7 and Schedule 7A (Springs)

4.16. Ellesmere Sustainable Agriculture Inc seeks that the proposed amendments to Schedules 7 and 7A are deleted. Ellesmere Sustainable Agriculture Inc states that it is consulting with MKT and Te Taumutu Rūnanga in relation to the management of springs in the Selwyn District Plan and that its preference is that springs are addressed via FEPs not included in District Plans.

4.17. We are unclear why Ellesmere Sustainable Agriculture Inc seeks the deletion of the PC7 amendments as the provisions are aligned with its intended outcome. To provide for Ngā Tahu values we recommend Ellesmere Sustainable Agriculture Inc’s submission is rejected. Deleting the reference to springs in Schedules 7 and 7A risks springs being damaged through stock access and the discharge of contaminants.

4.18. Ngā Rūnanga supports the inclusion of springs in the targets and objectives for waterbodies of Schedule 7 but seeks an amendment to refer to springs in the 5E Objective to improve clarity.

4.19. We recommend accepting Ngā Rūnanga’s submission as it removes any uncertainty regarding the details required in the FEP to protect springs.

---

89 PC7-207.39, PC7-207.40
90 PC7-424.41
4.20. Several submitters support the inclusion of springs in Schedule 7A. Schedule 7A only requires mapping of the springs. In order to achieve the protection sought by submitters, specifically Fish & Game and Ngā Rūnanga, we recommend including springs in the practice requiring vegetated buffer strips of five metres, as mapping alone assumes that some positive action will follow, which may or may not be the case.

**Recommendations**

4.21. It is recommended that:
   
   a. Objective 5E of Schedule 7 is amended to include reference to springs, as shown in the tracked changes version of PC7 in Appendix E.

   b. Springs are added to the buffer strip requirements of Schedule 7A.
5. Schedule 7 and Schedule 7A (General)

Introduction

5.1. This chapter of the Section 42A Report discusses submissions made on Schedules 7 and 7A of the CLWRP.

5.2. Schedule 7 of the CLWRP sets out the default region-wide content to be contained within FEPs. Additional requirements applying to FEPs within particular sub-regions are also specified, as well as the requirements for the FEP audit process.

5.3. Proposed Plan Change 7 to the CLWRP proposes the following amendments to Schedules 7 and 7A:
   - Inclusion of springs within the Management Area: Waterbodies
   - Inclusion of commercial vegetable production operations and consequential references to land area
   - Additional requirements for FEPs within Waimakariri (Part B, Section 10)
   - Additional requirements for FEPs within OTOP (Part B, Section 11)

5.4. A number of submissions were received on Schedules 7 and 7A. Given the nature of the amendments to these schedules, many of the submissions relate to topics that are addressed within other sections of this report i.e. Part 2, Section 6 (waipuna/springs) and Part 3, Section 8 (commercial vegetables). Submissions on the amendments to include additional requirements for FEPs within the OTOP and Waimakariri sub-regions are also addressed in Parts 4 and 5 of this report respectively.

5.5. This section addresses other submissions on Schedules 7 and 7A that are not covered in topic specific sections of this report.

Submissions

5.6. Thirty-eight submissions were received on Schedule 7, and two submissions were received on Schedule 7A.

5.7. I & H McMillan\(^91\) support the amendments to Schedules 7 and 7A, and seek their retention.

5.8. ALIL\(^92\) seeks the retention of amendments to Schedule 7 that include reference to a property or “land”. We recommend retaining these additions to Schedule 7 as notified as they assist with the implementation of the commercial vegetable production provisions.

5.9. H Iles\(^93\) requests further clarification on FEPs, including details of the number of farms that hold an FEP and whether or not they are monitored. The submitter does not reference Schedule 7, or any other specific provisions within PC7. We consider that this submission generally relates to matters that are either already set out within the CLWRP, such as the FEP auditing process, or are not appropriate to include within a regional plan (i.e. specifying the

\(^{91}\) PC7-568.38, PC7-568.39
\(^{92}\) PC7-390.7
\(^{93}\) PC7-310.23, PC7-310.24
number of properties that hold a resource consent or FEP). We recommend rejecting the requested relief on this basis.

5.10. Ballance\textsuperscript{94} requests amendments to ensure that FEPs are developed by a CNMA qualified under the Nutrient Manager Adviser Certification Programme Ltd, rather than a “suitably qualified person” as currently stated within Schedule 7. It considers that this relief is required to provide consistency across the region and country. The submitter also seeks that the timelines for developing the required FEPs considers the availability of existing resources as well as future training and resourcing needs to build and maintain capacity.

5.11. Part B, clause (6) of Schedule 7 states that nutrient budgets, prepared by a suitably qualified person, using OVERSEER® or an equivalent model approved by the Chief Executive of Environment Canterbury, are to be included as part of an FEP. Schedule 7 does not specify that the FEP itself must be prepared by a suitably qualified person. It is unclear from the submission whether Ballance has noted this distinction.

5.12. We note that the required experience for preparing FEPs is directed through the CLWRP rule framework. Following PC5, all land use consents for a farming activity applied for under the region-wide rules require a nutrient budget. To incentivise the preparation of high quality nutrient budgets, a controlled activity pathway was introduced for applications where the nutrient budget and FEP were prepared or reviewed by an Accredited Farm Consultant. An Accredited Farm Consultant is defined in Section 2 of the CLWRP as follows:

\textit{means a person who holds a Certificate of Completion in Advanced Sustainable Nutrient Management in New Zealand Agriculture from Massey University and who:}

\begin{enumerate}
\item has been certified by the New Zealand Institute for Primary Industry Management as meeting the criteria for a 'Certified Dairy Farm System Consultant'; or
\item is a Certified Nutrient Management Adviser under the Nutrient Manager Adviser Certification Programme Ltd; or
\item holds any other qualification that has been approved by the Chief Executive of Environment Canterbury as being an equivalent standard with respect to the knowledge and competencies required.
\end{enumerate}

5.13. However, under PC7, not all land use consents for farming activities within OTOP and Waimakariri require a nutrient budget. Within Waimakariri, entry to controlled activity Rule 8.5.25 is available in limited circumstances. Activities that comply with all of the conditions (including irrigation and winter grazing limits) of Rule 8.5.24 but are located within the Ashley Estuary (Te Aka Aka) Coastal Protection Zone can be classified as a controlled activity under Rule 8.5.25. Given that these activities comply with the irrigation and winter grazing limits, the nitrogen loss from these properties is likely to be similar to permitted land uses. The intent of the provisions is to instead manage the risks to water quality, and effects on cultural outcomes, given the proximity of the farms to waterways. These effects are best addressed through actions in the FEP, which is why the requirement to prepare an FEP is retained for this rule. Similar reasoning applies within OTOP for Rule 14.5.18 except for the sensitive areas the rule is seeking to protect. Therefore, the requirement to have a nutrient budget prepared or reviewed by an AFC was not adopted for the controlled activity land use rules for PC7.

\textsuperscript{94} PC7-441.16
5.14. The proposed rule framework within PC7 still requires FEPs to be prepared in accordance with Part A of Schedule 7, otherwise the activity becomes non-complying. Matters of discretion and control (where relevant) are also set out to allow Environment Canterbury to consider the content and efficacy of FEPs. Therefore, we consider that the content and quality of FEPs will be addressed during the consenting process. On this basis, we recommend rejecting the request for Schedule 7 to be amended to require that FEPs must be prepared by a CNMA.

5.15. We acknowledge Ballance’s concerns with the availability of resources to develop FEPs, as it is important to ensure that there is the necessary experience and capacity to assist with the implementation of PC7. Environment Canterbury has approved 11 FEP templates as being compliant with Schedule 7. Five FEP templates for irrigation schemes have also been approved. Industry contacts are listed on the Environment Canterbury website to provide support for those seeking assistance with writing FEPs, with some of these industry bodies holding FEP workshops. Given the above, we consider that there are sufficient resources available. Further delaying the implementation of PC7 would be inconsistent with the direction within the NPSFM to maintain or improve water quality. On this basis, we recommend this submission point be rejected.

5.16. WWHT\(^95\) requests a number of amendments to Schedule 7. These include:

- Adding farm drainage plans to plot overland flow paths for rainfall runoff and management actions to prevent and or treat contaminated rainfall runoff from discharging to waterways;
- Adding new management areas for “Sediments” and “Land Drainage”;
- Requiring wetlands identified in the drainage plan and/or Environment Canterbury wetland mapping to be fenced off or retired;
- Amending the additional FEP requirements for Selwyn Te Waihora; and
- Multiple other additions to the wording of targets, management areas and other default content within Part B of Schedule 7.

5.17. We consider that the requested amendments are unrelated to the amendments to Schedule 7 made by PC7. Therefore, we consider these requests to be outside of scope of PC7. For example, requests to amend the additional requirements for FEPs within the Selwyn Te Waihora sub-region are clearly out of scope, given that the nutrient management provisions within this sub-region are not subject to amendment under PC7. Other changes to matters such as drainage and wetlands are not otherwise addressed by PC7. We recommend rejecting the relief sought by WWHT.

5.18. DOC\(^96\) requests amendments to Schedule 7 to require a staged reduction of water quality contaminants where sensitive lakes are not achieving their TLI outcomes and to ensure that the new cultural outcomes for mahinga kai are achieved, as a consequential change resulting from its proposed amendments to Table 1b. DOC requests that all FEPs for sensitive lake catchments are reviewed, taking into account the new cultural outcomes, proposed changes to TLI outcomes for small/medium high-country lakes and recent monitoring data on the state and trend of high-country lakes.

5.19. We consider that DOC’s request for a review of all existing FEPs, and further reductions, within sensitive lake catchments appears to be driven by concerns that particular lakes are not currently meeting water quality outcomes. However, we note that there is a significant lag time between the actions undertaken on the ground and a corresponding improvement in

\(^{95}\) PC7-88.5, PC7-88.72, PC7-88.74 – 93
\(^{96}\) PC7-160.131, PC7-160.35
water quality. As such, it is difficult to assess the level of immediate impact that the implementation of FEPs within these catchments is having on water quality. FEPs are routinely reviewed as a part of the FEP audit process, in addition to the Council’s ability to review the conditions of individual land use consents to deal with any adverse effect on the environment. However, we consider that the existing objectives and targets within Schedule 7 are appropriate for farming activities within these catchments. Given the above, we recommend rejecting this submission from DOC.

5.20. Forest & Bird\textsuperscript{97} considers that the environmental outcomes from the implementation of FEPs could be improved with the inclusion of the following attributes within Schedule 7:

- Contour based drainage plans
- Mapping of mahinga kai sites, wāhi tapu and wāhi taonga
- Mapping of wetlands
- Any areas of indigenous biodiversity including flora, fauna and ecological communities that are not listed as significant but likely meet the CRPS significance criteria
- Whether the farm is located within an outstanding landscape and or has outstanding natural features including but not limited to ecological, archaeological, geological features
- Measurable objectives that can be enforced under the consent conditions

5.21. We note that several of the submitter’s requests are already provided for within Schedule 7. For example, Part B, clauses (2)(c) and (f) of Schedule 7 require the location of wetlands and significant indigenous biodiversity to be mapped within the FEP respectively. Mahinga kai values are protected through an existing audited region-wide target and via additional requirements for other sub-regions, including within OTOP. In terms of the inclusion of contour-based drainage plans and outstanding landscapes, we consider that these matters are largely outside of the scope of the amendments to Schedule 7 within PC7. Therefore, we recommend rejecting the relief sought from Forest & Bird.

Recommendations

5.22. We do not recommend any amendments to Schedule 7 or Schedule 7A in response to the submissions discussed above.

\textsuperscript{97} PC7-472.210 - 215
6. Drafting Style

Introduction

6.1. Proposed Plan Change 7 to the CLWRP, particularly the OTOP and Waimakariri sections, has a slightly different drafting style to much of the remainder of the CLWRP. Casual observation identifies that there are a significant number of additional policies, rules, tables and definitions, leading to higher levels of complexity than other sub-regional sections.

6.2. A number of submitters have highlighted general issues with respect to complexity, readability and repetition. For example:

- HortNZ\(^9\) states that there is a lack of readability in PC7 and considers that the proposed changes are not presented in a form that could be properly understood by the general public. The submitter considers PC7 would not meet the Government style guide or readability tests, and notes that the document required an “exceptional reading and comprehension ability” to work through.
- Waimate DC\(^9\) and Pareora Catchment Society Inc.\(^10\) also raise concerns with “the lack of overall clarity and accurate definitions” in PC7. L Sandford\(^1\) considers that PC7 is “hard to understand and poorly put together” and requests that the plan is amended to simplify provisions. F Hill\(^2\) states that PC7 is generally “overly complex”.

6.3. While the increased level of detail in PC7 made it comparatively easy through the drafting process to identify where the ZIPA recommendations were implemented, we are concerned that the drafting style is partly inconsistent with other sub-regional sections of the CLWRP, and may be unnecessarily complex. Appendix C contains a table, listing each policy ‘topic’ in Parts B and C of PC7, the relevant policies in PC7 and the relevant policy in the region-wide provisions. The issues described below can easily be seen.

6.4. We consider that, at a general level, there are four categories of provisions that could benefit from simplification, addressed below. These are:

   a. Potentially redundant provisions;
   b. Policies that restate rules;
   c. Condensing provisions (including notes below rules); and
   d. Repetition of regionwide provisions.

Potentially redundant provisions

6.5. A small number of policies appear to simply restate the process that has been followed in the preparation of PC7, or restate obvious requirements of higher-level policy documents. For example Policy 14.4.1, which states:

Management of freshwater in the Orari-Temuka-Opihi-Pareora sub-region is achieved through the establishment of six Freshwater Management Units, and improvements in freshwater

\(^9\) Page 2 of HortNZ submission.
\(^9\) PC7-279.2
\(^10\) PC7-108.14
\(^1\) PC7-565.1
\(^2\) PC7-400.5
attained through the setting of, and managing to, water quality and quantity limits and targets for each area.

6.6. In our opinion this Policy is potentially redundant, as it simply states what has been included in PC7 and required by the NPSFM. In this situation, and for some other policies of this nature, there are no submissions seeking that it be deleted. If the Hearing Panel was of a view that this Policy is redundant, scope for removal could be derived from one of the above submission points suggesting simplification and the need for readability.

Policies that restate rules

6.7. In some situations, Policies in PC7 essentially set the same criteria as the relevant rule. For example, Policy 14.4.13 in relation to the transfer of water permits is highly aligned with the relevant rule (Rule 14.5.12) and essentially restates the same criteria. Most submissions to the policy and rule are identical.

6.8. In our opinion this does not add any value, nor provide guidance to decision-makers with respect to resource consents sought under the relevant rule. In this situation we would generally recommend deletion of the policy and inclusion only of a higher-level statement of what the policy is trying to achieve.

Condensing provisions (including notes below rules)

6.9. In a number of situations, the policies in PC7 relate to the same topic, but are distributed amongst a number of disparate policies, or broken into single sentence, but related, policies. For example, in the Waimakariri sub-region, three separate policies restate the proposed requirements for the exclusion of stock from waterbodies. In this situation, we suggest that a more cohesive, single policy position on the activity would be more helpful for implementation of the CLWRP, particularly for administering resource consents. Again, while there typically are no submissions seeking that kind of change, if the Hearing Panel wish to consolidate such policies, a general readability submission could be relied on, and given that the overall position is not changing, we are of a view that this is a suitable change to make.

Repetition of regionwide provisions

6.10. In a limited number of circumstances there is repetition of identical provisions from the regionwide policies and rules. Further, there are identical or near identical definitions included in the sub-regional sections of PC7. For example:

   a. Rule 14.5.20 in relation to farming enterprises is very similar to the region-wide rule.
   b. Policies 14.4.20A and 20B, and Rules 14.5.16-16B are identical to region-wide policies and rules.

6.11. We are of the view that this is generally inconsistent with the drafting style of the CLWRP as a whole, and, in the more detailed analysis further in this report, have recommended that these repetitions be deleted.
7. **Submissions on the whole of PC7**

7.1. Five hundred and sixty submissions were received on PC7. This section of the report addresses those submissions that are considered to be applicable to the whole of PC7. This section does not respond to individual submission points, rather provides a snapshot of, at responds to, some of the more general submission points made on the whole of PC7 and entirety of Parts A, B and C.

7.2. Several submissions were received in support of the whole of PC7 or the intent and direction of PC7. Other submissions in support of PC7 included:

- Support for provisions relating to cultural flow allocations;
- Support for overall water quality objectives where they are not at the expense of the community’s mental health;
- Support for mahinga kai provisions in PC7, and
- Support for farmers implementing GMP.

7.3. A large number of submissions were received opposing the entirety of PC7, some of these submissions sought the deletion of PC7.

7.4. Some submissions sought general amendments to the whole of PC7 to take into account a range of matters. Such matters include:

- Amending timeframes;
- Amending outcomes, limits and allocations;
- Amending terminology to ensure it is defined and consistent;
- Amend PC7 to require additional protection for wetlands;
- Amend PC7 to take into account other natural events (such as climate change);
- Require PC7 to provide a diversified approach to other farming activities;
- Amend PC7 to not take into account the CWMS;
- Require PC7 to only ‘go ahead’ on a polluter pays basis;
- Amend PC7 to take into account existing investment;
- Amend PC7 to go further in addressing water quality and indigenous biodiversity;

---

103 PC7-54.1, PC7-142.1, PC7-334.1, PC7-205.1, PC7-217.1, PC7-98.18
104 PC7-138.1, PC7.214.1, PC7-208.1, PC7-232.3, PC7-360.1, PC7-114.111, PC7-263.3, PC7-106.1, PC7-214.155, PC7-109.1
105 PC7-54.10
106 PC7-477.2
107 PC7-91.3, PC7-205.15
108 PC7-472.209, PC7-114.112
109 For example, PC7-567.1, PC7-245.2
110 For example, PC7-245.3, PC7-305.1, PC7-400.10
111 For example, PC7-310.1, PC7-399.85
112 For example, PC7-88.19, PC7-543.2
113 For example, PC7-88.60
114 For example, PC7-88.1
115 For example, PC7-337.147
116 For example, PC7-5.1
117 For example, PC7-400.9
118 For example, PC7-400.10
119 For example, PC7-232.6
120 For example, PC7-171.16
• Amend PC7 to take a precautionary approach. 121

Submissions on entirety of Part A of PC7

7.5. One submission was received in support of the entirety of Part A of PC7 122. Other submissions supported specific aspects of Part A of PC7, including:

- The intent to manage nutrient losses from vegetable growing activities differently to other activities; 123
- The requirement for commercial vegetable growers to operate at good management practice; 124
- Aligning the CLWRP with the NPSFM; 125
- Amendments to Section 13 to implement the recommendations of the HDWP; 126 and
- General support for MAR provisions. 127

Submissions on entirety of Part B of PC7

7.6. Three submissions were received in support of the entirety of Part B of PC7 128. Other submissions in support of specific aspects of Part B of PC7 include:

- General support for the principals behind the introduction of Section 14; 129
- General support for the extending of groundwater allocation zone boundaries to include the entire sub-region; 130
- Support for provisions that seek to protect and provide for community water supplies; 131 and
- Support for the direction of Part B in its entirety and seeking no changes be made to weaken the effectiveness of the provisions proposed. 132

7.7. Two submissions were received in opposition to the entirety of Part B of PC7, seeking its deletion. 133 One submission 134 sought Part B of PC7 be amended to retain the status quo. Other submissions in general opposition, but with specific reasoning for this position, include:

- Opposition to the High Runoff Risk Phosphorus Zone; 135 and
- Opposition to the consent process and auditing required by Part B of PC7. 136

121 For example, PC7-171.18
122 PC7-407.1, PC7-407.2
123 For example, PC7-332.1, PC7-566.3, PC7-109.5
124 For example, PC7-6.4, PC7-117.18, PC7-327.4, PC7-213.4
125 PC7-205.11
126 PC7-423.94
127 For example, PC7-56.5, PC7-473.15, PC7-109.4
128 PC7-174.1, PC7-407.3, PC7-279.1
129 PC7-457.1
130 PC7-109.11
131 PC7-457.3
132 PC7-424.191
133 PC7-251.1, PC7-443.1
134 PC7-341.12
135 PC7-72.10
136 PC7-242.1
7.8. A large number of submissions were made seeking more general amendments to Part B of PC7. Such relief includes:

- Amend Part B of PC7 to improve water quality and swimmable rivers;\(^{137}\)
- Amend Part B of PC7 to provide for catchment wide solutions including on farm reductions in addition to other tools to assist in the improvement of water quality;\(^{138}\)
- Amend Part B of PC7 to consider the learnings and importance of the OEFRAG;\(^{139}\)
- Amend nutrient management provisions in Part B of PC7 to be more concise;\(^{140}\)
- Amend Part B of PC7 to place greater value on the Opuha Dam;\(^{141}\) and
- Amend Part B of PC7 to set outcomes rather than restriction-based goals.\(^{142}\)

Submissions on entirety of Part C of PC7

7.9. Two submissions\(^{143}\) were received in support of the entirety of Part C of PC7. Other submissions in support of specific aspects of Part C of PC7 include:

- Support for a plan change in 10 years’ time drawing on good information;\(^{144}\)
- Supports progress reports on implementation and effectiveness of PC7 every five years;\(^{145}\)
- Supports consent duration and review in Waimakariri;\(^{146}\)
- The inclusion of the Waimakariri sub-region within the jurisdiction of the CLWRP;\(^{147}\)
- General support of the proposal to implement improved controls on [sic] the loss of nutrients to groundwater and surface water;\(^{148}\) and
- Retain provisions relating to catchment restoration activities in Waimakariri.\(^{149}\)

7.10. Five submissions\(^{150}\) were received in opposition to the entirety of Part C of PC7, seeking its deletion. Four submissions\(^{151}\) were received in general opposition to Part C of PC7, with no specific decision requested.

7.11. Other submissions in general opposition, but with specific reasoning for this position, include:

- General opposition to the wording of policies, rules and other methods or provisions within Part C of PC7;\(^{152}\) and
- Opposition to Part C of PC7 on the basis of there being a lack of alignment between costs and benefits.\(^{153}\)

---

\(^{137}\) For example, PC7-563.1
\(^{138}\) For example, PC7-86.4
\(^{139}\) PC7-315.2
\(^{140}\) For example, PC7-197.14
\(^{141}\) For example, PC7-403.1
\(^{142}\) For example, PC7-495.1
\(^{143}\) PC7-387.1, PC7-566.4
\(^{144}\) PC7-473.17
\(^{145}\) PC7-205.18
\(^{146}\) PC7-205.17
\(^{147}\) PC7-337.145
\(^{148}\) PC7-387.2
\(^{149}\) PC7-56.19
\(^{150}\) PC7-39.1, PC7-29.1, PC7-400.5, PC7-532.1, PC7-244.2
\(^{151}\) PC7-499.1, PC7-329.3, PC7-231.7, PC7-266.1
\(^{152}\) PC7-387.3
\(^{153}\) PC7-525.5
7.12. A large number of submissions were received seeking more general amendments to Part C of PC7. Such relief includes:

- Amend the timeframes to implement Part C of PC7 so that the provisions either take effect sooner or allow for a more workable and adaptive implementation approach;\(^{154}\)
- Amend Part C of PC7 to ensure that the environment is given priority over economic gain and that freshwater values are appropriately protected;\(^{156}\)
- Amend Part C of PC7 to require more severe restrictions on farming practices and intensification;\(^{157}\)
- Amend Part C of PC7 to take into account the level of investment that is required to achieve the proposed changes on a property to property basis;\(^{158}\)
- Amend Part C of PC7 to take a more collective and fair approach to the wider community and/or consider other impacts on water quality and quantity;\(^{159}\) and
- Amend Part C of PC7 to require that all farmers have an audited FEP.\(^{160}\)

Submissions supporting or adopting submissions made by other submitters

7.13. A number of submitters in their original submissions supported the submissions of others. These submissions were made in relation to specific parts of PC7 and to PC7 as a whole. Such submitters included:

- WIL\(^{161}\)
- Claxby Irrigation Ltd\(^{162}\)
- V Buck\(^{163}\)
- D Hartwell\(^{164}\)
- OWL\(^{165}\)
- FAWp\(^{166}\)
- AMWG\(^{167}\)
- OWUG\(^{168}\)
- Temuka Catchment Working Party\(^{169}\)
- Potatoes NZ\(^{170}\)
- HortNZ\(^{171}\)

\(^{154}\) For example, PC7-269.3, PC7-138.7
\(^{155}\) For example, PC7-342.2, PC7-473.4, PC7-473.8, PC7-433.29
\(^{156}\) For example, PC7-338.7, PC7-117.4, PC7-91.1, PC7-566.9
\(^{157}\) For example, PC7-475.1, PC7-227.3, PC7-561.1, PC7-338.4
\(^{158}\) For example, PC7-144.1
\(^{159}\) For example, PC7-547.2, PC7-201.5, PC7-229.1, PC7-333.3
\(^{160}\) For example, PC7-473.10
\(^{161}\) For example, PC7-56.19, PC7-329.1
\(^{162}\) For example, PC7-226.1, PC7-473.1
\(^{163}\) For example, PC7-519.4
\(^{164}\) For example, PC7-447.1
\(^{165}\) For example, PC7-286.1, PC7-456.1, PC7-315.1
\(^{166}\) For example, PC7-221.1, PC7-237.1, PC7-238.1
\(^{167}\) For example, PC7-487.32, PC7-439.10
\(^{168}\) For example, PC7-278.61
\(^{169}\) For example, PC7-278.62
\(^{170}\) For example, PC7-185.11
\(^{171}\) For example, PC7-185.10
7.14. A significant number of submissions sought the adoption of other submitters submission points. Where submissions have sought this, the submission points of the primary submitter have been duplicated. Submitters whose submission points have had a large number of ‘adopters’ include:
   a. OWL177
   b. AMWG178

7.15. Some submissions also sought subsequent changes that give effect to the relief sought be adopted. Many of these submitters did not provide the exact details of relief sought, rather such submissions generally sought all consequential amendments to give effect to the relief or decision sought.\textsuperscript{179} Other similar submissions included:
   a. Make all consequential amendments required to address the concerns raised and ensure a coherent planning document;\textsuperscript{180}
   b. Where a specific provisions is not addressed in their submission the submitter seeks it is not amended in a way that diminishes its intent where the amendment would diminish Te Mana o te Wai and Te Mana o te Whenua;\textsuperscript{181}
   c. Amend PC7 to make alternative amendments to the provisions in PC7 to address the substance of the concerns raised;\textsuperscript{182} and
   d. Delete PC7 and re-write to consider matters raised in submissions.\textsuperscript{183}

7.16. A number of the issues raised in the general submissions discussed above are analysed in greater detail in the relevant sections of this Section 42A Report. The analysis below provides a high level analysis of some of the general submission points made on PC7.

7.17. A significant number of submissions sought general amendments to PC7 regarding water quality and quantity. Many of these submissions sought greater or lesser protection of water quality, while many sought general amendments to freshwater outcomes, limits and targets. A number of submissions sought timeframes for PC7 be amended to provide a shorter or longer duration between PC7 becoming operative and actions required by PC7 occurring. Submissions also sought PC7 takes into account existing investment, such as the Opua Dam, while other submissions sought PC7 prioritises environment over economic gain. While a number of these matters are analysed in greater detail in the relevant sections of this Section 42A Report, we wish to highlight the NPSFM as the main driver for PC7 and the obligations on

\begin{flushleft}
\textsuperscript{172} For example, PC7-91.10
\textsuperscript{173} For example, PC7-277.2
\textsuperscript{174} For example, PC7-296.1
\textsuperscript{175} For example, PC7-408.2
\textsuperscript{176} For example, PC7-177.8
\textsuperscript{177} For example, PC7-385.6, PC7-351.32, PC7-412.13
\textsuperscript{178} For example, PC7-440.8
\textsuperscript{179} For example, PC7-214.153, PC7-214.154, PC7-424.202
\textsuperscript{180} For example, PC7-412.27, PC7-412.28, PC7-385.22, PC7-145.11
\textsuperscript{181} PC7-424.201
\textsuperscript{182} For example, PC7-145.10
\textsuperscript{183} For example, PC7-513.1
\end{flushleft}
Council as a result of this statutory instrument. This is discussed in greater detail in the Te Mana o te Wai section of this section 42A Report.

7.18. With regard to submissions that seek additional protection for wetlands in PC7 or that other tools are considered to assist in the improvement of water quality, we note that PC7 is one component of a wider package to achieve the objectives of the CLWRP and NPSFM. There are a range of non-statutory actions set out in each ZIPA, the implementation of which is intended to support the attainment of freshwater outcomes. In relation to wetlands we note, a National Policy Statement for Indigenous Biodiversity is anticipated to be released later this year and we consider it likely that this will trigger a further review of the protection of wetlands.

7.19. Some submissions sought PC7 be extended to take into account other natural events such as climate change. We note that climate change has been accounted for in the science supporting PC7.

7.20. We have addressed concerns relating to the use of OVERSEER® in the Use of Overseer, the Farm Portal and Good Management Practices section above. This section provides an analysis pertaining to submissions that seek a diversified approach to farming activities in PC7.

7.21. A submission sought PC7 be amended to not give effect to the CWMS. This is discussed in greater detail in the Legal and Statutory Section of this section 42A Report.

7.22. A number of submissions seek general amendments to PC7 due to what the submitters consider to be lack of alignment between costs and benefits. We note that a section 32 Evaluation Report has been prepared evaluating the efficiency and effectiveness of the proposed provisions of PC7. Accordingly, we consider the costs and benefits of the proposed provisions have been considered.

7.23. In terms of submissions seeking the use of consistent terminology and provisions be amended to be more concise, we have discussed this in greater detail in the Drafting Style section of this report.
8. Submissions not on PC7

8.1. This section of the report lists those submissions that are considered to be clearly outside the scope of PC7. There are generally two categories of these submissions. The first category involves a small number of submission points on topics that are not managed by regional plans generally. The second category are submissions that are on regional plan provisions, but which are considered to address matters outside the scope of PC7, as the subject matter of the submission point has not been changed by PC7. As the submission points are not considered to be “on” PC7, they have not been assessed and recommendations are not made.

8.2. Submission requests that are on matters that sit outside of regional plans more generally, include:

- Consider the impacts on water quality from other sources such as faecal matter from birds, 1080, and pharmaceutical and illicit drugs.
- Delay PC7 until a newly elected fully democratic ECAn Board is elected.\(^{184}\)
- Require a moratorium on the appointment of commissioners and any plan changes until the establishment of a fully elected Council or the “New Freshwater Policy Statement” is gazetted, whichever comes first.\(^{185}\)
- Require that PC7 is placed on hold until after the elections to give the incoming Councillors time to familiarise themselves with the Plan and provide input.\(^{186}\)
- Require a total ban on whitebait fishing for a 10-year trial period.\(^{187}\)
- Require the OTOP ZC to implement its ZIPA and PC7 sooner than five years beyond 2022.\(^{188}\)
- Submissions seeking amendments to ZIPAs.\(^{189}\)
- Oppose ratepayers’ money being used on MAR schemes.\(^{190}\)
- Appoint a suitably qualified public health expert to assess the potential health risks associated with a range of nitrate contaminants.\(^{191}\)
- Develop an economic assessment that accounts for the potential costs to Christchurch’s water supply, impacted businesses reliant on high quality water and public health costs associated with increased cancer cases.\(^{192}\)
- Require clarification as to how Environment Canterbury will ensure the extra costs of obtaining clean water is paid for users of large quantities of water and fertiliser.\(^{193}\)
- Insert provisions to undertake necessary surveys to monitor a controlled eradication programme for willows and progressively implement the program.\(^{194}\)
- Require a council-led campaign that enables transition to alternative farming practices.\(^{195}\)
- Amend PC7 to take into account natural disasters.

\(^{184}\) PC7-36.1, PC7-38.5, PC7-446.2, PC7-493.1
\(^{185}\) PC7-65.1
\(^{186}\) PC7-171.1
\(^{187}\) PC7-152.3
\(^{188}\) PC7-551.13
\(^{189}\) PC7-68.45-48, PC7-97.40-43
\(^{190}\) PC7-400.8
\(^{191}\) PC7-293.1
\(^{192}\) PC7-293.2
\(^{193}\) PC7-338.3
\(^{194}\) PC7-522.2
\(^{195}\) PC7-209.3
8.3. Submission requests that are considered to address matters that do relate to regional council functions under the RMA, but which are outside the scope of matters addressed in PC7 include:

- Require action on the exploitation of Belfast and Christchurch’s “water lines”. 196
- Require Environment Canterbury to undertake a plan change for Section 12 of the CLWRP so that a single regional plan applies and so Central Canterbury’s braided rivers are managed in accordance with Te Mana o te Wai. 197
- Several submitters seek changes to existing provisions within the CLWRP that are not subject to amendments under PC7. 198
- Require additional provisions to cover coastal surface water takes. 199
- Additional requirements for monitoring and compliance. 200
- Amend Part C of PC7 to include provisions for penalties in instances of non-compliance.

---

196 PC7-491.2
197 PC7-472.219
198 For example, PC7-84.31, PC7-193.26, PC7-193.27, PC7-65.3, PC7-102.1, PC7-424.148
199 PC7-306.9
200 For example, PC7-88.44
9. Submissions seeking new region-wide definitions

Introduction

9.1. Part A of PC7 proposes five new definitions to be incorporated into the region-wide definition table in Section 2.9 of the CLWRP. The additional definitions are introduced as a result of new policies and rules, and amendments to existing policies and rules proposed in Part A of PC7.

9.2. Submissions seeking amendments to definitions proposed in Part A of PC7 have been analysed in the relevant sections of this Section 42A Report. Those submissions seeking amendments to proposed definitions and new definitions in Parts B and C of PC7 have been analysed in the relevant Section of this Section 42A Report. This section of the report covers those submissions seeking new definitions be added to the region-wide definitions in Section 2.9 of the CWLRP.

Submissions and analysis

9.3. Twenty-two submissions were received seeking new definitions be inserted into Section 2.9 of the CLWRP.

9.4. Several submissions seek new definitions to clarify the terminology used in PC7. These are as follows:

- Actual and potential adverse environmental effects;\(^\text{201}\)
- Compromise;\(^\text{202}\)
- Dairy;\(^\text{203}\)
- Damage;\(^\text{204}\)
- Ecological Significance;\(^\text{205}\)
- Livestock;\(^\text{206}\)
- Stock;\(^\text{207}\)
- Stock species;\(^\text{208}\)
- Mahinga kai;\(^\text{209}\)
- Non-consumptive;\(^\text{210}\)
- Erroneous;\(^\text{211}\) and
- Stocking rates.\(^\text{212}\)

9.5. It is our view that generally these terms do not require definitions as they can be interpreted based on their common dictionary definition, or they are adequately described in the

\(^\text{201}\) PC7-88.2
\(^\text{202}\) PC7-472.22
\(^\text{203}\) PC7-131.5
\(^\text{204}\) PC7-472.22
\(^\text{205}\) PC7-88.3
\(^\text{206}\) PC7-472.12
\(^\text{207}\) PC7-472.13
\(^\text{208}\) PC7-472.15
\(^\text{209}\) PC7-108.6
\(^\text{210}\) PC7-337.5;
\(^\text{211}\) PC7-425.13, PC7-441.11
\(^\text{212}\) PC7-472.14
introductory sections to the CLWRP. Additionally, many of the terms do not form part of the rule framework and are only mentioned in the proposed policies. On this basis, we do not consider that including the definitions for the terms listed above will improve the implementation of PC7.

9.6. C Deans\textsuperscript{213} seeks the insertion of definitions for the terms ‘hoofprint’ and ‘pugging’. We note that these terms are not used within the policies or rules of PC7, given this we do not consider defining such terms necessary.

9.7. G Fenwick\textsuperscript{214} and WWHT seek that definitions of ‘waterbody’ and ‘wetland’ are inserted into Section 2.9 of the CLWRP. We note these terms are already defined in Section 2.9 and the suggested relief would not provide any additional clarification for plan users. Accordingly, we recommend the relief be rejected.

9.8. As One Incorporated\textsuperscript{215} seeks amendment to the definition of ‘nitrogen baseline’ to enable the nitrogen baseline to be calculated on the basis that a farming activity is operational, including any consented irrigation where a resource consent to take and use water was granted for irrigation during the baseline period. The relief is sought on the basis that all investment during the baseline period should be treated the same, therefore water permits should be provided the same dispensation as building and effluent discharge consents.

9.9. We consider the relief sought could intensify the land use taken place during the nitrogen baseline period. Given this, there may be a significant impact on water quality and the ability to meet the freshwater outcomes. The definition of ‘nitrogen baseline’ was thoroughly tested through a plan hearing process, and has been implemented with no indication that the definition is not fit for purpose. We recommend rejecting the submission from As One Incorporated.

9.10. WWHT\textsuperscript{216} and Forest & Bird\textsuperscript{217} seek a definition is inserted for the term ‘bank’. We acknowledge that several of the proposed policies and rules that form part of PC7 include the term ‘bank’. However, consider the ‘bank’ of a waterbody is best considered on a case-by-case basis and not constrained by a definition. Accordingly, we recommend the rejection of these submission points.

\textsuperscript{213} PC7-494.4, PC7-494.3
\textsuperscript{214} PC7-339.1
\textsuperscript{215} PC7-387.17
\textsuperscript{216} PC7-88.5
\textsuperscript{217} PC7-472.208
Part 3: Submissions on Part A of PC7: Omnibus

1. Introduction to Part A of Plan Change 7: Omnibus

1.1. This chapter of the Section 42A Report discusses the submissions made on the provisions in Part A of PC7, which introduce region-wide responses to a range of issues that have emerged in recent years, particularly arising from amendments to the NPSFM, the introduction of the NESPF, and issues with the current CLWRP provisions for managing a number of discrete activities or topics.

1.2. The amendments proposed in Part A of PC7 seek to resolve a wide range of issues relating to definitions, policies, rules, schedules and maps. These issues have been identified by Environment Canterbury staff as a result of changes to the NPSFM, the introduction of the NESPF and implementation of the CLWRP as well as through feedback from Ngāi Tahu, industry and other organisations. The issues and subsequent proposed changes addressed within Part A of PC7 are discrete in nature as they seek to address specific topics (for example, salmon spawning sites). As such, the issues related to each topic have been described in detail in the introduction to each relevant evaluation section. These issues and the responses in Part A of PC7 can be summarised as follows:

- **NPSFM**: The NPSFM was amended significantly in 2014 to introduce the NOF. PC7 proposes amendments to better align the outcomes and limits in the CLWRP with the content of the NPSFM, and particularly the numeric attribute states in the NOF.

- **NESPF**: There is uncertainty around which CLWRP provisions apply to plantation forestry activities since the introduction of the NESPF in 2018, and the ability to retain provisions in regional plans that are more stringent than the NESPF in limited circumstances. PC7 proposes to introduce new provisions specifically addressing plantation forestry activities to improve clarity and ensure the freshwater objectives contained in the CLWRP continue to be met.

- **Ngāi Tahu values**: The wording of some restricted discretionary rules in the CLWRP impedes Environment Canterbury’s ability to consider effects on Ngāi Tahu values and sites of significance to Ngāi Tahu, including wāhi tapu and wāhi taonga. PC7 proposes to amend these rules by including new matters of discretion which will allow consideration of effects on Ngāi Tahu values.

- **Habitats of indigenous freshwater species**: The CRPS requires identification and protection of significant habitats of indigenous fauna. Additionally, there is evidence that some activities managed by the CLWRP are leading to damage to, or loss of, aquatic habitats generally. PC7 proposes to define, map and protect the critical habitat of threatened indigenous freshwater species, and improve management of particular activities known to result in adverse effects on aquatic habitats.

- **Hinds Drains Working Party recommendations**: The Hinds Drains Working Party has developed a management approach for the main waterbodies of the Lower Hinds Plains which has not yet been incorporated into the CLWRP. PC7 responds to the Hinds Drains Working Party’s recommendations.

- **Managed aquifer recharge**: Despite their potential environmental benefits, permanent managed aquifer recharge systems are not enabled by the CLWRP. PC7
proposes amendments to specifically provide for managed aquifer recharge as a way to improve environmental outcomes.

- **Commercial vegetable operations**: These growing operations have complex rotations and variations in the land used for growing which is not well provided for in the CLWRP. PC7 proposes new provisions to specifically manage commercial vegetable production in a way that recognises the particular challenges of these operations as well as their nutrient losses.

- **Schedule 6 (Bathing sites)**: Recent reports have identified a number of popular bathing sites in Canterbury that are not currently included in Schedule 6 of the CLWRP. PC7 proposes to add 64 additional sites to Schedule 6 and clarify the setback distance for stock exclusion from lakes.

- **Schedule 17 (Salmon spawning sites)**: The list of sites in Schedule 17 of the CLWRP does not include all sites that have been identified as significant for salmon spawning. PC7 proposes to introduce 31 additional sites identified as significant and make minor amendments to clarify the locations of existing sites.

- **Minor changes**: A range of minor errors, omissions, implementation and consistency issues have been identified in the CLWRP by Environment Canterbury staff. PC7 proposes a number of changes to address these issues.

1.3. Some topics which form Part A of PC7 have very interconnected themes, provisions and submissions. For these topics it was considered appropriate to provide our recommendations to the Panel in full at the end of the section, rather than directly after following the analysis of a group of submissions points. For example, in the NPSFM topic submissions are discussed by attribute and the changes to Tables 1a and 1b are summarised at the end of the section. Similarly, in the NESPF topic the related themes (for example sediment discharges and habitats of indigenous freshwater species) affect the suite of plantation forestry provisions so a full summary of the recommendations are provided at the end of the section rather than by rule or by theme. Elsewhere in the report, where it is appropriate, recommendations on provisions directly follow the analysis of submission points.

Introduction

2.1. This section of the report discusses the amendments to the CLWRP proposed in Part A of PC7 to improve alignment between the attribute states in the NPSFM and the water quality outcomes and limits in the CLWRP.

2.2. PC7 amends the region-wide water quality outcomes in Tables 1a and 1b and the associated water quality limits in Schedule 8. The water quality outcomes in Tables 1a and 1b and limits in Schedule 8 collectively form the ‘freshwater objectives’ for Canterbury, as described by the NPSFM.219

2.3. The NPSFM 2014 (as amended 2017) (hereinafter referred to as the NPSFM) introduced the National Objectives Framework (NOF) which sets out a framework for identifying freshwater values (including national compulsory values), and setting freshwater objectives and limits to achieve those values. The NPSFM includes two compulsory values: ecosystem health and human health for recreation; and has established water quality attributes and attribute states for each of these values220.

2.4. The CLWRP currently includes all of the water quality attributes listed in the NOF, except planktonic cyanobacteria, as either freshwater outcomes in Tables 1a and 1b or limits in Schedule 8 (as well as the area specific outcomes and limits in Sections 6 to 15 of the CLWRP). However, as the CLWRP attributes were established prior to the development and gazetting of NOF attributes, amendments are required where the attributes are below the NOF national bottom lines.

2.5. The CLWRP does not currently contain limits for cyanobacteria in lakes, but Policy 4.3(a) states that surface water bodies are to be managed so that toxin producing cyanobacteria do not render rivers or lakes unsuitable for recreation or human and animal drinking-water. The thresholds for each cyanobacteria attribute state in the NPSFM relate to the increasing risks to human health from contact with the water, which is consistent with Policy 4.3(a). To better align with the NPSFM, PC7 introduces the NPSFM attribute states for cyanobacteria-planktonic into Table 1b in relation to human health for recreation.

2.6. Amendments are also needed to align numeric values and metrics where the CLWRP uses different (but comparable) indicators, and to clarify how compliance with the limits is to be determined. For example, Table 1a contains periphyton biomass thresholds for different river management units as well as a percentage cover of nuisance filamentous green algae, and these outcomes align well with the NPSFM bands. However, there is a difference in the acceptance criteria: the CLWRP criteria is a maximum value that ‘no sample shall exceed’ while the NPSFM criteria is ‘no more than 8% of samples exceeding the threshold’. PC7 introduces a new footnote for Table 1a (Footnote 2) to change the Chlorophyll a acceptance criteria for the periphyton attribute to align with the NPSFM.

---

218 The planning author for this section is Andrea Richardson and the technical author is Shirley Hayward.
219 As outlined in Section 2.4 of the CLWRP: Fresh Water Objectives and Section 2.5 of the CLWRP: Limits.
220 The values for ecosystem health: Phytoplankton biomass as Chlorophyll a (lakes only); Total nitrogen concentration (lakes only); Total phosphorus concentration (lakes only); Periphyton biomass as Chlorophyll a (rivers only); Nitrate toxicity (rivers only); Ammonia toxicity (lakes and rivers); Dissolved oxygen concentration (rivers below point source discharges only). The values for human health for recreation: *Escherichia coli* (lakes and rivers); Planktonic cyanobacteria biovolume (lakes and lake-fed rivers).
2.7. The technical report that supports the Section 32 Report for this topic ‘Surface water quality outcomes and limits – alignment of regional and national planning documents’ (hereafter referred to as Report 19/27) provides a description and rationale for the PC7 changes to Tables 1a, 1b and Schedule 8.

2.8. The submissions relating to the PC7 amendments to Tables 1a and 1b and Schedule 8 have been grouped together and considered according to common themes, including specific attributes where appropriate.

General Submissions and Submissions on Stringency

Submissions

2.9. A number of submitters are generally supportive of the Tables 1a and 1b and Schedule 8 amendments for reasons including providing consistency with NPSFM and the sub-region sections of the CLWRP.

2.10. Blackhills considers that the current provisions are sufficient, and no change to Tables 1a and 1b and Schedule 8 is warranted.

2.11. Several submitters seek more stringent region-wide outcomes and limits for surface water and groundwater quality. H Iles and Richmond Residents & Business Association consider that the outcomes in Tables 1a and 1b are inadequate to deliver improvements in water quality. Ngā Rūnanga consider that the Table 1 outcomes should be amended so that water quality is maintained where attributes are currently above a B Band in the NPSFM and improved to at least a B Band where they are below. A Bray states that water quality limits in Schedule 8 should be determined for long term common good rather than economic benefit. Other submitters consider the Schedule 8 limits should be lowered to align with current research on the effects of water quality on human health and ecosystems, outcomes sought by the community, the NPSFM and ANZECC 2000.

2.12. A small number of submissions seek amendments to Tables 1a and 1b and Schedule 8 which do not directly relate to a PC7 amendment, and include:

- Add a wider range of water quality limits to Schedule 8 including insecticides.
- Add a new freshwater outcome to Table 1 that indigenous freshwater species are sufficiently abundant to support healthy waterways equivalent to 1990 levels of abundance and diversity.

---

221 For example; Genesis (PC7-422.5, PC7-422.6), Balance Agri-Nutrients (PC7-441.1, PC7-441.2), DOC (PC7-160.2)
222 PC7-326.1, PC7-326.2, PC7-326.3
223 PC7-310.2, PC7-310.3
224 PC7-455.10
225 PC7-423.86, PC7-423.87
226 PC7-548.2
227 For example; Richmond Residents & Business Association (PC7-455.9), Avon-Otakaro Network (PC7-91.6), CCC (PC7-337.122)
228 The Australian and New Zealand Guidelines for Fresh and Marine Water Quality were updated in 2018 and replace a previous set of guidelines commonly referred to as the ANZECC 2000 guidelines.
229 A Bray (PC7-548.1)
230 WWHT (PC7-88.12, PC7-88.18)
• Add a new attribute to Tables 1a that at least 3% of any catchment will be protected and include the restoration of wetlands\textsuperscript{231}.
• Add a new groundwater outcomes table to Table 1 or a discussion of freshwater outcomes for Canterbury’s groundwater\textsuperscript{232}.
• Amend the Schedule 8 groundwater limits to ensure groundwater maintains its natural life-sustaining capacity\textsuperscript{233}.

\textbf{Analysis}\textsuperscript{234}

2.13. Responses to the submissions seeking more stringent region-wide outcomes and limits for lakes and rivers for specific attributes are detailed in the following sections of this report.

2.14. The supporting technical Report 19/27 recommends revisions to the CLWRP Tables 1a and 1b water quality outcomes and Schedule 8 water quality limits that are the minimum acceptable levels of impact for each river or lake management unit based on current knowledge, the NPSFM national bottom lines and relevant guidelines. Tables 1a or 1b do not introduce or amend any outcomes that are worse (less stringent) than the NPSFM national bottom lines. Likewise, none of the region-wide water quality limits in PC7 Schedule 8 are set below NPSFM national bottom lines.

2.15. Some water quality outcomes for certain management units in Tables 1a and 1b are set at Attribute State C, which is lower (worse than) Attribute State B sought by Ngā Rūnanga. The attribute states have been set at levels that reflect a combination of current impacts on, and the condition of, different river and lake management units, Environment Canterbury’s understanding of key values and conditions needed to support those values, and pragmatic expectations about likelihood of improvements up to Attribute State B or better. I acknowledge that river and lake management units set at Attribute State C suffer a degree of impact from current or historic activities.

2.16. The attributes in PC7 Tables 1a and 1b that are determined to be below Attribute State B are:

- Cyanobacteria for ‘coastal lakes’ and ‘artificial lakes-others’

2.17. In response to submissions seeking more stringent water quality outcomes in Tables 1a and 1b and water quality limits in Schedule 8, we note that the proposed changes to surface water quality outcomes and limits are intended to improve alignment between the attribute states in the NPSFM and the water quality outcomes and limits in the CLWRP. PC7 amends the region-wide groundwater quality limits table in Schedule 8 to improve readability, but does not amend, delete or add any groundwater limits. The NPSFM states\textsuperscript{235} that where FMUs are below the national bottom lines specified in Appendix 2 for each attribute, water quality must be improved to at least the national bottom line. We note that the proposed outcomes and

\textsuperscript{231} WWHT (PC7-88.13)
\textsuperscript{232} G Fenwick (PC7-339.3, PC7-339.4)
\textsuperscript{233} G Fenwick (PC7-339.9, PC7-339.12)
\textsuperscript{234} The technical advice has been prepared by Shirley Hayward, Environment Canterbury Scientist.
\textsuperscript{235} NPSFM preamble on page 5, paragraph 2 and Policy CA2 (d)
limits in Tables 1a and 1b and Schedule 8 are consistent with these requirements and take into account the methods available to achieve those limits.

2.18. An increase in stringency requires an assessment of the implications (cultural, economic, social and environmental) of this change, and methods to drive the achievement of more stringent outcomes. This is not included in PC7. Any changes to the Schedule 8 limits to provide greater environmental protection are unlikely to be achieved through the implementation of the methods proposed in PC7 and will have a significantly greater economic impact. In the absence of an assessment that more stringent outcomes and limits are more appropriate, we recommend rejecting these submissions.

2.19. For similar reasons, I recommend rejecting the submissions seeking amendments which do not directly relate to a PC7 amendment to Tables 1a and 1b and Schedule 8. The relief sought requires further clarification and investigation into the issue and potential solutions, and then an assessment of the implications.

Lakes trophic status and attributes

Provisions

2.20. Table 1b contains TLI scores for different types of lakes. The TLI is an index of lake trophic condition developed for New Zealand lakes that incorporates measures of total nitrogen, total phosphorus, Chlorophyll a and water clarity as annual average values, as described in Report 19/27. Schedule 8 of the CLWRP includes limits for all lake types for total nitrogen, total phosphorus and Chlorophyll a that correspond to the TLI score for each lake type in Table 1b. The trophic state descriptions are currently applied against the incorrect TLI scores, although the limits for total nitrogen, total phosphorus and Chlorophyll a are correct. To address this, PC7 deletes the trophic state descriptions as the scores and corresponding water quality limits set the required freshwater outcomes for the lakes, regardless of the trophic state descriptions.

2.21. The NPSFM attribute states for total nitrogen, total phosphorus and Chlorophyll a use annual median as the assessment statistic. In contrast and based on the TLI scoring system, annual averages are currently used in Schedule 8. To define phytoplankton attribute states for lakes, the NPSFM uses an annual median and an annual maximum Chlorophyll a metric. To ensure consistency between the TLI score in Table 1b and the corresponding TLI limits in Schedule 8, PC7 introduces into Table 1b the annual maximums for phytoplankton outlined in the NPSFM. As Chlorophyll a is essentially the outcome of nutrient status and other biophysical processes, PC7 moves the annual average for Chlorophyll a from Schedule 8 into Table 1b.

2.22. For the ‘coastal lakes’ management unit, the existing TLI is set at a maximum score of 6 in Table 1b meaning that the corresponding total nitrogen, total phosphorus and Chlorophyll a limits in Schedule 8 are currently below (worse than or do not meet) the national bottom lines in the NPSFM. To give effect to the NPSFM, PC7 reduces the maximum TLI score for coastal lakes to 5 and adjust the limits in Schedule 8 accordingly.

236 For example: Oligotrophic, mesotrophic.
Submissions

2.23. DOC\textsuperscript{237} and Ngā Rūnanga\textsuperscript{238} consider there is a discrepancy in the TLI outcomes in Table 1b and limits in Schedule 8 for small to medium sized high country lakes, including Māori Lakes and Lakes Emily and Georgina. The submitters recommend that the TLI outcome for Māori Lakes and Lakes Emily and Georgina in Table 1b is set at TLI 3 (rather than 4) to ensure the natural character and ecosystem health of the lakes are protected for future generations. Ngā Rūnanga\textsuperscript{239} also consider the TLI outcome in Table 1b for Coopers Lagoon / Muriwai should be amended to 3 (rather than 5).

Analysis\textsuperscript{240}

2.24. In response to the submissions from DOC and Ngā Rūnanga regarding a discrepancy in the TLI outcomes for small to medium sized high country lakes in Table 1b, PC7 only amends the TLI outcome for ‘coastal lakes’, where a TLI of 5 is proposed to align with the NPSFM national bottom lines for Chlorophyll a, total phosphorus and total nitrogen. The existing TLI outcome values in Table 1b of the CLWRP are based on the Burns et al (2000) report.\textsuperscript{241}

2.25. We acknowledge that an error was made when inserting Chlorophyll a attributes into Table 1b for ‘Small to med high country lakes’. Chlorophyll a annual average and annual maximum values for Māori Lakes, and Lakes Emily and Georgina should be 5 mg/m\textsuperscript{3} and 25 mg/m\textsuperscript{3} respectively, which correspond to a TLI of ≤4 and NPSFM Attribute State B. For the management unit ‘All other small to medium sized high country lakes’ the annual average and annual maximum Chlorophyll a concentrations should be 2 mg/m\textsuperscript{3} and 10 mg/m\textsuperscript{3} respectively which correspond to the TLI of ≤3.

2.26. The total nitrogen and total phosphorus limits in Schedule 8 lakes table correctly correspond to the TLI for each lake management unit. Importantantly, the metrics proposed for total phosphorus, total nitrogen and Chlorophyll a (annual average) are consistent with the Burns et al (2000) trophic designations, rather than the generally less conservative NPSFM metric of annual median.

2.27. In response to Ngā Rūnanga on the TLI outcome in Table 1b for Muriwai (Coopers Lagoon), this waterbody has been deleted from Table 1b in PC7 because it is covered in the sub-regional chapter Section 11 (Selwyn Te Waihora). Table 11(b): Freshwater Outcomes for Selwyn Te Waihora Sub-region Lakes specifies that Muriwai (Coopers Lagoon) has a TLI of 4. PC7 does not propose any changes to the water quality outcomes tables or corresponding limits tables in Section 11.

\textsuperscript{237} PC7-160.3
\textsuperscript{238} PC7-423.14, PC7-423.75
\textsuperscript{239} PC7-423.12
\textsuperscript{240} The technical advice has been prepared by Shirley Hayward, Environment Canterbury Scientist.
\textsuperscript{241} The TLI values for lakes in the Canterbury Natural Resources Regional Plan were recommended by Hayward et al (2009) and based on the Burns et al (2000) report (which is referred to as the ‘Report by Lakes Consulting’ in the CLWRP Table 1b key).
2.28. I note that the units for Chlorophyll a for lakes (as a measure of phytoplankton biomass) are incorrect in PC7 Table 1b should be amended from milligrams per litre (mg/L) to milligrams per cubic metre (mg/m\(^3\)).\(^{242}\)

**Nitrate and ammoniacal toxicity**

**Provisions**

2.29. Schedule 8 of the CLWRP contains limits for nitrate toxicity for two types of rivers: ‘spring-fed plains’ and ‘spring-fed plains urban’. Although the NPSFM contains nitrate attribute states for all rivers, nitrate concentrations in most rivers in Canterbury, other than spring-fed plains river management units, fall into Attribute State A, but with wide variation in concentrations within that attribute state. Report 19/27 explains that it is inappropriate to set one region-wide limit for nitrate toxicity. This is clarified in PC7 by including columns for nitrate nitrogen concentrations (annual median and 95th percentile) in Schedule 8 and indicating the river management units where those concentrations are not applicable. For the ‘spring-fed plains’ and ‘spring-fed plains urban’ management units where limits are set, PC7 includes a footnote clarifying that where a river currently meets a higher (better) attribute state than the one specified in Schedule 8, that state shall not deteriorate.

2.30. The NPSFM includes ammonia toxicity as an attribute for the compulsory ecosystem health value for lakes and rivers. Ammonia toxicity is rarely an issue in Canterbury and monitoring shows concentrations in rivers generally fall into the equivalent of the NPSFM Attribute State A and for coastal lakes into the NPSFM Attribute State B. Accordingly, PC7 introduces ammoniacal nitrogen concentrations into Schedule 8 at the NPSFM Attribute State A for all rivers and inland lakes and the NPSFM Attribute State B for ‘coastal lakes’ and ‘artificial lakes-other’. A footnote (Footnote 1 in the Schedule 8 Lakes table) is also inserted to clarify that ammonia toxicity concentrations are based on a pH of 8 and a temperature of 20°C.

**Submissions**

2.31. Fish & Game\(^{243}\) and DOC\(^{244}\) support the new dissolved oxygen and ammonia nitrogen concentrations in Schedule 8.

2.32. Some submitters seek more stringent limits in Schedule 8 and in particular for nitrate nitrogen. WWHT\(^{245}\) considers that a 30% uncertainty factor should be applied to the Schedule 8 limits for ammonia nitrogen and nitrate nitrogen in rivers, and for total phosphorous, total nitrogen and ammonia toxicity in lakes, to ensure ecological improvements and public safety on account of scientific uncertainties. For the same reasons, the submitter also seeks to halve the Schedule 8 groundwater limit for nitrate nitrogen.

2.33. J Richardson\(^{246}\) considers that the nitrate nitrogen limits are too high and need to be lowered to internationally accepted values. Similarly, P Trolove\(^{247}\) is concerned that the nitrate

---

\(^{242}\) The concentration unit equivalents for Chlorophyll a are mg/m\(^3\) = g/L = 1000 x mg/L

\(^{243}\) PC7-95.52

\(^{244}\) PC7-160.36

\(^{245}\) PC7-88.95, PC7-88.96, PC7-88.97, PC7-88.98, PC7-88.99, PC7-88.100

\(^{246}\) PC7-65.51

\(^{247}\) PC7-262.1
nitrogen limit for ‘spring-fed plains’ rivers is too high to be protective of fish, and in particular trout eggs and fry.

2.34. DairyNZ\textsuperscript{248} is concerned that the 3.8 mg/L nitrate nitrogen limit for rivers in Schedule 8 may be difficult to achieve in agriculturally modified catchments, and requests that the limit is increased to 6.9mg/L where current concentrations exceeds this value, and otherwise require current concentrations to be maintained.

\textit{Analysis}\textsuperscript{249}

2.35. In response to WWHT’s submission asking for a 30% precautionary buffer to be added to all limits, scientific uncertainty is taken into account when establishing environmental limits and because of this uncertainty the limits have been developed using a conservative approach especially for toxicity limits. For example, toxicity thresholds are based on chronic effects rather than acute effects. The limits have also been set with consideration of the most sensitive species. For example, in the derivation of ammonia toxicity attributes in the NPSFM the toxicity thresholds are weighted relative to the most sensitive taxa\textsuperscript{250}. A precautionary approach is appropriate where there is uncertainty or absence of information. In this case, I consider that the information is sufficiently certain that additional precaution is not necessary.

2.36. In addition, and as previously noted in the section “General Submissions and Submissions on Stringency”, I consider that an increase in stringency of the Schedule 8 water quality limits to provide greater environmental protection is unlikely to be achieved through the implementation of the methods proposed in PC7 and will have a significantly greater economic impact. In the absence of an assessment that more stringent limits are more appropriate, if indeed these kinds of changes are within the scope of PC7, I recommend rejecting this submission.

2.37. In response to the DairyNZ submission requesting amendments to Schedule 8 'Rivers' nitrate nitrogen concentrations to 6.9 mg/L annual median where current concentrations are above this number, the existing Schedule 8 limit of 3.8 mg/L was derived from the best available science\textsuperscript{251} at the time of the original CLWRP was notified in 2012, and seeks to provide a 90% level of species protection. This science and level of protection is still considered relevant and appropriate for a region-wide limit for these river management units. A limit of 6.9 mg/L only provides an 80% level of species protection which would represent a degradation of water quality and may result in freshwater outcomes not being met.

2.38. I consider it is inappropriate to increase the existing nitrate nitrogen limit in Schedule 8 for ‘spring-fed plains’ and ‘spring-fed plains urban’ waterways as this is inconsistent with NPSFM Objective A2 to maintain or improve water quality.

2.39. For plan consistency and improved plan readability, I recommend introducing a new footnote into the Schedule 8 Rivers table that is the same as PC7 footnote 1 of the Schedule 8 Lakes table to clarify that ammonia toxicity concentrations are based on a pH of 8 and a temperature of 20°C. As there are no submissions directly seeking this amendment, the scope for this relief

\textsuperscript{248} PC7-357.72

\textsuperscript{249} This analysis has been prepared by Andrea Richardson (Planner) and Shirley Hayward (Scientist).


would be from the general submissions seeking better readability of PC7\textsuperscript{252}, as described in Part 2 Section 6 of this report.

**Escherichia coli and suitability for contact recreation grades**

**Provisions**

2.40. *Escherichia coli* (*E. coli*) is an NPSFM attribute for the compulsory value of human health relating to primary contact recreational activities. The NPSFM uses five attribute states but there is no national bottom line or minimum acceptable state for *E. coli*.

2.41. Tables 1a and 1b contain suitability for contact recreation grades for rivers and lakes which are broadly comparable with the NPSFM bands and attribute states for *E. coli*. The suitability for contact recreation grade outcomes is intended to apply to known swimming sites within each river and lake management unit. For completeness and consistency with the NPSFM, PC7 includes two new columns containing the relevant metrics (annual median and 95th percentile) for *E. coli* from the NPSFM that are intended to apply to all rivers and lakes.

**Submissions**

2.42. CCC\textsuperscript{253} comments that the *E. coli* values\textsuperscript{254} for urban and Banks Peninsula waterways in Table 1a should be reduced from 1200 to 1000, as the level of 1200 puts the 95\textsuperscript{th} percentile value of *E. coli* per 100ml in the ‘D’ Band of the NPSFM. Avon-Otakaro Network\textsuperscript{255} and Richmond Residents & Business Association\textsuperscript{256} also consider that an *E. coli* value in the ‘D’ Band is not appropriate for urban waterways and seeks that the 95\textsuperscript{th} percentile value be reduced to 800.

2.43. CDHB\textsuperscript{257} supports the reference to mahinga kai gathering in Tables 1a and 1b but are concerned that if the 95th percentile [*E. coli*/100ml] value is 1200 then the mahinga kai gathered from this waterway may not be safe to eat without appropriate heat treatment.

2.44. CDHB\textsuperscript{258} also suggests that the inclusion of ‘greater than’ and ‘less than’ symbols against the *E. coli* values.

2.45. Fish & Game\textsuperscript{259} and WWHT\textsuperscript{260} seek the following amendments to the suitability for contact recreation grades in Tables 1a and 1b, and consequential adjustments to the *E. coli* values, for the purpose of improving freshwater outcomes:

- Specify “good to fair” for all management units with “no set value” in Table 1a;
- Specify “good” for all management units with “good to fair” in Table 1a;
- Specify “good to fair” for all management units with “fair” in Table 1a; and
- Specify “good” for coastal lakes in Table 1b.

\textsuperscript{252} Page 2 of HortNZ submission
\textsuperscript{253} PC7-377.149
\textsuperscript{254} For the 95\textsuperscript{th} percentile (*E. coli*/100ml)
\textsuperscript{255} PC7-91.7
\textsuperscript{256} PC7-455.4
\textsuperscript{257} PC7-347.6, PC7-347.7
\textsuperscript{258} PC7-347.4, PC7-347.5
\textsuperscript{259} PC7-95.56, PC7-95.93, PC7-95.94, PC7-95.95, PC7-95.96
\textsuperscript{260} PC7-88.8, PC7-88.9, PC7-88.10, PC7-88.11, PC7-88.14, PC7-88.15
2.46. Beef + Lamb\textsuperscript{261} considers that Table 1a should be amended to provide \textit{E. coli} values for primary contact recreation sites during the bathing season, excluding during high flow events.

2.47. DairyNZ\textsuperscript{262} seeks the adoption of all four NPSFM metrics for \textit{E. coli} in Table 1a as it considers it is a key attribute linked to important freshwater values.

2.48. Forest & Bird\textsuperscript{263} is supportive of the information in the new note 2 in Table 1b for \textit{E. coli} sampling but considers that there needs to be a policy to identify responsibilities and require action for this sampling.

\textit{Analysis}\textsuperscript{264}

2.49. In response to the submissions from CCC, Avon-Otakaro Network and Richmond Residents & Business Association on greater stringency for \textit{E. coli} outcomes, I consider that there is scope to increase the stringency of the \textit{E. coli} outcomes proposed in Tables 1a and 1b of PC7 as unlike other attributes, the CLWRP does not currently specify a value for \textit{E. coli}, but rather a suitability for contact recreation grade which is not directly comparable to any \textit{E. coli} Attribute State in the NPSFM.

2.50. ‘Urban’ waterways can be frequented by high numbers of waterfowl that, in addition to damaged or ill-functioning wastewater and stormwater infrastructure, can be responsible for high rates of faecal contamination. This means \textit{E. coli} concentrations are frequently high in ‘spring-fed plains urban’ and ‘hill-fed lower urban’ waterways. Reducing the Table 1a outcome from 1200 to 1000 \textit{E. coli}/100 mL for these ‘urban’ waterways (as sought by CCC) will make this water quality outcome more difficult to achieve. However, we consider that increasing the stringency to 1000 \textit{E. coli}/100 mL in Table 1a is appropriate for ‘urban’ waterways as it will offer greater protection to human health associated with contact recreation and mahinga kai gathering.

2.51. For similar reasons, we agree with CCC that it is appropriate to change the Table 1a outcome for \textit{E. coli} in ‘Banks Peninsula’ streams from 1200 to 1000 \textit{E. coli}/100ml. This is more stringent than PC7, but not necessarily more stringent than the CLWRP because, as noted above, the CLWRP suitability for contact recreation grade is not directly comparable to any \textit{E. coli} Attribute State in the NPSFM. We note that the water quality outcome for \textit{E. coli} in ‘Banks Peninsula’ streams may be more achievable than for ‘urban streams’ as they are generally steeper and do not generally harbour the same number of waterfowl or density of wastewater and stormwater networks.

2.52. I agree with CDHB that ‘less than or equal to’ symbols should be included against the \textit{E. coli} values in Tables 1a and 1b as this will clarify the meeting of outcome values. The ‘greater than’ symbols are not required for the \textit{E. coli} values in Tables 1a and 1b as there are no values in NPSFM Attribute State D or E. I also agree that it is appropriate to improve the Table 1a outcome for \textit{E. coli} for all river management units from 1200 to 1000 \textit{E. coli}/100ml to reduce risks for activities associated with the PC7 cultural attribute, including mahinga kai gathering that may occur year round. However, I am not aware of any guidelines on \textit{E. coli} levels that relate to safe mahinga kai gathering, and accordingly the recommended amendment to the outcomes for \textit{E. coli} does not guarantee that food is safe to gather and consume.

\textsuperscript{261}PC7-214.9, PC7-214.10
\textsuperscript{262}PC7-357.1
\textsuperscript{263}PC7-427.18
\textsuperscript{264}This analysis has been prepared by Andrea Richardson (Planner) and Shirley Hayward (Scientist).
2.53. In response to Fish & Game and WWHT, I note that the ‘suitability for recreation grade’ is not directly comparable to any *E. coli* Attribute State in the NPSFM. This is in-part because these grading systems are based on different sampling regimes, (i.e. summertime only for the ‘suitability for recreation grade’ in Tables 1a and 1b, and year-round regardless of weather and flow conditions for the NPSFM *E. coli* 4 metric attributes). However, the best estimate is that the ‘suitability for recreation grades’ of ‘very good’, ‘good’ and ‘fair’ align with Attribute States A, B and C based on ‘risks of infection’. A ‘good to fair’ grade loosely aligns with Attribute States B to C, and so a conservative best estimate of Attribute State B has been applied. Grades of ‘poor’ and ‘very poor’ more closely align with the risks of infection outlined by Attribute States D and E.

2.54. Accordingly, ‘No value set’ is currently appropriate as a ‘suitability for recreation grade’ limit for ‘spring-fed plains urban’, ‘hill-fed lower urban’ and ‘Banks Peninsula’ waterways in Table 1a. The introduction of an *E. coli* attribute in Table 1a for all river and lake management units ensures that risks to human health from faecal contamination are addressed for all river and lakes.

2.55. I consider that ‘No set value’ is appropriate as a ‘suitability for recreation grade’ limit for coastal lakes because many of these environments function as wildlife refuges particularly for native waterfowl. Waterfowl are known polluters of water from defecation; therefore, managing these coastal environments for protecting primary contact recreation is at odds with managing them to protect biodiversity. The PC7 *E. coli* value for coastal lakes in Table 1b approximately equates to Attribute State C in the NPSFM.

2.56. I do not recommend that Tables 1a and 1b are amended to specify *E. coli* values for primary contact recreation sites as sought by Beef + Lamb. This is because Tables 1a and 1b include both the specific ‘suitability for recreation grade’ and *E. coli* concentration attributes. The ‘suitability for recreation grade’ values are based on national water quality guidelines for recreational activities and are intended to apply to specifically known and monitored recreational sites over the summertime. The *E. coli* attributes are derived from the NPSFM which apply at all times, regardless of flow or weather conditions, and as they are for the compulsory human health value, need to apply to all FMUs. As an interim measure while sub-regional FMUs are being developed, it is considered prudent to apply these attributes to all river and lake water quality management units.

2.57. Furthermore, the CLWRP only identifies sites where bathing “commonly” occurs which disregards the fact that contact recreation (particularly involving secondary contact) can feasibly occur at any time in any waterbody that contains water. Other uses that faecal contamination impacts on include the collection of mahinga kai and food from freshwater bodies, and water supply for livestock drinking water, which can also occur at any time. It is important that faecal contamination of water is managed at all times of the year. However, it is important to note that the *E. coli* attribute states in the NPSFM are based on risk to human health from contact recreation and do not presume to protect for other uses such as mahinga kai or livestock drinking water supply.

2.58. In response to DairyNZ, I consider that the use of only 95th percentile and median *E. coli* metrics is adequate to categorise peak and general levels of microbial contamination in freshwater bodies respectively. It is no less stringent than the 4-metric NPSFM NOF attribute

---


266 In accordance with footnote 1 page 40 NPSFM
table in regard to quantifying human health risks associated with the value of ‘human contact’ for recreation. It is a simpler approach and easier to interpret than the comparative four-attribute state table in the operative NPSFM. This is particularly important because protecting the value of human health for contact recreation is of considerable public interest. The 4-metric NPSFM table for *E. coli* provides no national bottom line for microbial contamination of water. We recommend rejecting the submission from DairyNZ.

2.59. In response to Forest & Bird’s submission seeking new policy direction for *E. coli* sampling associated with Table 1b, I note that policy direction regarding the water quality outcomes is already provided in Policy 4.1 of the CLWRP. I do not consider it appropriate or enforceable to specify responsibilities and require action for this sampling outside of a resource consent process.

**Macroinvertebrate metrics**

**Provisions**

2.60. Both the NPSFM and Table 1a of the CLWRP contain macroinvertebrate metrics. The NPSFM uses the MCI while the CLWRP uses the QMCI. Report 19/27 concludes that as MCI and QMCI scores can be calculated from the same data, and because QMCI is a more sensitive measurement, the existing QMCI metrics are recommended to be retained in Table 1a with adjustments to ‘hill-fed lower urban’ and ‘spring-fed plains urban’ river management units in order to set the QMCI outcomes to above the equivalent MCI action plan trigger value in the NPSFM. Accordingly, PC7 includes these adjustments.

**Submissions**

2.61. DOC\(^{267}\) supports the increase in QMCI score for urban waterways in Table 1a.

2.62. WWHT\(^{268}\) CCC\(^{269}\) and Fish & Game\(^{270}\) consider the outcomes for QMCI in Table 1a should be more stringent and suggest a change from 4.0 to 5.0 for ‘hill-fed lower urban’ waterways to help address declining trends in water quality, river flows, ecological health and public safety of surface and groundwater. CCC also seeks that the QMCI score for ‘spring-fed plains urban’ waterways be changed from 4.5 to 5.0 to provide better water quality outcomes.

**Analysis**

2.63. I note that Table 1a QMCI outcomes for ‘hill-fed lower urban’ and ‘spring-fed plains urban’ streams of 4.0 and 4.5 respectively are representative of a ‘fair’ quality class\(^{271}\) (or better) which aligns with the requirements of the NPSFM. The current water quality issues and ‘poor’

---

\(^{267}\) PC7-160.2

\(^{268}\) PC7-88.7

\(^{269}\) PC7-337.7

\(^{270}\) PC7-955.55

\(^{271}\) As per Table 7-1: Stark and Maxted (2004, 2007).


health of invertebrate communities in most ‘hill-fed lower urban’ and ‘spring-fed urban’ streams means that the proposed QMCI outcomes of 4.0 and 4.5, respectively, would be highly challenging to achieve. There is only one ‘hill-fed lower urban’ stream sampled in Canterbury as part of Environment Canterbury’s aquatic ecosystem health programme (Taitarakihi Creek) and only three streams of this class in Canterbury in total, all located in Timaru. Taitarakihi Stream generally has annual QMCI scores of less than 4.0 (i.e. ‘poor’), and the majority of Canterbury’s ‘spring-fed plains urban’ streams have low QMCI scores (i.e. less that would occur under natural/desirable conditions).

2.64. We recognise that improving QMCI outcomes for urban waterways has merit environmentally as it may encourage greater effort towards rehabilitating streams. However, the purpose of this proposed change is to improve alignment between the attribute states in the NPSFM and the water quality outcomes and limits in the CLWRP. An increase in stringency requires an assessment of the implications (cultural, economic, social and environmental) of this change, and methods to drive the achievement of more stringent outcomes. This is not included in PC7, as previously noted in the section “General Submissions and Submissions on Stringency”. Therefore, in the absence of an assessment that more stringent limits are more appropriate, I recommend rejecting this submission. Water quality limits for urban streams could be revised in conjunction with outcomes in future sub-region planning processes.

Cultural attribute

Provisions

2.65. PC7 proposes to include a narrative cultural attribute in Tables 1a and 1b that reads as follows: 
Freshwater mahinga kai species sufficiently abundant for customary food gathering, water quality is suitable for their safe harvesting, and they are safe to eat.

2.66. The Section 32 Report explains that this attribute has been adapted from the sub-region sections of the CLWRP and recognises the freshwater outcomes sought by Ngāi Tahu. It will give effect to Objective 3.1 of the CLWRP, which is that land and water are managed as integrated natural resources to recognise and enable Ngāi Tahu culture, traditions, customary uses and relationships with land and water. The inclusion of this attribute will contribute to the region-wide implementation of objectives and policies associated with Te Mana o Te Wai in the NPSFM.

Submissions

2.67. Forest & Bird272 supports the new cultural attribute in Tables 1a and 1b.

2.68. Ngā Rūnanga273 supports the cultural attribute but highlights its uncertainty of how this is achievable when some waterbodies are currently at or below the NPSFM national bottom line. The submitter considers that achievement of the cultural attributes requires setting water quality outcomes where these are currently at or below the national bottom line, and in particular ‘coastal lakes’, to be higher than the national bottom line by 2030.

---

272 PC7-427.17
273 PC7-423.88, PC7-423.89, PC7-423.10, PC7- 423.13
2.69. Ellesmere Sustainable Agriculture\(^{274}\) considers that the cultural attribute in Tables 1a and 1b should be deleted, stating that the wording is somewhat subjective which has the potential to result in long delays and disagreement as to its application, resulting in inefficiencies in application and outcomes.

2.70. WWHT\(^{275}\) requests that the cultural attribute in Tables 1a and 1b is amended to provide for a ‘moderate’ customary gathering of mahinga kai. The submitter also considers that the levels of gathering of mahi kai species needs to be measurable, such as a catch per unit effort or reference to 1990 species abundance data.

**Analysis**

2.71. In response to the submission from Ngā Rūnanga, no water quality outcomes in PC7 Tables 1a and 1b or PC7 Schedule 8 limits are set below (i.e. less stringent than) the NPSFM national bottom lines. For ‘coastal lakes’ in Table 1b, the TLI and Chlorophyll a attributes are set to correspond to NPSFM Attribute State C. Regardless, Table 1b outcomes and Schedule 8 limits do not apply to most large coastal lakes in Canterbury as they are identified in sub-regional sections of the CLWRP (for example; Te Waihora is Section 11, Te Roto o Wairewa in Section 10, Wainono Lagoon in Section 15).\(^{276}\)

2.72. We are not aware of any guidelines on *E. coli* levels, or any other attribute levels, that relate to safe mahinga kai gathering, and accordingly are unsure if the NPSFM national bottom lines equate to the threshold for meeting the PC7 cultural attribute that mahinga kai is sufficiently abundant, and safe to gather and consume.

2.73. I do not consider that the concerns raised by Ellesmere Sustainable Agriculture will eventuate as the water quality limits set through sub-regional planning processes already include this cultural attribute. The wording of the PC7 cultural attribute is the same as used in sub-region Sections 10, 11 and 15; for example, Table 11(b): Freshwater Outcomes for Selwyn Te Waihora Sub-region Lakes.

2.74. In response to WWHT, I appreciate that a more certain and measurable cultural attribute would be beneficial at a catchment scale. However, there are significant complexities and likely inaccuracies with providing this level of certainty at a region-wide scale.

**Dissolved oxygen**

**Provisions**

2.75. The NPSFM includes a dissolved oxygen attribute for rivers, that applies downstream of point sources discharges. The CLWRP includes dissolved oxygen outcomes for rivers in Table 1a and also for lakes in Table 1b that apply to all rivers and lakes reaches and areas. PC7 introduces dissolved oxygen concentration limits for all river management units in Schedule 8 specifically for point source discharges. Dissolved oxygen is retained in Tables 1a and 1b in its current form as a key indicator of eutrophication effects.

---

\(^{274}\) PC7-207.9, PC7-207.10

\(^{275}\) PC7-88.16, PC7-88.17

\(^{276}\) This paragraph was prepared by Environment Canterbury Scientist Shirley Hayward.
Submissions

2.76. DairyNZ\textsuperscript{277} considers that Schedule 8 should be amended to apply the NPSFM dissolved oxygen attribute to all stream/river reaches, and not solely downstream of point-source discharges. The submitter did not provide any reasoning in support of its submission.

2.77. P Trolove\textsuperscript{278} states that the dissolved oxygen limits for rivers in Schedule 8 should be an absolute minimum of 5.0 mg/L and the measurement should be taken early in the morning when oxygen levels are lowest, as fish will quickly die when oxygen levels fall below this level.

Analysis

2.78. We do not agree with the relief sought by DairyNZ. This would create duplication and some inconsistency with the current water quality outcomes in Table 1a, which include dissolved oxygen for all river management units and reaches across Canterbury but use a different measure (i.e. percentage saturation). Furthermore, Environment Canterbury has not assessed the achievability of the current NPSFM dissolved oxygen attributes for region-wide application as there is currently limited continuous dissolved oxygen data available.

2.79. In response to P Trolove, we are satisfied that the combination of water quality outcomes for dissolved oxygen as a percentage saturation for all rivers in Table 1a and dissolved oxygen concentration limits for point source discharges in Schedule 8 achieves the appropriate level of protection for aquatic fauna in Canterbury rivers from low dissolved oxygen stresses. As technology improves, continuous dissolved oxygen monitoring will provide more information about diurnal patterns and possibly lead to re-setting of limits to meet outcomes. Accordingly, we recommend rejecting the submission from P Trolove.

Miscellaneous submissions seeking amendments

2.80. This section of the report addresses a number of relatively disparate submissions seeking amendments to Table 1a and Schedule 8 that do not sit well in the attribute sections of this report.

2.81. CCC\textsuperscript{279} considers that the integration of Schedule 8 limits into PC7 and implementation within the CLWRP is unclear and suggests Schedule 8 should provide a link to the PC7 provisions to improve plan implementation. Meridian\textsuperscript{280} seeks that the CLWRP reiterates the relationship between the limits in Schedule 8 and those in Sections 6 to 15 to ensure that the Waitaki sub-region limits are not undermined, and suggests a note in Schedule 8 as follows: The matters in Schedule 8 are not relevant in circumstances where Water Quality Limits for Rivers, Lakes and or Groundwater have been set in Sections 6-15B.

2.82. In response to CCC and Meridian seeking further guidance on the relationship between Schedule 8, PC7 provisions and the sub-region sections of the CLWRP, I note that guidance on water limits is already provided in Section 2.5: Limits of the CLWRP, in the definition of ‘limits’, in region-wide policies (Policies 4.2, 4.7, 4.14 and 4.16), in region-wide rules, and in the sub-region sections of the CLWRP. For example, Section 11.7.3: Selwyn-Waihora explains that the

\textsuperscript{277} PC7-357.46
\textsuperscript{278} PC7-262.2
\textsuperscript{279} PC7-337.173, PC7-337.175, PC7-337.177
\textsuperscript{280} PC7-346.22
water quality limits in Tables 11(k), 11(l) and 11(m) prevail over the region wide limits in Schedule 8. Therefore, I do not consider any additional guidance is necessary.

2.83. CCC\textsuperscript{281} seeks amendments to footnote 2 of the Schedule 8 rivers table\textsuperscript{282} to provide a more specific date and more certainty of how and who will determine the attribute state. It also seeks that this footnote is also applied to the lakes and groundwater tables in Schedule 8.

2.84. In response to CCC, I consider that providing a more specific date in footnote 2 than “2018” may not be helpful if different time periods are used for sampling of nitrate nitrogen such as programmes that are based on hydrological years (July to June) or calendar years (January to December). Similarly, providing specific requirements on the appropriate sampling/testing methodology and who may undertake this may be unnecessarily limiting.

2.85. Regarding the second matter raised by CCC, footnote 2 of the Schedule 8 rivers table relates to nitrate toxicity limits, which are not included in the lakes table in Schedule 8. It is not necessary to include nitrate toxicity limits in the lakes table because the existing table includes total nitrogen limits. Total nitrogen limits for lakes by default constrain risks from nitrate toxicity because the total nitrogen limits (of which nitrate is a component) are set well below thresholds for toxicity effects. Therefore, it is not considered appropriate to apply footnote 2 to the lakes and groundwater tables in Schedule 8.

2.86. Ellesmere Sustainable Agriculture\textsuperscript{283} seeks the deletion of the proposed amendments to Schedule 8, citing a lack of consultation with directly affected land owners and stakeholders in the Selwyn-Waihora sub-region who may be potentially significantly impacted in the operation of land use activities.

2.87. In response to Ellesmere Sustainable Agriculture, I disagree with the submitter’s request to delete PC7 Schedule 8 as the intent of these amendments is to incorporate attributes and exceedance criteria that align with those in the NPSFM NOF tables. I note that water quality limits for certain attributes are determined at a catchment level, in consultation with stakeholders, are included in the relevant sub-region sections of the CLWRP. Water quality limits for all other attributes are set in Schedule 8. PC7 does not amend the water quality limits in the Section 11 (Selwyn Waihora) of the CLWRP.

2.88. Cashmere Stream Care Group\textsuperscript{284} considers that the existing Table 1a outcome for fine sediment in ‘hill-fed lower urban’ rivers should be more stringent where the natural bed content is cobble, reduced from 20 to 10 maximum percentage cover of the bed.

2.89. In response to Cashmere Stream Care Group, we note that PC7 does not amend the existing values for fine sediment in Table 1a, and therefore any amendments to the values for fine sediment in Table 1a are considered beyond the scope of PC7. If the submitter’s concerns relate to Cashmere Stream, this waterway is classified as a ‘Banks Peninsula’ water management unit in the CLWRP Planning Maps rather than ‘hill-fed lower urban’. There are only a few ‘hill-fed lower urban’ streams in Canterbury and these have inherent habitat and water quality issues for which a fine sediment outcome of less than 20% bed cover represents a target for improvement. Similarly, ‘Banks Peninsula’ stream catchments are prone to high

\textsuperscript{281}PC7-337.172, PC7-337.174, PC7-337.176

\textsuperscript{282}Footnote 2 in the Rivers table in Schedule 8 applies to nitrate nitrogen concentrations in ‘spring-fed plains’ and ‘spring-fed plains urban’ rivers only.

\textsuperscript{283}PC7-207.41

\textsuperscript{284}PC7-193.1
erosion rates of loess soils and therefore we consider an outcome of 20% sediment cover is appropriate for this management unit. Accordingly, I recommend rejecting this submission.

**Recommendation**

2.90. Amend Tables 1a and 1b as follows:

a. Table 1a: change the *E. coli* outcome for ‘spring-fed plains’, ‘spring-fed plains urban’, ‘spring-fed lower basins’, ‘hill-fed lower urban’ and ‘Banks Peninsula’ waterways from 1200 to 1000 *E. coli*/100ml.\(^{285}\)

b. Table 1a: delete “max biomass” as it is the acceptance criteria under CLWRP but the NPSFM acceptance criteria is defined in Footnote 2 of Table 1a.\(^{286}\)

c. Footnote 2 of Table 1a: add the word “of” i.e. “in no more than 16% of samples”.\(^{287}\)

d. Table 1a and 1b: add ‘less than or equal to’ symbols to the *E. coli* values.\(^{288}\)

e. Table 1b: change the units for Chlorophyll a (as a measure of phytoplankton biomass) to milligrams per cubic metre (mg/m\(^3\)).\(^{289}\)

f. Table 1b: change Chlorophyll a annual average and annual maximum values for Māori Lakes, and Lakes Emily and Georgina.\(^{290}\)

g. Table 1b: change Chlorophyll a annual average and annual maximum values for ‘All other small to medium sized high country lakes’.\(^{291}\)

2.91. Add a new footnote for ammonia toxicity concentration into the Schedule 8 Rivers table.

\(^{285}\) CCC (PC7-377.149)

\(^{286}\) This is a minor correction under clause 16 RMA.

\(^{287}\) This is a minor correction under clause 16 RMA.

\(^{288}\) CDHB (PC7-347.6, PC7-347.7)

\(^{289}\) Clause 16 of Schedule 1 of the RMA minor amendment

\(^{290}\) DOC (PC7-160.3)

\(^{291}\) DOC (PC7-160.3)
3. National Environmental Standard for Plantation Forestry\(^{292}\)

Introduction

3.1. This section of the report addresses submissions relating to the provisions proposed in Part A of PC7 to clarify the additional CLWRP restrictions which apply to plantation forestry activities, in addition to the regulations in the NESPF.

3.2. The NESPF came into force on 1 May 2018 and applies to any forest of at least one hectare that has been planted specifically for commercial purposes and will be harvested. The NESPF provides a definition of ‘plantation forest’ and regulates eight core plantation forestry activities and ancillary activities\(^ {293}\). Some matters controlled by the CLWRP are not managed in the NESPF, notably the effects of plantation forestry on water yield in flow sensitive catchments.

3.3. Regulation 6 of the NESPF provides that plan rules may be more stringent than the NESPF regulations in certain circumstances, including if the rule gives effect to an objective developed to give effect to the NPSFM. Environment Canterbury assessed the CLWRP provisions in comparison to the NESPF and identified that some provisions are more stringent than the regulations in the NESPF, particularly in relation to the management of suspended sediment, inanga spawning habitat, wetland disturbance, and fuel storage and refuelling.

3.4. To provide some context to the provisions that follow, the intention of the new plantation forestry provisions in PC7 was to simplify the planning framework for plantation foresters while ensuring the more stringent CLWRP rules, (being those rules which give effect to objectives developed to give effect to the NPSFM), are retained to achieve Canterbury’s freshwater outcomes. However, the provision for forests planted and managed for a carbon sink in flow sensitive catchments means that the rules cannot be simplified to the degree originally intended.

Provisions

3.5. PC7 proposes to amend the definition of ‘plantation forestry’ so that it aligns with the definition of ‘plantation forest or plantation forestry’ in the NESPF.

3.6. PC7 proposes two new rules (Rules 5.189 and 5.190) that specifically address plantation forestry activities to increase the certainty around which CLWRP rules apply to plantation forestry activities in addition to the NESPF, and to ensure that rules which give effect to CLWRP objectives developed to give effect to the NPSFM, continue to apply. These rules also mean that matters not managed under the NESPF continue to be managed under the CLWRP, in particular effects on water yield. The rules also replicate the new PC7 region-wide restrictions on activities that may damage or destroy any mapped habitats of threatened indigenous freshwater species.

---

\(^{292}\) This section is authored by Andrea Richardson.

\(^{293}\) Clause 5 of the NESPF lists the activities that the regulations apply to: afforestation; pruning and thinning to waste; earthworks; river crossings; forestry quarrying; harvesting; mechanical land preparation; replanting; ancillary activities relating to slash traps and indigenous and non-indigenous vegetation clearance; and discharges, disturbances, diversions, noise, dust, indigenous bird nesting, and fuel storage and refuelling.
3.7. PC7 also proposes to delete Rules 5.72, 5.73 and 5.74 that manage planting and replanting of plantation forest within flow sensitive catchments, and manage these activities under conditions (1) and (2) of Rule 5.189, or under Rule 5.190 if these conditions are not met.

3.8. PC7 proposes to:
- Amend the definition of “plantation forestry” to replicate the NESPF definition
- Introduce new Rules 5.189 and 5.190 specifically addressing plantation forestry activities
- Delete flow sensitive catchment Rules 5.72, 5.73 and 5.74

Definition of plantation forestry

Submissions

3.9. HortNZ\textsuperscript{294} and Beef + Lamb\textsuperscript{295} support the definition of plantation forestry as notified.

3.10. Ellesmere Sustainable Agriculture\textsuperscript{296} seeks that the definition expressly excludes ‘native plantings’, stating that significant restoration and riparian plantings occur in Canterbury and it is important that these continue given their impact on the environment is generally positive and not for commercial gain or harvest.

Analysis

3.11. I do not consider a change to the definition is required to satisfy the concerns raised by Ellesmere Sustainable Agriculture. To meet the definition, the plantation forest must be ‘a forest deliberately established for commercial purposes’ and must not be ‘long-term ecological restoration planting of forest species’. The NESPF defines a ‘forest species’ as a tree species capable of reaching at least 5 m in height at maturity where it is located, and there is no distinction between exotic and indigenous species. Therefore, the restoration and riparian plantings referred to by the submitter will not meet the ‘plantation forestry’ definition and consequently Rules 5.189 and 5.190 will not apply. Furthermore, any amendment to the definition that differs from the NESPF may not meet the objective of the proposal to provide clarity on when the CLWRP applies.

Recommendation

3.12. Retain the PC7 definition of ‘plantation forest or plantation forestry’ as notified.
Flow sensitive catchment Rules 5.72, 5.73 and 5.74

Submissions

3.13. Timaru DC states it supports the restrictions being transferred into the new plantation forestry rules because this helps to protect its interest in providing for community drinking-water and community water supplies. Federated Farmers also supports the rule deletions as notified, and comments that “the issue of flow-sensitive catchments is best dealt with at the sub-regional level”.

3.14. P H Ulrich considers it is inappropriate to restrict any new plantation forestry in flow sensitive catchments as this would restrict the ability of farmers to use forestry to offset their carbon emissions within their own farming business. The submitter highlights that willows and poplar tree plantings also impact on the drying of these catchments.

3.15. Cashmere Stream Care Group opposes the deletion of the flow sensitive catchment Rules 5.72 to 5.74, stating this would allow foresters the ability to use the Environmental Code of Practice for Plantation Forestry 2007 which does not properly address the issues of sediment and erosion on highly erodible hill country soils.

Analysis

3.16. In response to reasoning provided by Federated Farmers, I note that although the identification and mapping of flow sensitive catchments occurs at the Waimakariri and OTOP sub-region level in PC7, the management of activities within these areas falls under the region-wide Rules 5.189 and 5.190.

3.17. I recognise the merit in the issue raised by P Ulrich in terms of carbon emissions, but consider that the removal of restrictions could have detrimental effects on surface water flows in waterways within the mapped flow sensitive catchments. This is because these flow sensitive catchments are at risk of reduced surface water flows due to the interception of rainfall runoff. Therefore, I consider that if the forest is a new planting area within a flow sensitive catchment and meets the PC7 definition of ‘plantation forest’ it is appropriate for the effects of this activity to be considered through a resource consent process rather than as a permitted activity. Accordingly, I recommend rejecting this submission.

3.18. PC7 does not retain the CLWRP restrictions for forests planted for carbon sequestration in flow sensitive catchments. The existing CLWRP definition of ‘plantation forest’ includes “selected species of trees that are specifically planted and managed for a carbon sink” and therefore carbon sink forests are subject to the restrictions for planting and replanting plantation forests in flow sensitive catchments under Rules 5.72 to 5.74 of the CLWRP. However, the PC7 definition of ‘plantation forestry’ (the same as the NESPF) does not refer to

---

297 From Section 1.2.2 of the CLWRP: In dry upper catchments, changing the vegetation cover from short to tall vegetation, for example, to large forestry plantations, can significantly reduce low flows in rivers and streams as a result of trees intercepting rainfall and evaporating it into the atmosphere. This can increase the severity, duration and frequency of low flows, affecting in-stream values, and reducing the reliability of supply to existing abstractors.

298 PC7-292.36

299 PC7-430.32

300 PC7-252.8

301 PC7-193.20
carbon sink forests, specifies that the forest “has or will be harvested or replanted” and explicitly excludes any forest that is a “long-term ecological restoration planting of forest species”. As a result, a permanent forest that will not be harvested is not considered to be a ‘plantation forestry’ and the restrictions on flow sensitive catchments in PC7 Rules 5.189 and 5.190 do not apply.

3.19. Lessening the stringency for planting forests in a flow sensitive catchment is an unintended outcome as the PC7 provisions would not fully address Policy 4.75 which states:

4.75 Reduced effects arising from the interception of rainfall run-off on surface water flows in the flow sensitive catchments listed in Sections 6 to 15 is achieved by controlling the area, density and species of trees planted, except where tree-planting is required to control deep-seated soil erosion.

3.20. To amend this unintended outcome, I recommend reinstating flow sensitive catchments Rules 5.72, 5.73 and 5.74 to apply to new forests planted for carbon sequestration that do not meet the PC7 definition of plantation forestry. These rules could be grouped with the plantation forestry Rules 5.189 and 5.190. I note that the conditions of Rule 5.73 could be improved for clarity, but at this stage I recommend simply reinstating it.

3.21. Rule 5.72 of the CLWRP applies to forests that are replanted after harvest, and due to the harvesting activity, such forests would meet the definition of ‘plantation forestry’ rather than “a forest planted and managed for a carbon sink”. However, I recognise that there may be some plan user uncertainty associated with the definition if some species of trees, in particular pines, are specifically planted and managed for a carbon sink, but will eventually be harvested. For this reason, I recommend that Rule 5.72 is re-instated to provide a clear permitted activity pathway for forests planted for carbon sequestration in a flow sensitive catchment.

3.22. There are no submissions that specifically seek to reinstate the deleted flow sensitive catchment rules due to effects on surface water flows. However, Cashmere Stream Care Group seeks to reinstate the deleted Rules 5.72, 5.73 and 5.74 due to sedimentation concerns. The recommended amendments would also respond in part to Timaru DC’s submission seeking to protect its interest in providing for community drinking-water and community water supplies, although recognising that the relief sought by the submitter is to retain the deleted rules as notified.

Recommendation

3.23. If the Panel consider there is sufficient scope in the submissions, re-introduce the deleted Rules 5.72, 5.73 and 5.74, and group them with the plantation forestry Rules 5.189 and 5.190.

Plantation forestry Rules 5.189 and 5.190

3.24. Given the relatively limited number of submissions on the NESPF topic and as the following sub-topics relate to the same suite of plantation forestry provisions, the recommendations for these submissions will be provided at the end of this section.
Activity classification of Rule 5.190

3.25. Rayonier NZ and Port Blakely\(^{302}\) raises concerns that PC7 Rule 5.190 has a more stringent activity classification (discretionary) than the existing comparable rules in the CLWRP, stating that the increase in stringency is unnecessary and unjustified. In particular, the submitter highlights that planting new areas of forest within a flow sensitive catchment is a fully discretionary activity under PC7 Rule 5.190, and by comparison the CLWRP rules allow for planting of new areas within a flow sensitive catchment as a controlled activity where the relevant requirements are met and a restricted discretionary activity where these requirements are not met. Regarding replanting in flow sensitive catchments, PC7 Rule 5.190 provides that replanting defaults to a fully discretionary activity where the permitted activity standards in Rule 5.189 conditions (2)(a) to (c) are not met, whereas under the CLWRP non-compliance with such standards defaults to a restricted discretionary activity. The submitter also raises rule stringency concerns regarding discharges of suspended sediment, activities within an inanga spawning habitat and ‘Indigenous Freshwater Species Habitat’, the reduction of a wetland, and fuel storage and refuelling.

3.26. Regarding activity classification, Rayonier NZ and Port Blakely seeks that the activity status of the PC7 rules for flow sensitive catchments is no more stringent than the existing flow sensitive catchment Rules 5.72 to 5.74. For the discharge of sediment and activities within an ‘Indigenous Freshwater Species Habitat’, the submitter seeks less stringent (or deleted) provisions. For activities within inanga spawning habitat or wetlands, and fuel storage and refuelling, the submitter considers Rule 5.190 should be changed to restricted discretionary. The submitter also raises inconsistency between the Section 32 Report description of the changes and the result of the changes (i.e. s 32 says no significant change, but activity status is in practice more stringent).

3.27. In considering the submission from Rayonier NZ and Port Blakely, I note that the intention of having two plantation forestry rules is for simplicity and improved certainty for the forestry industry and other plan users on what rules apply in addition to the NESPF. To achieve this, the activities managed under Rules 5.189 and 5.190 include those undertaken within the bed of a lake or river, and in a wetland, and the most restrictive rule classification is applied to cover all activities. Although the construction, use, maintenance or removal of a river crossing is regulated by the NESPF, discharges associated with these activities are managed under the CLWRP rules. I note that the permitted activity threshold in PC7 Rule 5.189 is the same stringency as the existing equivalent CLWRP provisions. The discretionary activity status enables a reasonably simple rule framework for the broad range of plantation forestry activities that the NESPF applies to.

3.28. I agree that PC7 Rule 5.189 increases the stringency for trees growing in an existing plantation forest if sited in an inanga spawning habitat, as reference to the ‘use’ of land could be interpreted to mean that trees growing in an existing plantation forest would require consent. Therefore, I recommend removing the word ‘use’ from Rules 5.189 and 5.190\(^ {303}\). Regarding planting new areas of plantation forest in a flow sensitive catchment, given that the controlled activity status of existing Rule 5.73 would provide certainty of grant of consent, it is appropriate to reinstate this rule for plantation forestry.

3.29. I disagree that a restricted discretionary status is the equivalent rule stringency if conditions (3) to (7) of Rule 5.189 are not met, as the rule manages a broad range of core plantation

---

\(^{302}\) PC7-224.1

\(^{303}\) Rayonier NZ and Port Blakely (PC7-224.1)
forestry activities, including those that occur within the bed of a lake or river, or in a wetland. The discretionary status corresponds to that of Rule 5.141A which applies to discharges associated with river crossings.

3.30. For plantation forestry activities that may reduce the area of a wetland, the existing CLWRP rules that are equivalent to condition (6) of Rule 5.189 are Rule 5.161 (restricted discretionary) for activities associated with infrastructure for transport, electricity or water reticulation, and Rule 5.162 (non-complying) for all other activities. Disturbance of a wetland less than 100 square metres is not regulated by the NESPF and there is a permitted pathway for the disturbance of wetlands less than 2,500 square metres.

3.31. If the rule stringency concerns of Rayonier NZ and Port Blakely are fully addressed, the plantation forestry rules would include a permitted activity rule, a controlled activity rule that replicates Rule 5.73, and a restricted discretionary rule where conditions of the permitted and controlled activity rules are not complied with. In addition, I consider a rule with a discretionary status is required for activities that occur within the bed of a lake or river, or in a wetland, and a non-complying rule should also be considered in line with Rule 5.162 (reducing the area of a wetland).

3.32. On balance, I recommend the reinstatement of flow sensitive catchment Rule 5.73 (as discussed in the previous Part 3 Section 3 sub-topic ‘Flow sensitive catchment Rules 5.72, 5.73 and 5.74’, paragraph 3.13 onwards) but no other changes to the activity status of Rules 5.189 and 5.190. I consider this to be an efficient method of achieving the objectives of the proposal to provide for a reasonably simple rule framework for plantation foresters, and to ensure that the rules which give effect to a freshwater objective in the CLWRP continue to apply.

Sediment discharges – condition (3) of Rule 5.189

3.33. Cashmere Stream Care Group\textsuperscript{304} raises concerns about the risk of failure of sediment and erosion control measures on highly erodible hill country soils (e.g. loess) and recommend that management plans for forestry harvest on these soils should require the establishment of extensive indigenous vegetation barriers between the harvest area and stormwater channels at least two years prior to harvest. It seeks amendments to Rules 5.189 and 5.190 to strengthen erosion and sediment control measures used by plantation forestry harvesting on steep hill country beyond those set out in the Environmental Code of Practice for Plantation Forestry 2007, and supports\textsuperscript{305} the discretionary status of Rule 5.190 for harvesting on steep hill country.

3.34. The NESPF is more prescriptive than the CLWRP permitted activity rules in terms of methods to avoid or minimise sediment discharge during harvesting, including the requirement of a harvest plan and potentially also a forestry earthworks management plan if the land is at high risk of erosion\textsuperscript{306}. However, it is reasonably likely that the CLWRP permitted activity threshold for total suspended solids in the discharge, or the Schedule 5 visual clarity standards where the background concentration exceeds this threshold, is more stringent than the NESPF\textsuperscript{307} standard of ‘no conspicuous change in visual clarity or colour’. For this reason, PC7 proposes the sediment limits in condition (3) of Rule 5.189. Other than these, the NESPF prevails and

\textsuperscript{304} PC7-193.29
\textsuperscript{305} PC7-193.28
\textsuperscript{306} NESPF Clause 66(3)
\textsuperscript{307} NESPF Clause 65[a]
any other sediment measures would conflict or duplicate the NESPF. As such, it is recommended that Rule 5.189 is not amended to address the submitters concerns.

3.35. Rayonier NZ and Port Blakely\textsuperscript{308} states that the permitted activity threshold for the concentration of total suspended solids in the discharge (condition (3) of Rule 5.189) is unduly stringent and not supported by evidence that this level of discharge results in significant adverse effects on instream values. It raises a number of concerns with the condition, including its uncertainty, difficulty to apply in practice, and failure to make adequate provision for elevated background levels of suspended sediment in the waterbody. It seeks the deletion of this condition, or alternatively its amendment to address their concerns.

3.36. In response to Rayonier NZ and Port Blakely, I note that these existing permitted activity threshold concentrations for total suspended solids (50 or 100 g/m\textsuperscript{3} depending on the receiving waterbody type) are principally to avoid the addition of fine sediments running off into waterways that would subsequently settle on the bed, as outlined in the technical report\textsuperscript{309} for the CLWRP hearing. The discharge of new sediment differs from the remobilisation of bed sediment already within the river for which a less stringent visual clarity approach is considered suitable.

3.37. Suspended and deposited fine sediments have a range of negative impacts on aquatic ecosystems such that in some circumstances fine sediment is considered the major stressor. As such it is important to manage the discharge of fine sediment into a waterway and the mobilisation of sediments already present on the bed. Fine sediment in a waterway is mobilised during flood events and re-distributed downstream. This occurs to a greater magnitude and extent in rivers that experience large floods than those with stable flows such as spring fed streams. Flow event sediment mobilisation is a natural event in the river.

3.38. However, artificial mobilisation of fine sediment during baseflows and the discharge of new sediment will have negative impacts by virtue of the fact that the water should otherwise be clear and that biota have adapted to the previous state of the sediment deposition. In particular there has been research\textsuperscript{310} on the negative effects of suspended fine sediment on fish migration. Re-deposition of fine sediment is also associated with negative impacts upon macroinvertebrates\textsuperscript{311} and the promotion of cyanobacterial blooms\textsuperscript{312}.

3.39. In terms of the management of bed sediment re-mobilisation, a sediment discharge measure based on visual clarity as outlined in Schedule 5 of the CLWRP, has immediate environmental relevance to the aesthetics, contact recreation, and fish habitat values. But that for a situation where new sediment may be introduced, the more stringent Total Suspended Solids measures are appropriate.

3.40. On that basis, I recommend that the relief sought by Rayonier NZ and Port Blakely to delete the total suspended solids concentration limits in condition (3) of Rule 5.189 is rejected.

\textsuperscript{308} PC7-224.3
\textsuperscript{309} Hayward S; Meredith A; Stevenson M. 2009. Review of proposed NRRP water quality objectives and standards for rivers and lakes in the Canterbury region. Report No. R09/16.
\textsuperscript{310} Boubee et al. 1997 Avoidance of suspended sediment by the juvenile migratory stage of siz New Zealand native fish species.
\textsuperscript{311} Burdon, McIntosh, and Harding 2013 Habitat loss drives threshold response of benthic invertebrate communities to deposited sediment in agricultural streams. Ecological Applications 23: 1036-1047.
\textsuperscript{312} Wood et al. 2015 Entrapped sediments as a source of phosphorus in epilithic cyanobacterial proliferations in low nutrient rivers. Plos One DOI:10.1371/journal.pone.0141063.
Habitats of indigenous freshwater species

3.41. DOC\textsuperscript{313} and Ngā Rūnanga\textsuperscript{314} support Rules 5.189 and 5.190, in particular the regard given to significant indigenous freshwater values. Conversely, Ellesmere Sustainable Agriculture\textsuperscript{315} and Rayonier NZ and Port Blakely\textsuperscript{316} seeks the removal of the mapped Indigenous Freshwater Species Habitat restrictions, raising concerns about inadequate justification and consultation on the site locations and the risk to the viability of restoration programmes.

3.42. I respond to submitter concerns in the PC7 Part A topic ‘Indigenous Freshwater Species Habitats’.

Fuel storage and refuelling

3.43. Timaru DC\textsuperscript{317} states that it supports the hazardous substance restrictions in Rule 5.189 as these protect their interest in providing for community drinking-water and community water supplies.

3.44. Rayonier NZ and Port Blakely\textsuperscript{318} is concerned that a strict interpretation of condition (7) of Rule 5.189 does not allow any refuelling within 20 metres of a surface water body as a permitted activity and seeks that the rule be amended to replicate Rule 5.145.

3.45. In response to Rayonier NZ and Port Blakely, I note that fuel storage and refuelling are managed as separate activities in the CLWRP, under Rules 5.179 and 5.145 respectively. With regard to the location of a fuel container, the CLWRP (Rule 5.179) is more stringent than Regulation 104 of the NESPF which manages fuel storage, refuelling, and oil changing associated with plantation forestry activities. For refuelling of vehicles or equipment, the NESPF is more stringent, which is why Rule 5.189 does not restrict this activity. I do not consider the submitter’s concerns are warranted as condition (7) of Rule 5.189 clearly refers to storage of hazardous substances, and Regulation 104 of the NESPF differentiates between fuel storage and refuelling.

Other matters

3.46. Ngā Rūnanga\textsuperscript{319} seeks a new condition in PC7 Rule 5.189 that the activity does not occur within a Rock Art Management Area, and states that these important limestone rock areas are hydrologically sensitive and therefore may be affected by forestry practices.

3.47. In relation to the Ngā Rūnanga submission, where minor amendments to the sub-region wide rules are necessary to reflect particular resource management issues in a sub-region zone, these matters are achieved through provisions in the particular sub-region section. Part B of PC7 introduces new planning maps identifying the Rock Art Management Area in Section 14 (OTOP) of the plan and given that rock art is currently only mapped in this sub-region.

\textsuperscript{313}PC7-160.32 \textsuperscript{314}PC7-423.90 \textsuperscript{315}PC7-207.36 \textsuperscript{316}PC7-224.6 \textsuperscript{317}PC7-292.35 \textsuperscript{318}PC7-224.10 \textsuperscript{319}PC7-423.33
Therefore, Ngā Rūnanga’s relief is not discussed further within this section and is instead addressed in Part 4 Section 4 of this report.

3.48. Cashmere Stream Care Group requests that Rule 5.189 be amended to take precedence over Rule 5.167.

3.49. In response to Cashmere Stream Care Group, the Section 32 Report explains that changes proposed through PC7 will result in some conflict or duplication in the content of Rules 5.137, 5.148, 5.163, 5.167, 5.168, 5.169, 5.170, 5.171 and 5.175. Currently, there is only partial conflict in the CLWRP, arising from the differences in the definitions of “plantation forest” used in the CLWRP and NESPF. Once PC7 is made operative, Environment Canterbury will make consequential amendments to the identified rules to remove conflict or duplication.

3.50. Fish & Game seeks greater protection of salmon spawning sites listed in Schedule 17 by specifying ‘harvesting’ in the rule descriptors for Rules 5.189 and 5.190 and adding a new condition to Rule 5.189.

3.51. In response to Fish & Game, I note that the disturbance to stream beds and sediment discharges that often occur both during and after harvesting activities have potentially negative impacts on the health of aquatic habitats. Sediment loss from sloping land is exacerbated both during and after the harvesting of plantation forestry. The clean gravels that salmon require for spawning are particularly vulnerable to such impacts.

3.52. The NESPF restricts plantation forestry activities that disturb perennial (permanent) river or lake beds, or wetlands when fish are spawning within sites mapped in the NESPF Fish Spawning Indicator. Regarding salmon spawning sites, forestry activities are restricted in the vicinity of Group A NESPF Fish Spawning Indicator sites during 1 April to 31 September for Chinook salmon and 1 March to 30 June for sockeye salmon. In comparison, the CLWRP restricts activities that may damage or destroy Schedule 17 salmon spawning sites year-round. I consider that only restricting harvesting and other plantation forestry activities during the NESPF Fish Spawning Indicator salmon spawning season does not protect the habitat from the prolonged effects of sediment loss after harvesting is completed.

3.53. Furthermore, some CLWRP Schedule 17 salmon spawning sites do not overlap with NESPF Fish Spawning Indicator sites, meaning there is a relatively large gap in the protection of salmon spawning areas in Canterbury from the effects of production forestry activities.

3.54. Given the above, I agree with Fish & Game that it would be appropriate to add a new condition to Rule 5.189 that restricts plantation forestry activities if within a Schedule 17 salmon spawning site. However, I do not consider there is a need to specify ‘harvesting’ in the rule descriptors because harvesting, pruning and thinning to waste are sufficiently captured under the term ‘clearance of vegetation’ in the PC7 rules.

---

320 PC7-193.13
321 Section 44A of the RMA requires local authorities to amend plans to remove any conflict or duplication with an NES. The changes proposed through Part A of PC7 will result in some conflict or duplication in the content of Rules 5.137, 5.148, 5.163, 5.167, 5.168, 5.169, 5.170, 5.171 and 5.175. PC7 does not propose amendments to address that conflict through this planning process. Once PC7 is made operative, Environment Canterbury will make consequential amendments to the identified rules to remove conflict or duplication without using the Schedule 1 process, as required by section 44A.
322 PC7-351.22
323 Jarred Arthur, Environment Canterbury Scientist.
Recommendation

3.55. Amend PC7 Rules 5.189 and 5.190 to add consideration of Schedule 17 salmon spawning sites and to improve readability, as shown in Appendix E.

[324] Fish & Game (PC7-351.22)
4. Ngāi Tahu values

Introduction and Provisions

4.1. This section of the report discusses the amendments to the CLWRP proposed in Part A of PC7 to improve the consideration of potential adverse effects on Ngāi Tahu values.

4.2. The wording of some restricted discretionary rules in the CLWRP impedes Environment Canterbury’s ability to consider effects on Ngāi Tahu values and sites of significance to Ngāi Tahu, including wāhi tapu and wāhi taonga. Part A of PC7 proposes new matters of discretion for 23 restricted discretionary activity rules in the Section 5 of the CLWRP to improve the recognition of Ngāi Tahu cultural and customary activities and values. The relevant rules are Rules 5.9, 5.11, 5.13, 5.17, 5.19, 5.26, 5.28, 5.36, 5.40, 5.110, 5.115, 5.117, 5.120, 5.123, 5.126, 5.128, 5.36, 5.161, 5.164, 5.176, 5.178, 5.180.

4.3. The proposed wording of the matters of discretion has been informed by advice from three iwi entities: Mahaanui Kurataiao, Aukaha and Aoraki Environmental Consultancy on behalf of their rūnanga. As an example, PC7 proposes matter of discretion (7) to Rule 5.36 discharge of animal effluent as follows:

Any adverse effects on Ngāi Tahu values or on sites of significance to Ngāi Tahu, including wāhi tapu and wāhi taonga.

4.4. The submissions relating to these provisions have been grouped into and considered according to the following topics:

- Supporting submissions; and
- Submissions seeking deletions or amendments

Supporting Submissions

4.5. Ngā Rūnanga, CCC and DOC support all proposed matters of discretion and seek the provisions are retained as notified. Arowhenua and Te Rūnanga support some of the proposed amendments but have not specifically submitted on all rules proposed to be changed.

4.6. Ngā Rūnanga state that the inclusion of the matters of discretion “facilitates the protection of wāhi tapu, wāhi taonga and the recognition of katiakitanga, mauri and mahinga kai with regards to freshwater.”

325 This section is authored by Andrea Richardson.
326 PC7-423.24, PC7-423.25, PC7-423.26, PC7-423.27, PC7-423.28, PC7-423.29, PC7-423.30, PC7-423.31, PC7-423.32, PC7-423.40, PC7-423.41, PC7-423.42, PC7-423.43, PC7-423.48, PC7-423.59, PC7-423.60, PC7-423.63, PC7-423.64, PC7-423.65.
327 PC7-337.15, PC7-337.16, PC7-337.18, PC7-337.20, PC7-337.21, PC7-337.22, PC7-337.24, PC7-337.27, PC7-337.29, PC7-337.30, PC7-337.49, PC7-337.52, PC7-337.53, PC7-337.54, PC7-337.55, PC7-337.56, PC7-337.57, PC7-337.58, PC7-337.73, PC7-337.75, PC7-337.80, PC7-337.82, PC7-337.83.
329 PC7-424.47, PC7-424.49, PC7-424.51, PC7-424.53, PC7-424.55, PC7-424.56, PC7-424.61, PC7-424.66, PC7-424.69, PC7-424.94, PC7-424.175
4.7. Several other submitters including HortNZ\textsuperscript{330}, Cashmere Stream Care Group\textsuperscript{331} and H Iles\textsuperscript{332} support specifically identified rules where the matter of discretion is proposed. For example, Beef + Lamb\textsuperscript{333} support the new matters of discretion for Rules 5.11, 5.17 and 5.19 but seek amendments for other rules.

**Submissions seeking amendments**

**Submissions**

4.8. Beef + Lamb supports the principle of the proposed new matters of discretion but have raised concerns in relation to specific rules, where the changes may affect existing activities\textsuperscript{334}. Beef + Lamb states that more clarity is required to help land users with existing activities to understand what the new matters of discretion mean for them, if anything.

4.9. Federated Farmers\textsuperscript{335} opposes the changes and seeks all proposed matters of discretion are deleted. Federated Farmers states that there needs to be greater clarity about the consequences of the provisions. Specifically, Federated Farmers seeks greater information on how Ngāi Tahu areas/values are to be assessed, identified and notified to affected land owners, and what any cost implications are. Federated Farmers states there needs to be widespread discussion with land owners and managers of affected land.

4.10. Arowhenua and Te Rūnanga request additional matters of discretion for several rules, to apply to the OTOP sub-region rules, to provide for the assessment of adverse effects on the Rock Art Management Areas\textsuperscript{336} and Mātaitai Reserve areas\textsuperscript{337} mapped within the OTOP zone.

4.11. Timaru DC\textsuperscript{338} seeks changes to the matter of discretion for several rules to specify listed or mapped Ngāi Tahu values or sites. Timaru DC also subsequently seeks that if its proposed amendments are accepted, further clarity regarding how sites will be identified or mapped is required.

4.12. Road Metals Company\textsuperscript{339} opposes the additional matter of discretion to Rule 5.178 and states that amendments fail to meet Part 2 of the RMA and are not effects based.

4.13. Pareora Catchment Society\textsuperscript{340} and Waimate DC\textsuperscript{341} seek amendments to PC7 to define terms such as nohoanga, wāhi tapu and mauri, and to map sites of significance to Ngāi Tahu using reliable information backed by historical data to ensure that resource consent applications are

\textsuperscript{330} PC7-356.24, PC7-356.27
\textsuperscript{331} PC7-193.9
\textsuperscript{332} PC7-310.18, PC7-310.19, PC7-310.20
\textsuperscript{333} PC7-214.23, PC7-214.28, PC7-214.29
\textsuperscript{335} PC7-430.292, PC7-430.293, PC7-430.294, PC7-430.295, PC7-430.296, PC7-430.297, PC7-430.298, PC7-430.299, PC7-430.300, PC7-430.301, PC7-430.302, PC7-430.303, PC7-430.304, PC7-430.305, PC7-430.306, PC7-430.307, PC7-430.308, PC7-430.309, PC7-430.310, PC7-430.311, PC7-430.312, PC7-430.313, PC7-430.314.
\textsuperscript{336} PC7-424.57, PC7-424.92, PC7-424.94, PC7-424.97, PC7-424.99, PC7-424.117, PC7-424.119.
\textsuperscript{337} PC7-424.166, PC7-424.168, PC7-424.171, PC7-424.173.
\textsuperscript{338} PC7-292.19, PC7-292.21, PC7-292.23, PC7-292.138, PC7-292.139, PC7-292.140
\textsuperscript{339} PC7-480.4
\textsuperscript{340} PC7-108.5
\textsuperscript{341} PC7-279.7
not impeded. The submitters also raise concerns about the cost of consent applications and protection measures (e.g. fencing) associated with these sites where located on private property, and seek negotiation with iwi, other stakeholders and landowners over these costs and other matters on a case by case basis.

Analysis

4.14. The purpose of the amendments is to better recognise and provide for the relationship of Ngāi Tahu with their ancestral lands, water sites, wāhi tapu and wāhi taonga as required under Section 6(e) of the RMA and to give effect to higher order documents. Without these matters of discretion, the ability to consider potential adverse effects on Ngāi Tahu cultural values is constrained for many restricted discretionary activities.

4.15. The consideration of the potential effects on cultural values and traditions or culturally significant sites is not a new requirement and there is already guidance and direction included in the CLWRP for discharge consent applications. While the current CLWRP or Part A of PC7 does not specifically identify or map all sites of significance to Ngāi Tahu,

4.16. Policy 4.14B states:

> Have regard to Ngāi Tahu values, and in particular those expressed within an iwi management plan, when considering applications for discharges which may adversely affect statutory acknowledgement areas, nohoanga sites, surface waterbodies, silent file areas, culturally significant sites, Heritage New Zealand sites, any listed archaeological sites, and cultural landscapes, identified in this Plan, any relevant district plan, or in any iwi management plan.

4.17. Section 1.3.1: Key Partnerships of the CLWRP briefly outlines the Ngāi Tahu framework for managing natural resources and relevant terms such as ‘mauri’, ‘wāhi tapu’, ‘wāhi taonga’ and ‘nohoanga’.

4.18. In addition, Schedules 18, 19, 20 and 21 of the CLWRP include helpful information. Schedule 18 describes the 10 rūnanga of the Canterbury Region and different instruments from the Ngāi Tahu Claims Settlement Act 1998 relevant to the CLWRP. Schedule 19 lists the Ngāi Tahu Statutory Acknowledgement Areas including their purpose and how they relate to resource consent applications. Schedule 20 details Tōpuni (landscape features of special importance or value to Ngāi Tahu) and Schedule 21 lists nohoanga sites.

4.19. The consideration of potential adverse effects on Ngāi Tahu values and significant sites will vary depending on the nature of each particular activity and consent application. I consider the CLWRP and iwi management plans provide adequate direction to understand Ngāi Tahu values and their possible concerns with individual proposals. In addition, some sites of Ngāi Tahu cultural significance may be scheduled and/or mapped in the CLWRP and District Plans.

4.20. With this in mind, I recommend amendments to the matter wording in all rules to specify that Ngāi Tahu values and sites of significance are those identified in the CLWRP, iwi management plans, and District Plans for the Canterbury region to provide further clarity to submitters regarding how sites and values will be identified or mapped.

---

342 Objective D1 and Policy D1 of the NPSFM and Chapter 4 of the CRPS.
343 For example, as described in section 1.2.13: Sites of Ngāi Tahu Cultural Significance, in the Christchurch Replacement District Plan.
4.21. Retaining the new matters of discretion, regardless of the proposed changes mentioned above, is necessary to better comply with Section 6 of the RMA. Therefore, I do not agree with Federated Farmers’ request to delete the provisions or Road Metals Company’s submission that the provisions fail to meet Part 2.

4.22. I also recommend amending Policy 4.14B of the CLWRP to refer to “applications for resource consents” rather than “applications for discharges” to improve clarity for plan users with regards to determining Ngāi Tahu values and sites of significance. Mention of the requirement to have regard to “sites of significance to Ngāi Tahu” in this policy would also provide consistency with the PC7 matter of discretion. Policy 4.14B is not amended by PC7 and so this amendment would be as a consequence of the submissions seeking greater clarity about how Ngāi Tahu values and sites of significance are to be assessed.

4.23. In response to Beef + Lamb’s concerns regarding how the amendments would impact existing activities, as the proposed changes only insert additional matters of discretion there would not be any immediate impact on existing land uses, water takes or discharges, including where resource consents have been granted. The proposed changes would allow future consideration of the potential effects on Ngāi Tahu values including wāhi tapu and wāhi taonga for new activities or when consents are renewed. Because of this, I do not consider any relief is necessary to provide for existing activities.

4.24. In relation to the Arowhenua and Te Rūnanga submission, Part B of PC7 introduces a new layer in the planning maps that identifies Mātaitai Protection Zones and Rock Art Management Areas in Section 14 (OTOP) of the CLWRP. The architecture of the plan is such that where minor amendments to the sub-region wide rules are necessary to reflect particular resource management issues in a sub-region zone, these matters are achieved through provisions in the particular sub-region section. However, rock art and mātaitai reserves are located in a number of other areas in the Canterbury region, as described in the sub-regional sections and Schedules 19 and 20 of the CLWRP, and therefore consideration of these areas throughout Canterbury is appropriate in a resource consent process. I consider that the new matter provides for consideration of mātaitai reserves and rock art sites in a resource consent process.

**Recommendation**

4.25. Amend the PC7 matter wording to specify that Ngāi Tahu values and sites of significance are those identified in the CLWRP, iwi management plans, and District Plans for the Canterbury region.

4.26. As a consequence, amend Policy 4.14B of the CLWRP to refer to “applications for resource consents” rather than “applications for discharges” and also require regard to be had to Ngāi Tahu sites of significance.

---

344 For example, Timaru DC (PC7-292.19, PC7-292.21, PC7-292.23, PC7-292.138, PC7-292.139, PC7-292.140); Pareora Catchment Society (PC7-108.5)
345 Timaru DC (PC7-292.19, PC7-292.138, PC7-292.21, PC7-292.139, PC7-292.23, PC7-292.140)
346 Timaru DC (PC7-292.19, PC7-292.138, PC7-292.21, PC7-292.139, PC7-292.23, PC7-292.140)
5. **Habitats of indigenous freshwater species**\(^{347}\)

**Introduction**

5.1. This section of the report discusses the amendments to the CLWRP proposed in Part A of PC7 to prevent the loss of the quality and quantity of the mapped ‘Indigenous Freshwater Species Habitats’ and indigenous biodiversity more generally.

5.2. Aquatic habitats in Canterbury support a range of indigenous freshwater fish and invertebrate species including a number that are rare and/or threatened. The aquatic habitats of these species are under pressure due to activities causing habitat loss or degradation, barriers to fish passage, and water quality and quantity issues.

5.3. PC7 introduces a new definition of ‘Indigenous Freshwater Species Habitat’ and accompanying planning map layer in the CLWRP Planning Maps. The definition lists 11 threatened indigenous freshwater fish and invertebrates, and describes the location of their habitat in rivers and lakes in the Canterbury region. The PC7 map layer ‘Indigenous Freshwater Species Habitat’ is the discrete critical habitat of these eleven listed species.

5.4. PC7 also introduces Policies 4.61A and 4.101 and amends Policy 4.31, which provide direction for activities that may impact on these mapped ‘Indigenous Freshwater Species Habitat’ areas. PC7 introduces new conditions into 13 existing permitted activity rules that restrict activities proposed within or adjacent to these habitats, meaning consent will be required. In addition, PC7 amends the existing stock exclusion Rule 5.71 to prohibit farmed cattle, deer and pigs from an ‘Indigenous Freshwater Species Habitat’, and restricts plantation forestry activities within or adjacent to these habitats (PC7 Rule 5.189).

5.5. These provisions are informed by two Section 32 Report supporting technical documents; “Critical habitat for Canterbury freshwater fish, koura/kekewai and kakahi”\(^{348}\), and “Prioritisation of native aquatic species habitat for protection under the LWRP Omnibus plan change”\(^{349}\).

5.6. The package of provisions for this PC7 topic also introduces provisions to assist maintaining indigenous freshwater biological diversity more generally, and include a new policy regarding fish passage, amendments to rules for structures, diversions and sediment discharges, and new matters of discretion in rules for water abstraction. This part of the plan change is informed by two Section 32 Report supporting technical memorandums: “Cumulative aquatic habitat loss, a step change in biodiversity and the case for legislative change”\(^{350}\), and “Ecological impacts of braid diversion”\(^{351}\).

---

\(^{347}\) The planning author for this section is Andrea Richardson and the technical author is Duncan Gray.


5.7. The relevant PC7 provisions which reference ‘Indigenous Freshwater Species Habitat’ are:

- A new definition of ‘Indigenous Freshwater Species Habitat’
- New Planning Map layer for ‘Indigenous Freshwater Species Habitat’
- New Policies 4.61A and 4.101
- Amendment to Policy 4.31
- Condition in new plantation forestry Rule 5.189

5.8. The relevant PC7 provisions which introduces new restrictions on activities for the purpose of maintaining indigenous biological diversity are:

- New Policy 4.102
- Amendment to Policy 4.47
- New ‘drop-out’ Rule 5.152A
- Deletion of ‘drop-out’ Rule 5.153

5.9. These changes are important for achieving the objectives of the CLWRP and for better giving effect to the direction in the CRPS. Collectively, they seek to maintain indigenous biological diversity and better protect the habitats of threatened indigenous freshwater species from damage or loss.

5.10. Some of the PC7 rule amendments relate to both the mapped Indigenous Freshwater Species Habitats and indigenous biodiversity more generally. Submissions on the new plantation forestry Rule 5.189 in relation to Indigenous Freshwater Species Habitats (i.e. PC7 condition (4) of Rule 5.189) are discussed in this section of the report. All other submissions on the PC7 plantation forestry rules are discussed in the ‘National Environmental Standards for Plantation Forestry’ section of this report. Similarly, this section covers submissions on the ‘defences against water’ Rule 5.138 in relation to Indigenous Freshwater Species Habitats, and any other submissions on this rule are discussed in the ‘Minor Topics: River Engineering’ section of this report.

5.11. The provisions attracted many submissions, which have been grouped into and considered according to the following themes:

- General submissions on ‘Indigenous Freshwater Species Habitat’ provisions
- Extent and accuracy of the Planning Map layer ‘Indigenous Freshwater Species Habitat’
- The definition of Indigenous Freshwater Species Habitat
- Policy 4.61A and 4.101: Offsetting damage or loss of Indigenous Freshwater Species Habitat
- Stock Exclusion from Indigenous Freshwater Species Habitat
- Impacts on hydro-electricity generation infrastructure and activities
- Policy 4.102: Safe passage of indigenous fish
- Policy 4.47: Small scale diversion of water
- Rules 5.141 and 5.152: Sediment discharges
- Rules 5.140 and 5.151: Ecological impacts of diversions
- Rules 5.115 and 5.120: New matters of discretion

352 Rules 5.137, 5.138, 5.140, 5.141, 5.148, 5.151 and 5.152
• Other activities that may result in damage to or loss of indigenous freshwater biodiversity

General submissions on ‘Indigenous Freshwater Species Habitat’ provisions

Submissions

5.12. Approximately 45 submitters\(^{353}\) indicate their overall support\(^{354}\) of the PC7 provisions which provide greater restrictions on activities within and adjacent to mapped Indigenous Freshwater Species Habitat. The predominant reason is a desire to prevent further loss of threatened indigenous species and their habitats.

5.13. Nine submitters, including Federated Farmers\(^{355}\), Ellesmere Sustainable Agriculture\(^{356}\), Ashburton River Irrigators\(^{357}\) and Greenstreet Irrigation Society\(^{358}\) seek the deletion of the definition of Indigenous Freshwater Species Habitat and the associated provisions and planning map layer, querying the accuracy of the mapping, uncertainty of the species at these locations, and the need for a thorough analysis and discussion (especially with land owners and managers) about the habitat mapping and their implications, in particular any economic impacts.

5.14. Rayonier NZ and Port Blakely\(^{359}\) raises concerns that the Indigenous Freshwater Species Habitat restrictions will cause unnecessary time, cost and delay for foresters, and state that there is no justification for the default activity status of fully discretionary.

5.15. DOC\(^{360}\) seeks that the new restrictions associated with mapped Indigenous Freshwater Species Habitat are also applied to permitted activity Rule 5.119, which refers to the taking and discharging of water for dewatering purposes.

5.16. Many other submitters seek amendments to the PC7 provisions which provide greater restrictions on activities within and adjacent to mapped Indigenous Freshwater Species Habitat. The issues raised in these submissions are discussed in the following sections of this report.

Analysis

5.17. In our opinion, the technical report and memorandum that supported the Section 32 Report is the most up to date available and the science has been independently peer reviewed. Furthermore, this plan change process, including the availability of technical and planning reports, public submissions and a hearing, enables the public to discuss, assess and consider the mapping of indigenous freshwater species habitat and the implications for plan users.

\(^{353}\) For example; Avon-Otakaro Network (PC7-91.2), C Christensen (PC7-321.21), S Michael (PC7-147.22), J Barnes (PC7-461.22)

\(^{354}\) Submissions are recorded in the SoDR under the common theme ‘Habitats of Indigenous Species’ and are in addition to submissions on specific PC7 provisions.

\(^{355}\) PC7-430.4, PC7-430.8, PC7-430.31

\(^{356}\) PC7-207.3, PC7-207.4, PC7-207.12, PC7-207.11, PC7-207.20

\(^{357}\) PC7-343.5, PC7-343.7, PC7-343.30

\(^{358}\) PC7-312.6, PC7-312.8, PC7-312.35

\(^{359}\) PC7-224.6, PC7-312.10

\(^{360}\) PC7-160.15
Submissions on the accuracy of the habitat mapping is discussed in the following section of this report.

5.18. In response to Rayonier NZ and Port Blakely, in our opinion, a default activity status of fully discretionary for the PC7 rules (including plantation forestry Rule 5.190) if the activity occurs within an Indigenous Freshwater Species Habitat is appropriate as the rules manage several types of activities, such as disturbance of the bed, deposition of material on the bed, installation of structures and discharges of sediment, and accordingly the effects of the activities are so variable that it is not possible to prescribe standards to control them in advance.

5.19. In response to the submission from DOC, I consider it is appropriate to add a new permitted activity condition into Rule 5.119 that restricts dewatering activities in or adjacent to an Indigenous Freshwater Species Habitat as this would implement the policy direction of PC7 Policy 4.61A. Accordingly, I recommend that this relief is accepted.

Recommendation

5.20. Introduce a new condition into Rule 5.119 that restricts activities in or adjacent to an Indigenous Freshwater Species Habitat. 361

Extent and accuracy of the Planning Map layer Indigenous Freshwater Species Habitat

Accuracy of the Planning Map layer

Submissions

5.21. DOC362, Rooney Earthmoving363 and Trustpower364 raise concerns about the mapping accuracy of the ‘Indigenous Freshwater Species Habitat’ map layer. DOC states there are discrepancies between the freshwater fish distribution data provided by DOC to Environment Canterbury (during PC7 research and development) and the data presented in the CLWRP Planning Maps, stating that the process of removing artificial water bodies from the dataset has been inconsistently applied.

5.22. Selwyn DC365 considers that some mapped habitats are in artificial watercourses which are no longer operational and have been closed and as such are unlikely to support Indigenous Freshwater Species Habitat. The submitter seeks that the location of the mapped habitats are developed in discussion with territorial authorities to improve accuracy.

5.23. DOC366 requests that the provisions include a path by which the planning maps can be updated and/or consent applications to be assessed if site specific information becomes available that identifies new habitat sites or better identifies or delineates an existing mapped site.

---

361 DOC (PC7-160.15)
362 PC7-160.1
363 PC7-392.4
364 PC7-156.17
365 PC7-300.4, PC7-300.5
366 PC7-160.38
5.24. Isaac Conservation and Wildlife Trust\(^{367}\) agrees with the accuracy of the ‘Indigenous Freshwater Species Habitat’ layer mapping of mudfish habitat within the northern and eastern parts of its property (Lot 1 DP 36807, Lot 1 DP 34362 and Lot 1 DP 21725). However, the submitter seeks that the mapped habitat site be deleted because it introduces potential additional costs and restrictions if it decides to relocate the mudfish colonies due to inadequate water quality and/or quantity.

5.25. Meridian\(^{368}\) and H Iles\(^{369}\) seek that the definition and/or maps are amended to specify that the mapped habitat areas will include information of the species located within the area to inform resource consent applications.

5.26. Ngā Runanga\(^{370}\) raises concerns that the mapped sites are very specific, short in length and isolated from other areas, and do not reflect the extent of habitat that some species need to survive. It seeks that the mapping is extended to include the habitat required for their entire lifecycle, and that the provisions not only protect the mapped sites but also manage the land and water use activities up and downstream that may affect them. The submitter emphasises that this ki uta ki tai approach reflects the interconnectedness of land, water and resources, as required by the NPSFM.

**Analysis**

5.27. We note that the freshwater fish distribution data provided by DOC included freshwater fish habitats in artificial watercourses\(^{371}\), but habitats in artificial watercourses were deliberately removed from the PC7 map layer to ensure there are no overlaps with local authority responsibilities specified in the RPS. Habitats in modified watercourses, often colloquially referred to as drains, are included in the PC7 map layer. If the artificial component of flow in the water body, such as stock water, has been closed off and there is still water in the water body, then the mapped habitat is within a modified watercourse and the section 13 RMA rules apply. We request Selwyn DC provides more specific details on the mapped habitats of concern so that their submission can be fully responded to.

5.28. The habitat extents of indigenous fish species listed in the definition have been mapped using GIS layers supplied by DOC and derived from the method of Dunn (2017)\(^{372}\). These GIS layers were provided to Environment Canterbury in 2019 and included additional taxa (shortjaw kōkopu and giant kōkopu) from that discussed in Dunn (2017). Dunn (2017) used the River Environment Classification database to assist mapping fish distributions, which provides a modelled stream network for New Zealand.

5.29. In response to submissions on the habitat mapping accuracy, I consider that while the River Environment Classification database provides an excellent representation of stream networks in hill country, it is less accurate on flat ground particularly where streams are groundwater fed. Also, braided rivers by nature move across their braidplain over time, and therefore the

\(^{367}\) PC7-371.2
\(^{368}\) PC7-346.3
\(^{369}\) PC7-310.9
\(^{370}\) PC7-423.81, PC7-423.82
\(^{371}\) As defined in the CLWRP: Artificial watercourse means a watercourse that is created by human action. It includes an irrigation canal, water supply race, canal for the supply of water for electricity power generation, and farm drainage canal channel. It does not include artificial swales, kerb and chanelling or other watercourses designed to convey stormwater.
area of the indigenous freshwater species habitat may differ to the mapped polygons. Therefore, to improve the accuracy and implementation of mapped habitats in braided rivers at a local scale (i.e. when zoomed in on the GIS database Canterbury Maps), it is recommended that all habitats located in a river (braided or otherwise) are converted from a polygon to a line, based on recent high resolution aerial photos. Specifically;

- Stream polygons are converted to lines to avoid confusion over the width of area where the rule applies.
- Stream reaches are re-aligned to match the waterbodies using the most recent aerial photo images.
- Stream reaches are removed if aerial photos revealed there was no stream at that location.
- Sections of river/stream reaches in the GIS layers supplied by DOC that have no associated evidence of species occurrence or habitat are removed.
- River/stream reaches are removed if they are located outside of the Canterbury region, e.g. Marlborough.
- Multiple lines within a single river reach of a braided river are changed to a single river line to indicate that it is the reach of the river to be protected rather than a specific channel within the riverbed.

5.30. Associated with the recommended amendment of the river-based habitats from polygons to lines, there also needs to be a narrative setback from this river line to define the area of habitat. It is recommended that the setback is measured from ‘any surface water’ as some of the indigenous fish listed in the definition are often in pools or wetlands on the sides of the river rather than in the obvious flowing water.

5.31. Additionally, I recommend that the “Indigenous Freshwater Species Habitat” definition is amended to specify that a habitat in a river is the area within the upstream and downstream extents of the mapped river line that is within ten metres of any surface water. The definition would also clarify that habitats in lakes are mapped as an area in the planning maps.

5.32. I agree in part with the submission from DOC regarding the ability to use the most up to date site specific habitat information to better identify or delineate an existing mapped habitat site, but this is only considered appropriate in a resource consent application process (i.e. not to determine a permitted activity status). An amendment to the PC7 provisions to respond to this submission is not considered to be required as such an assessment is intrinsic in the consideration of a resource consent application. I do not agree with the submitter that the provisions should include a path that enables changes to the existing PC7 map layer or the addition of new habitats outside of a plan change process as this would inappropriately enable expansion of the plan restrictions without public participation.

5.33. I acknowledge the environmental benefits of the work that Isaac Conservation and Wildlife Trust has undertaken with DOC to establish and manage the colonies of Canterbury Mudfish, as outlined in its submission. However, to provide certainty that any activities that may damage or destroy these mudfish habitats will be appropriately managed under the CLWRP, I recommend that the site is not deleted. For example, the activity may be the future abstraction of groundwater on an adjacent property - if the habitat is not mapped, the consent applicant may not be aware that the abstraction could reduce the area of the habitat.

5.34. I agree with Meridian and H Iles that it would be helpful for each mapped habitat to specify which indigenous freshwater species was recorded within the mapped habitat. I consider it would be most useful for plan users if this information is recorded as metadata for the map
layer in the GIS database ‘Canterbury Maps’\(^{373}\) rather than in the CLWRP due to the lengthiness of a Schedule containing this information. This metadata could be added to the PC7 habitat layer in ‘Canterbury Maps’ once PC7 is made operative.

5.35. In response to Ngā Runanga, I note that in addition to the specific restrictions on activities within and adjacent to the mapped habitats of 11 threatened indigenous freshwater species, PC7 introduces restrictions for temporary structures, diversions and sediment discharges to maintain indigenous biological diversity. This may partially address the submitters concerns. PC7 has neither mapped the locations/river reaches of the additional habitat areas sought by the submitter, nor assessed the cultural, economic, social and environmental implications of the restrictions on activities in these additional areas. On this basis, I recommend that this submission be rejected.

**Impacts on hydro-electricity generation infrastructure and activities**

**Submissions**

5.36. Meridian, Trustpower and Genesis oppose the Planning Map layer “Indigenous Freshwater Species Habitat’ in the vicinity of their hydro-electric power generation infrastructure and the associated maintenance activities. Meridian\(^{374}\) raises concerns about the nature and extent of habitat mapping in Lake Benmore and Lake Aviemore, and the potential impacts of the suite of provisions on the continued maintenance and operation of the nationally significant Waitaki Power Scheme. Trustpower\(^{375}\) seeks amendments to the map layer in the vicinity of their existing Coleridge Hydro-Electric Power Scheme infrastructure and the associated maintenance activities. In particular, the submitter requests a 40 metre buffer from Trustpower assets, and helpfully provides aerial imagery of its assets and the proposed boundary amendments to the PC7 habitat layer.

5.37. Genesis\(^ {376}\) also seeks the deletion of the mapping layer in the vicinity of its Tekapo Power Scheme infrastructure, or that provision is made in the rules that introduce restrictions on activities within and adjacent to Indigenous Freshwater Species Habitat, to ensure the associated restrictions do not impact on the associated operation, maintenance, upgrading and replacement activities. Genesis states that it is unclear how the new mapped habitats in the vicinity of Tekapo River, Tekapo Canal and Lake Benmore have accounted for the large hydrological fluctuations that are possible in the Tekapo River.

5.38. Genesis\(^ {377}\) seeks that Policy 4.61A does not apply to any abstraction relating to the operation, maintenance, upgrading or replacement of the Tekapo Power Scheme. Transpower\(^ {378}\) requests that the offsetting provision (clause (b) of Policy 4.61A) also applies to an application to take water for an existing hydro-electric power scheme.

**Analysis**

5.39. The NPSREG requires that regional councils recognise and provide for the national significance of renewable generation activities, but recognises that in some instances the benefits of

---

\(^{373}\) www.canterburymaps.govt.nz  
\(^{374}\) PC7-346.4  
\(^{375}\) PC7-156.9 to 156.15  
\(^{376}\) PC7-422.2, PC7-422.3, PC7-422.15, PC7-422.20, PC7-422.25, PC7-422.34  
\(^{377}\) PC7-422.7  
\(^{378}\) PC7-156.2
renewable electricity generation can compete with matters of national importance as set out in section 6 of the RMA\(^{379}\). Of relevance to this PC7 topic is the requirement in s6(c) of the RMA to recognise and provide for the protection of significant habitats of indigenous fauna.

5.40. I consider the most relevant policies in the NPSREG are:

- Policy C1(a) which requires particular regard to the “the need to locate the renewable electricity generation activity where the renewable energy resource is available”;
- Policy C1(b) which requires particular regard to the “logistical or technical practicalities associated with developing, upgrading, operating or maintaining the renewable electricity generation activity”;
- Policy C1(d) which requires particular regard to the “designing measures which allow operational requirements to complement and provide for mitigation opportunities”;
- Policy C2 which requires regard to offsetting measures or environmental compensation when considering any residual environmental effects that cannot be avoided, remedied or mitigated;
- Policy E2 which requires regional policy statements and regional and district plans to include provisions that provide for development, operation, maintenance and upgrading of new and existing hydro-electricity generation activities.

5.41. I agree with Meridian, Trustpower and Genesis that the restrictions associated with this definition and mapping should not impact on existing renewable generation infrastructure and associated operation and maintenance activities in the immediate vicinity of this infrastructure. Accordingly, high resolution aerial photos have been assessed and recommendations are made to amend the mapped habitat area to provide an at least 40 metre buffer from existing hydro-electricity generation structures and activity locations detailed in their submissions. This buffer should account for the hydrological fluctuations raised in the submission by Genesis. In forming this recommendation, I have considered the requirement in s6(c) of the RMA to recognise and provide for the protection of significant habitats of indigenous fauna and the Objectives of the CLWRP, but I consider the NPSREG (in particular the policies listed above) to be more directive in requiring recognition of the practical constraints associated with operating and maintaining the existing hydro-electricity generation infrastructure.

5.42. In response to Meridian’s request that the mapped habitats in Lakes Benmore and Aviemore are amended to only show the known locations of species, I note that the entire bed area of both lakes have been mapped as freshwater mussel/Kākahi may be widely distributed throughout the lakes. The approach of mapping an entire lake within which the listed species have been found (rather than a discrete area within the lake) is consistent with habitat mapping of any other lakes in Canterbury.

5.43. As previously discussed, recommendations are made to amend the mapped Indigenous Freshwater Species Habitat areas to provide an at least 40 metre buffer from existing hydro-electricity generation structures and activity locations in consideration of the directives of the NPSREG. In regard to the abstraction of water, Policy 4.51 directs that in recognition of their national benefits, existing hydro-electricity generation and their associated water takes, uses, damming, diverting and discharge of water are to be considered as part of the existing environment. On this basis, I do not consider that an amendment is required to Policy 4.61A.

\(^{379}\) NPSREG Preamble
Recommendation

5.44. Amend the Planning Map layer ‘Indigenous Freshwater Species Habitat’ to improve mapping certainty of the river habitats using the discussed methodology. In addition, provide an at least 40 metre buffer from all hydro-electric power generation infrastructure and the associated maintenance activities.

5.45. Amend the PC7 definition of ‘Indigenous Freshwater Species Habitat’ to define the area in relation to rivers and lakes, as shown in Appendix E.

The definition of ‘Indigenous Freshwater Species Habitat’

Provisions

5.46. The new definition ‘Indigenous Freshwater Species Habitat’ states:

**Indigenous Freshwater Species Habitat** means an area identified as ‘Indigenous Freshwater Species Habitat’ on the Planning Maps, and which provides habitat for at least one of the freshwater species listed below:

1. Giant kōkopu/Taiwharu (Galaxias argenteus)
2. Lowland longjaw galaxias (Waitaki) (Galaxias cobitinis)
3. Canterbury mudfish/Kōwaro (Neochanna burrowsius)
4. Bignose galaxias (Galaxias macronasus)
5. Upland longjaw galaxias (Galaxias prognathus)
6. Upland longjaw galaxias (Waitaki) (Galaxias prognathus)
7. Shortjaw kōkopu (Galaxias postvectis)
8. Northern flathead galaxias (Species N (undescribed))
9. Lamprey/Kanakana (Geotria australis)
10. Freshwater crayfish/Kekewai (Paranephrops zealandicus)
11. Freshwater mussel/Kākahi (Echyridella menziesi)

Submissions

5.47. Several submitters seek the expansion of the species listed in the definition or in the habitat mapping. Ngā Rūnanga 380 and Te Ngāi Tūāhuriri Rūnanga 381 support the provisions but seek the inclusion of taonga species, specifically longfin eel/tuna, short finned eel/tuna, flounder/pātiki and tuaki/cockles, which are not listed in the PC7 definition of ‘indigenous freshwater species habitat’. Similarly, CCC 382 consider that additional habitats may need to be included where community composition has a relatively high proportion of indigenous ‘at risk’ species such as longfin eels and inanga.

5.48. A Brown 383 requests that the habitats of indigenous plants and freshwater and reptile species in and by the Orari River are mapped to provide a measure of river ecology stability. Orari River Protection Group 384 also consider that the Orari River should be included in the mapping.

---

380 PC7-423.3, PC7-423.4, PC7-423.5, PC7-423.6, PC7-423.78
381 PC7-399.1, PC7-399.93, PC7-399.94
382 PC7-337.2
383 PC7-109.6
384 PC7-551.1
of habitats of threatened indigenous fish, stating that the river is home to the rare Blue Gilled Bully, Canterbury Galaxid, Tuna, and upland Bullies. I note that the prioritisation process (detailed below) to identify the species most in need of protection and suitable for the planning mechanisms available did not include those listed by A Brown. Therefore, no change to the mapped areas are recommended.

5.49. Forest & Bird\(^{385}\) strongly supports the intent of the provisions to provide stronger protection for indigenous freshwater species, stating that the loss of indigenous biodiversity and habitat for indigenous species is at a crisis point. However, the submitter is concerned that the list of species in the PC7 definition ‘Indigenous Freshwater Species Habitat’ is too limited and will not adequately protect the habitat of all indigenous freshwater species or restore ecosystem health. Forest & Bird seeks that the definition is broadened to include all indigenous freshwater fish and aquatic macro-invertebrates in Canterbury, as well as indigenous stygofauna. In addition, the submitter considers that the link to mapped habitats in the definition does not provide a holistic approach to ecological health of freshwater systems, notably the ethic of ki uta ki tai – from the mountains to the sea, and Te Mana o Te Wai.

5.50. Similarly, G Fenwick\(^{386}\) considers that the listed species should be broadened to include taonga species of plants, vertebrates and invertebrates that are endemic to Canterbury, and species with regional populations that are nationally significant, citing that many other species may be as much at risk as the fish species listed in the definition. The submitter suggests a solution would be to replace the term ‘Indigenous Freshwater Species Habitat’ with ‘Significant Habitat of Indigenous Biodiversity’ as this term is sufficiently broad and is used in the Canterbury Regional Policy Statement.

5.51. As One Inc\(^{387}\) seeks that the definition and mapping be amended to explicitly exclude habitats of freshwater mussels/kākahi in artificial waterways, stating that this species is present throughout the Waimakariri stock water system.

5.52. Meridian\(^{388}\) considers that only species listed as nationally critical, endangered or vulnerable should be listed in the definition (i.e. those categorised by national threat status as “Group 1” in the supporting technical memorandum), and that the “Group 2” species should be treated differently. Meridian states that giant kōkopu/Taiwharu, freshwater crayfish/Kekewai and freshwater mussel/Kākahi (i.e. those listed in Group 2) should be deleted from the definition and mapping as they have a lesser threat status and there is insufficient information about the mapping of habitat areas of these species.

5.53. DOC\(^{389}\) supports the intent of providing specific recognition of identified habitats of threatened and at risk indigenous freshwater species, stating the PC7 changes provide important recognition and improved protection of these habitats from land and water activities. However, they seek minor changes to the scientific names of four species as follows:

- Lowland longjaw galaxias (*Galaxias aff. cobitinis “Waitaki”*)
- Upland longjaw galaxias (*Canterbury, West Coast*) (*Galaxias prognathus*)
- Upland longjaw galaxias (*Galaxias aff. prognathus “Waitaki”*)
- Northern flathead galaxias (*Species N (undescribed) Galaxias “northern”*)

---

\(^{385}\) PC7-472.4, PC7-472.5, PC7-425.6, PC7-472.7, PC7-472.8, PC7-472.9
\(^{386}\) PC7-339.2
\(^{387}\) PC7-387.16
\(^{388}\) PC7-346.1
\(^{389}\) PC7-160.1
5.54. Beef + Lamb\textsuperscript{390} seeks that the definition is amended to specify that within each habitat, the presence of the listed species has been confirmed by a suitably qualified and experienced practitioner. If this relief is not provided, the submitter seeks the deletion of Policies 4.61A and 4.101.

5.55. DOC\textsuperscript{391} and Ngā Rūnanga\textsuperscript{392} consider that the definition of ‘Indigenous Freshwater Species Habitat’ should be amended to delete the word ‘and’ after the comma in the first sentence, as they are concerned it could be interpreted as meaning that there are two steps to meeting this definition: one requiring the area to be one of the mapped areas of Indigenous Freshwater Species Habitat, and two that the area provides habitat for one of the species listed.

**Analysis**

5.56. The supporting technical memorandum “Prioritisation of native aquatic species habitat for protection under the LWRP Omnibus plan change” details a prioritisation process undertaken to establish the list of 11 threatened and at risk indigenous freshwater species whose habitats are in particular need of protection. The species prioritisation process is based on the species’ threat status, life history and habitat distribution. The species’ threat status was informed by several larger scale threat status assessments, including the IUCN red list and the New Zealand national threat status provided by DOC and the regional fish threat status.

5.57. In response to the submission from Ngā Rūnanga, Te Ngāi Tūāhuriri Rūnanga and CCC, I consider that the addition of new habitats into the Planning Maps to cover their entire lifecycle would improve the protection of these threatened species, but requires additional mapping and an assessment of the cultural, economic, social and environmental implications of the associated restrictions on activities in these areas, which have not been undertaken in PC7. PC7 provides plan user certainty of an activity meeting the PC7 rule condition regarding an ‘Indigenous Freshwater Species Habitat’ by mapping these habitats. Therefore, no additional species and their freshwater habitats are recommended for inclusion in the definition and map layer.

5.58. In regard to changing the term ‘Indigenous Freshwater Species Habitat’ to a broader term such as “Significant Habitat of Indigenous Biodiversity” which is defined in the CRPS, I note that this PC7 topic is not intended to identify all indigenous freshwater habitats that meet the CRPS significance criteria. The CRPS term “Significant Habitat of Indigenous Biodiversity” is intended to be broad because it relates across regional council and territorial authority functions.

5.59. However, we recognise that the term ‘Indigenous Freshwater Species Habitat’ could be construed to represent all aquatic habitat, and could therefore be much broader than the habitat of the 11 species listed in the definition. We suggest that the term “Critical Habitat of Threatened Indigenous Freshwater Species” is a more appropriate name for the mapped habitat layer. To clarify, the term “critical habitat” indicates the habitat critical to the lifecycle and survival of a species. The term “threatened species” means a species that has been determined to be at risk of extinction or is in significant decline within a country or region. A combination of national and regional threat status was used to determine a list of threatened species that have discrete and thus protectable critical habitats. To avoid confusion the term

\textsuperscript{390} PC7-214.4, PC7-214.14, PC7-214.18, PC7-214.47, PC7-214.11

\textsuperscript{391} PC7-160.1

\textsuperscript{392} PC7-423.2
Indigenous Freshwater Species Habitat’ will continue to be referred to in this Section 42A Report.  

5.60. We do not consider any amendments are required to satisfy the concerns raised by As One Inc as none of the mapped habitats of the threatened indigenous freshwater species are within artificial waterways.

5.61. Regarding the request from Meridian that ‘Group 2’ species are removed from the list, we note that although kōkopu/Taiwharu, freshwater crayfish/Kekeawai and freshwater mussel/Kākahi are classified as ‘at risk’ nationally, these species are considered threatened in Canterbury and less than 10% of their populations are protected within Public Conservation Land. Accordingly, it is considered that these species should be retained in the definition of ‘Indigenous Freshwater Species Habitat’. We consider that removing these Group 2 species would fail to give effect to the CRPS which requires the protection of significant indigenous biodiversity.

5.62. I consider that the minor changes to the species nomenclature suggested by DOC are appropriate. Note that aff. is taxonomic terminology that indicates that a proposed species is related to, or has affinity to, but is not identical to, the species with the binomial name that follows.

5.63. In response to Beef + Lamb seeking confirmation of the presence of the listed species within each habitat, I note that the PC7 provisions seek to protect the habitats of the listed species rather than where the species physically are at that moment in time. Habitat protection is particularly important for threatened, at risk and/or migratory species. The location of the mapped habitats was done based on the best available information.

5.64. I note that the italicising of the number 10 in the PC7 definition of ‘Indigenous Freshwater Species Habitat’ is a minor formatting error and a recommendation is made to amend the error under clause 16 of Schedule 1 of the RMA.

**Recommendation**

5.65. Amend the term ‘Indigenous Freshwater Species Habitat’ to ‘Critical Habitat of Threatened Indigenous Freshwater Species’ in all PC7 provisions.

5.66. Amend the PC7 definition of ‘Indigenous Freshwater Species Habitat’ as shown in the tracked changes version of PC7.

---

393 This paragraph is written by Andrea Richardson (Planner) and Duncan Gray (Scientist).
394 This paragraph is written by Andrea Richardson (Planner) and Duncan Gray (Scientist).
395 This paragraph is written by Andrea Richardson (Planner) and Duncan Gray (Scientist).
396 This paragraph is written by Duncan Gray (Scientist).
397 For the mapped indigenous fish habitats, the information was derived from the New Zealand Freshwater Fish database (a national database maintained by NIWA). Regarding the fish database, records are submitted by approved agencies, such as Crown Research Institutes, regional councils and universities, and vetted for approval by NIWA. For the mapped freshwater crayfish/Kekeawai and mussel/Kākahi habitats, an online survey of their distribution was undertaken by Environment Canterbury, and all survey information received was vetted by Environment Canterbury ecologist Duncan Gray, a suitably qualified and experienced practitioner.
Policies 4.61A and 4.101 - Offsetting damage or loss of Indigenous Freshwater Species Habitat

Provisions

5.67. Policies 4.61A and 4.101 support the offsetting of the loss of mapped Indigenous Freshwater Species Habitat with new habitat, where that loss is caused by water abstraction (clause (b) of Policy 4.61A) or by sediment discharges, vegetation clearance, excavation and deposition of material, or other disturbance in a surface water body (clause (b) of Policy 4.101).

5.68. The offsetting pathway described in Policy 4.61A is limited to community water supply take applications that have significant adverse effects on mapped ‘Indigenous Freshwater Species Habitat’. There are no such limitations in Policy 4.101.

Submissions

5.69. Twenty-one submissions were received on Policy 4.61A, with six in support seeking it is retained as notified, five seeking deletion of the policy, and the remaining 11 seeking amendments. Most submissions seeking amendments relate to the provision of offsetting (clause (b) of Policy 4.61A) or the impacts on hydro-electric power generation infrastructure which is discussed in the following section of this topic.

5.70. Twenty-seven submissions were received on Policy 4.101, with five in support seeking that the policy is retained as notified, five seeking deletion of the policy, and the remaining 17 seeking amendments.

Submissions on offsetting

5.71. Timaru DC\(^{398}\) supports the provision of an offsetting framework in Policies 4.61A and 4.101 where a community water supply consent application would significantly reduce the area or compromise the values of the Indigenous Freshwater Species Habitat, stating that this would help protect its interest in providing for community water supplies.

5.72. DairyNZ and Selwyn DC appear to support the concept of habitat offsetting, but seek amendments to the policies. DairyNZ\(^{399}\) consider the phrase “reduce the area or compromise the values” in clause (b) of Policy 4.61A is unclear and considers that reduction in habitat area on its own is a suitable proxy for compromised values of the mapped Indigenous Freshwater Species Habitat. Selwyn DC\(^{400}\) considers that the offset requirements in Policy 4.101 are unfairly restrictive to Territorial Authorities, in particular the requirement to offset in the same surface water catchment.

5.73. Trustpower\(^{401}\) considers that Policy 4.101 should state that activities should be managed to “minimise” rather than “avoid” the damage or loss of Indigenous Freshwater Species Habitat. The submitter states that this would enable activities that have positive effects on the environment, such as excavation of excess sediment of the removal of pest plant species to occur. Similarly, Meridian\(^{402}\) seeks that the term “avoid” is deleted from Policy 4.101, stating that the effect of the regulation proposed by the suite of Indigenous Freshwater Species

---

\(^{398}\) PC7-292.5, PC7-292.8

\(^{399}\) PC7-357.3

\(^{400}\) PC7-300.1

\(^{401}\) PC7-156.3

\(^{402}\) PC7-346.5
Habitat provisions is disproportionate to the issue being managed. Meridian also raises issues with regard to the Waitaki Power Scheme which is discussed in the previous section 5 sub-topic ‘Extent and accuracy of the Planning Map layer Indigenous Freshwater Species Habitat’ (paragraph 5.21 onwards).

5.74. Several submitters, including Ngā Runanga and WWHT, seek that the offsetting clauses in Policies 4.61A and 4.101 are amended to increase stringency and certainty of the requirements for offsetting. Ngā Runanga\(^{403}\) consider that damage or loss of habitat should only be allowed in exceptional circumstances given that the mapped sites are severely restricted in size and number, and a number of the species within them are rare and/or threatened. They consider that the policies should only allow offsetting if the habitat characteristics are improved, not just maintained, and raise concerns that the words “or mitigated” in Policy 4.101 negates the intent of the policy to avoid damage or loss. WWHT\(^{404}\) considers that the allowance for offsetting acceptable adverse effects should be a last resort, with prescribed multipliers of five or more times the affected habitat for habitat replacement, and governed by clear policy or guidelines on how acceptable offsets will be determined and maintained.

5.75. Ngā Runanga also states that it is not clear if Policy 4.101 is intended to provide for works within the mapped habitats or to activities which may affect these habitats.

5.76. WWHT\(^{405}\) and Forest & Bird\(^{406}\) consider that Policy 4.101 should also include nutrient discharges (in addition to sediment discharges). Although no specific reason is provided in their submissions against the policy, they raise broad concerns about environmental degradation of waterways and serious loss of aquatic wildlife, and the requirement to reduce nutrient pollution of waterways as one of a number of factors to adequately protect habitats of indigenous freshwater species.

5.77. Five submitters oppose the ability for consent applicants to mitigate or offset the loss of mapped ‘Indigenous Freshwater Species Habitat’ with new habitat under Policies 4.61A and 4.101. DOC\(^{407}\) is concerned that habitat creation for threatened species as an offset in the freshwater context is uncertain, and with regards to Policy 4.61A, consider that takes for community water supply should not be given priority over significant freshwater habitat values.

5.78. Canterbury Aoraki Conservation Board\(^{408}\) comments that natural freshwater ecosystem processes occur which support ecosystem functioning and health which cannot be re-created, and it is far better to protect and restore what remains than attempt to re-create new freshwater habitats. Forest & Bird\(^{409}\) states that offsetting of loss of stream habitat is not appropriate, and seeks that Policy 4.101 is amended to only provide for offsetting residual habitat loss and degradation. H Iles\(^{410}\) oppose the options to remedy, mitigate or offset habitat loss, stating that it would be extremely difficult to recreate a habitat with all of its macro and micro diversity. Styx Living Laboratory Trust\(^{411}\) states that “mitigation” will still

\(^{403}\) PC7-423.18, PC7423.22
\(^{404}\) PC7-88.36
\(^{405}\) PC7-88.37
\(^{406}\) PC7-472.40
\(^{407}\) PC7-160.105, PC7-160.8
\(^{408}\) PC7-138.12, PC7-138.3
\(^{409}\) PC7-472.28
\(^{410}\) PC7-310.12, PC7-310.25
\(^{411}\) PC7-205.6
allow effects on Indigenous Freshwater Species Habitat to occur, and offsetting will allow for
the destruction of valuable habitat and the created habitat would not necessarily exhibit the
same values as the natural habitat.

Analysis of submissions on offsetting

5.79. I agree that the success of creation or even restoration of stream systems (and the associated
freshwater species habitats) is generally uncertain and should be avoided as an offset except
as a very last resort. As discussed in the supporting technical memorandum “Cumulative
aquatic habitat loss, a step change in biodiversity and the case for legislative change” 412, if the
new (offset) stream channel will provide less habitat area and diversity than the existing
waterway affected by water abstraction, the result will be a net loss of ecological values. In
addition, even with the creation of a new habitat with equal habitat area and diversity there
remains considerable potential for the mortality of fish and macroinvertebrates during
original habitat decommissioning. There will also be addition of fine sediment to the new
stream channel (good erosion and sediment control practices may alleviate this) and the risk
of failure to recreate a comparable ecosystem. In terms of ecological value, total offsetting of
the impacts of the construction and healing phase will require the new stream channel to have
a greater habitat area and diversity than the old channel to overcome the losses and risk
associated with de-commissioning and construction.

5.80. In response to DairyNZ, the measures of habitat quality are broader than the wetted area, and
include the chemical and physical properties of the water, the quantity of water, and the
exchanges of energy and materials within and between the water body and its riparian area.
Accordingly, no change is recommended to address the submitter’s concerns.

5.81. Regarding the requirement to offset habitat loss within the same surface water catchment, I
consider that in principle this mechanism is appealing. However, in practice there have been
few, if any, successful attempts to recreate the habitats of these species at locations, within
the same or different catchments, where they do not currently exist. The threat status of
these species is such that no loss or degradation of existing habitat is sustainable and as such
the offset mechanism is not required.

5.82. I note that the provision in clause (b) of Policy 4.61A for community water supply takes to
offset any significant adverse effects on mapped ‘Indigenous Freshwater Species Habitat’ with
the creation of new habitat was in recognition of the need to supply community drinking
water, in particular Objective 3.8A of the CLWRP: High quality fresh water is available to meet
actual and reasonably foreseeable needs for community drinking water supplies, and
Objective 7.2.1 of the CRPS: Sustainable management of fresh water’ which states:

7.2.1 The region’s fresh water resources are sustainably managed to enable people and
communities to provide for their economic and social well-being through abstracting and/or
using water for irrigation, hydro-electricity generation and other economic activities, and for
recreational and amenity values, and any economic and social activities associated with those
values, providing:

1. the life-supporting capacity ecosystem processes, and indigenous species and their
associated freshwater ecosystems and mauri of the fresh water is safe-guarded;

412 Gray, D. Cumulative aquatic habitat loss, a step change in biodiversity and the case for legislative change.
2. the natural character values of wetlands, lakes and rivers and their margins are preserved and these areas are protected from inappropriate subdivision, use and development and where appropriate restored or enhanced; and

3. any actual or reasonably foreseeable requirements for community and stockwater supplies and customary uses, are provided for.

5.83. However, more weight may have been given to CLWRP Objective 3.8A and clause (3) of CRPS Objective 7.2.1 regarding community water supplies than was appropriate instead of considering and balancing all objectives together. Therefore, on consideration of the concerns raised by DOC and Canterbury Aoraki Conservation Board, the CLWRP freshwater objectives, and technical advice on the uncertainty of habitat offsetting and the significant implications on the critically threatened species listed in the definition, I agree that it is appropriate to delete the provision of offsetting habitat loss.

5.84. In response to Ngā Runanga seeking improved clarity in Policy 4.101, I do not consider that the policy needs to specify whether it applies to works within the mapped habitats or to activities which may affect these habitats, as the rules that implement this policy clearly set out the permitted activity threshold for activities that may impact on these habitats. With this in mind, I do not recommend amendments to the policy in response to this submission point.

5.85. I agree with WWHT that it is appropriate for Policy 4.101 to also include nutrient discharges as this would give effect to the objective 5D of Schedule 7: Farm Environment Plans which states “Animal effluent and solid animal waste is managed to minimise nutrient leaching and run-off”.

Policy 4.101: Additional matters raised in submissions

5.86. DOC\textsuperscript{413} considers that Policy 4.101 should be amended to also refer to disturbance “on the bed or banks” of a surface water body, as well as in a surface water body, to ensure the policy applies to the riparian margins as well as the bed of the surface water body.

5.87. I agree with DOC that Policy 4.101 should also refer to riparian margins, which is implemented by Rules 5.167, 5.168 and Rule 5.189.

5.88. Six submitters\textsuperscript{414} seek that the term “surface water body” in Policy 4.101 is amended to “river, wetland or lake” due to concerns that the broad definition surface water body includes artificial water courses, meaning that resource consents for works in and around artificial watercourses would have to consider effects on Indigenous Freshwater Species Habitat areas, even though no habitats have been mapped in artificial watercourses.

5.89. We recognise that the CLWRP definition of “surface water body” includes artificial watercourses and the CLWRP definition of “artificial watercourse” includes irrigation canals, water supply races and farm drainage channels which are often managed by territorial authorities. However, the PC7 ‘Indigenous Freshwater Species Habitat’ is only mapped in rivers (including modified natural watercourses) and lakes. The cumulative aquatic habitat loss in lowland streams is in part due to lack of certainty and agreement (on a consent by consent basis) as to whether the potentially affected watercourse is an “artificial drain” or a “modified natural watercourse”. This issue is fully discussed in the supporting technical memorandum “Cumulative aquatic habitat loss, a step change in biodiversity and the case for

\textsuperscript{413} PC7-160.8

\textsuperscript{414} For example; Waimakariri DC (PC7-3.8), Rangiora-Ashley Community Board (PC7-149.11)
“legislative change”. Therefore, to provide certainty for plan users that the mapped Indigenous Freshwater Species Habitat provisions apply even if the subject surface waterway is colloquially referred to as a ‘drain’, it is recommended that Policy 4.101 retains the term “surface water body” rather than “rivers, lakes and wetlands”.

5.90. J King\(^{415}\) seeks that Policy 4.101 directs the removal of “\textit{all exotic vegetation, particularly willows}” to improve the Indigenous Freshwater Species Habitat due to the adverse influence of such vegetation on river flows and generation of rotting leaf matter.

5.91. I am doubtful of the practicality and appropriateness of the relief sought by J King. There is uncertainty regarding who would be responsible for identification of the vegetation as being ‘exotic vegetation’ and then who must remove it. In the absence of an assessment of the implications, I recommend rejecting the relief.

**Recommendation**

5.92. Delete clause (b) of Policy 4.61A and clause (b) of Policy 4.101 to remove the references to offsetting habitat loss, as shown in Appendix E.

5.93. Amend Policy 4.101 to refer to the discharge of nutrients, and to the bed and riparian margins of surface water bodies.\(^{416}\)

5.94. Delete clause (a) of Policy 4.101 to remove the pathway for remedy or mitigation of habitat damage.\(^{417}\)

**Stock Exclusion from Indigenous Freshwater Species Habitat**

**Provisions**

5.95. PC7 amends Policy 4.31 to direct the exclusion of stock from any ‘Indigenous Freshwater Species Habitat’ to avoid damage, sedimentation, contamination and degradation of this aquatic habitat. This policy is implemented by Rule 5.71, as amended by PC7, which prohibits the use and disturbance of the bed and banks of a lake or river by any farmed cattle, deer or pigs and any associated discharge to water in any ‘Indigenous Freshwater Species Habitat’.

5.96. PC7 also amends clause (b) of Policy 4.31 and condition (2) of Rule 5.71 to specify that stock are prohibited from access to the bed and banks of lakes and rivers within the Community Drinking-water Protection Zone of a surface water intake. As a Community Drinking-water Protection Zone set out in Schedule 1 of the CLWRP includes both groundwater and surface water takes, the existing provisions may require stock to be excluded from the Protection Zone of a groundwater bore, but only where that Protection Zone intersects with the bed of a river or lake.

**Submissions**

5.97. Twenty submissions were received on Policy 4.31, comprising ten in support as notified, four opposing the references to ‘Indigenous Freshwater Species Habitat’, and the remaining six

---

\(^{415}\) PC7-522.1

\(^{416}\) DOC (PC7-160.8)

\(^{417}\) H Iles (PC7-310.12, PC7-310.25)
submissions seeking amendments. Of those seeking amendments, four support the ‘Indigenous Freshwater Species Habitat’ restrictions but seek additional circumstances for stock exclusion and clarity of terminology.

5.98. Fifty-nine submissions were received on Rule 5.71, of which 46 support the rule as notified, four oppose the references to ‘Indigenous Freshwater Species Habitat’, and nine seek amendments.

5.99. The reasons stated in submissions in support of Policy 4.31 and Rule 5.71 include:
   a. Importance and necessity for maintaining and enhancing water quality;\(^{418}\)
   b. Consistency with the RMA;\(^{419}\) and
   c. Better protection for waterway health, aquatic life and ecosystems, and the remaining habitat of native freshwater fish.\(^{420}\)

5.100. Three submitters (CCC, Forest & Bird, WWHT) support the intent of the PC7 provisions but consider that there are additional areas or situations where it is inappropriate to allow stock access. CCC\(^{421}\) does not clarify which additional areas it is concerned by.

5.101. Forest & Bird\(^{422}\) seeks that Rule 5.71 is strengthened to apply to all farmed animals (not just farmed cattle, deer and pigs) and to explicitly include wetlands, due to concerns about adverse effects of all types of farm stock on aquatic ecosystems. Similarly, H Iles\(^{423}\) seeks that clause (a) of Policy 4.31 is amended to exclude all stock from waterways and to amend the definition of “intensively farmed stock” (referred to in Rule 5.70) to include all livestock species. In addition, the submitter seeks that clause (c) of Policy 4.31 is amended to specify sheep (rather than sheep species that prefer to avoid water) and the stocking rates, stating that sheep are the only species that would not cause too much damage.

5.102. Regarding Policy 4.31, Forest & Bird states there is ambiguity in the terminology for “damage”, “disturbance”, “degradation”, “livestock”, “stock”, “stock species that prefer to avoid water”, “stocking rates that avoid evident damage” and “intensively farmed stock” which creates uncertainty for stock exclusion in and around wetlands, waterways and the riparian areas, and seeks that these terms are defined to strengthen Policy 4.31.

5.103. WWHT\(^{424}\) seeks that clause (b) of Policy 4.31 is expanded to exclude stock from riparian zones, clause (c) of Policy 4.31 is more stringent with regards to wetlands, and there is a new requirement for at least a 5 metre riparian protection zone along waterways and around wetlands and springheads. The submitter also seeks more consistent and defined terminology in clause (a) of Policy 4.31, although the exact terms are not specified. Regarding Rule 5.71, the submitter seeks the introduction of the term “streams” and a new condition that prohibits stock from the bed and banks of permanent wetlands that are shown on the Planning Maps.

5.104. Cashmere Stream Care Group\(^{425}\) supports Policy 4.31 but notes that for some high country farms there needs to be a balance between stock grazing and vegetation fire risk, the

---

\(^{418}\) For example; CCC (PC7-337.44), Springfield Partnership (PC7-306.6)

\(^{419}\) For example; DairyNZ (PC7-357.2), Croft Farming (PC7-324.7)

\(^{420}\) For example; DOC (PC7-160.4), A Cockburn (PC7-163.23), C Christensen (PC7-321.22), Fish & Game (PC7-351.9)

\(^{421}\) PC7-337.44

\(^{422}\) PC7-472.53, PC7-472.54, PC7-472.21

\(^{423}\) PC7-310.5 - PC7-310.7; PC7-26

\(^{424}\) PC7-88.63, PC7-88.56 - PC7-88.59, PC7-88.48, PC7-88.49, PC7-88.50 - PC7-88.52, PC7-88.62

\(^{425}\) PC7-193.2
practicality of fencing waterways that experience flood damage, and where stocking rates have minimal environmental impact.

5.105. Five submitters\textsuperscript{426} consider that Rule 5.71 should be amended to a controlled or restricted discretionary activity to allow stock exclusion exemptions under certain conditions, for example access to stock water drinking bays.

5.106. CDHB\textsuperscript{427} opposes the amendment to condition (2) of Rule 5.71, raising concerns that non-secure shallow bores are susceptible to contamination from livestock and therefore should be restricted from the drinking water protection zone of non-secure bore water. The submitter highlights that the DWSNZ considers non-secure bore water to be equivalent to surface water, whilst the definition of surface water in the CLWRP is restricted to water above the ground, meaning non-secure shallow bores will no longer be considered under Rule 5.71.

\textit{Analysis}

5.107. I recognise the benefits for freshwater biodiversity values in the submissions from Forest & Bird and H Iles that seek that the stock exclusion Rules 5.70 and 5.71 apply to all stock types. Any stock that graze the bed of a lake or river, or a wetland could result in sediment discharges, pugging and/or de-vegetation that degrades or destroys the habitat of freshwater species. However, the amendments sought by these submitters require an assessment of the cultural, environmental, social and economic implications, which has not been undertaken in PC7. In the absence of this assessment, and if indeed this change is within the scope of PC7, I do not consider that these submission points be accepted.

5.108. For the same reasons, I disagree with the submission from WWHT seeking more stringent provisions for stock access in riparian areas and wetlands.

5.109. In response to Forest & Bird’s submission regarding ambiguity of the words used in Policy 4.31, the words used in the CLWRP (including PC7) have their ordinary meaning as set out in the Oxford English Dictionary\textsuperscript{428}. I consider it may be appropriate to introduce a new definition into the Plan if the word is used in a rule, but only if the dictionary definition of the word is inadequate or the meaning of the word in the rule differs from the dictionary meaning. In my mind, the dictionary definitions of these words are adequate. In addition, the words are in a policy which does not require the same level of certainty as a rule. Therefore, I do not consider an amendment to PC7 is required in response to the submitter’s concerns.

5.110. In response to Cashmere Stream Care Group, I consider that the risk of damage or destruction of habitats of threatened indigenous freshwater species due to farmed cattle, deer and pigs outweighs the issues raised by the submitter.

5.111. In response to submissions seeking a change to the activity status of Rule 5.71, I note that access for stock to water drinking bays may occur as a permitted activity under Rule 5.68, but I consider that prohibiting farmed cattle, deer and pigs is appropriate in the sensitive locations specified in Rule 5.71. Any amendment to the activity status would require an assessment of the cultural, environmental, social and economic implications, which has not been undertaken in PC7. In the absence of this assessment, I do not consider that these submission points be accepted.

\textsuperscript{426} For example; Waimakariri DC (PC7-3.9), Oxford-Ohoha Community Board (PC7-148.11)
\textsuperscript{427} PC7-347.8
\textsuperscript{428} Section 2.9 of the CLWRP
5.112. I agree with CDHB that this amendment unintentionally introduces a risk to community drinking-water supplies sourced from non-secure groundwater intakes, and accordingly recommend reinstating the operative version of condition (2) of Rule 5.71.

**Recommendation**

5.113. Amend condition (2) of Rule 5.71 to reinstate the operative version of this condition.\(^{429}\)

5.114. Retain PC7 Policy 4.31 as notified.

**Policy 4.102: Safe Passage of indigenous fish**

**Provisions**

5.115. PC7 introduces Policy 4.102 to provide for fish passage and states:

> Structures enable the safe passage of indigenous fish, while avoiding as far as practicable, the passage of any invasive, pest or nuisance fish species by:

a. the appropriate design, construction, installation and maintenance of new in-stream structures; and  
b. the modification, reconstruction or removed of existing in-stream structures.

**Submissions**

5.116. Several submitters support Policy 4.102 as notified, including J Richardson,\(^{430}\) Beef + Lamb\(^{431}\) and Cashmere Stream Care Group.\(^{432}\) N Mugan\(^{433}\) supports Policy 4.102 as the submitter considers there are plenty of opportunities to enjoy sports fishing without compromising native species. CACB\(^{434}\) seeks the policy to remain as notified, stating its support of the protection of remaining salmonid-free freshwater ecosystems and the exclusion of introduced predatory fish from additional waterways to support the long-term survival of indigenous fish species in Canterbury’s waterways.

5.117. Approximately 30 submitters request the deletion of Policy 4.102. The over-arching concern raised by submitters is that the policy will enable in-stream structures to be placed in such a way that will limit or prevent the passage of trout and salmon. Specific reasons that are common in the submissions include:

a. Concerns about the detrimental impacts on their enjoyment (including social and mental wellbeing) and that of younger generations to go fishing\(^{435}\)

b. Concerns about the financial impact on tourism and businesses in towns associated with sports fishing\(^{436}\)

\(^{429}\) CDHB (PC7-347.8)

\(^{430}\) PC7-65.6

\(^{431}\) PC7-214.19

\(^{432}\) PC7-193.6

\(^{433}\) PC7-54.2

\(^{434}\) PC7-138.9

\(^{435}\) For example; P de Joux (PC7-48.1), A Dawson (PC7-79.1), K Lloyd (PC7-58.1), M Camp (PC7-380.1), K Collier (PC7-498.1), S Hyde (PC7-501.3)

\(^{436}\) For example; S Goodman (PC7-61.1), R Hawley (PC7-45.1), D Metzenthen (PC7-59.1), C Cleaver (PC7-500.1), H West (PC7-135.1)
c. Concerns about the restriction and potential destruction of Canterbury’s sports fishery

d. Concerns about impacts on migration of ‘trout and salmon’ / ‘sports fish’ on salmonid spawning and sustainability

e. Inconsistency/conflict with other regulations that are in place to protect sports fishery including Section 7 of the RMA, the Freshwater Fisheries Regulations 1983, the Conservation Act 1987, the CRPS, Water Conservation Orders, and DOC and Fish & Game functions

f. Uncertainty about application of the policy, in particular whether “invasive, pest or nuisance fish species” includes salmonids and whether the restrictions apply to all rivers in Canterbury

g. Indigenous fish and trout and salmon have co-existed for many years, and the decline in indigenous fish is for the same reason as the decline in trout and salmon, including the draining of wetlands, the pollution of waterways, over abstraction, and ineffective fish screens

h. Consideration that introduced salmonids should be treated the same as indigenous fish as salmonids are now part of the aquatic environment and the sports fishing industry

5.118. For the same reasons outlined above, many submitters seek that Policy 4.102 is amended to specify that structures enable the safe passage of ‘trout and salmon’ or ‘sports fish’, in addition to indigenous fish. Some submitters also consider that reference to “any invasive, pest or nuisance fish species” should be deleted, whilst Fish & Game considers that the phrase should be replaced with “pest organisms as defined in the Canterbury Regional Pest Management Plan.” Pareora Catchment Society Incorporated seeks a new definition of the species considered to be “invasive, pest or nuisance fish species”.

5.119. Fish & Game considers that Policy 4.102 inappropriately manages species rather than habitat and seeks the inclusion of an advice note that states: “Responsibility for indigenous fish species and fish passage matters resides with the Department of Conservation and the responsibility of sports fish species with the relevant Fish & Game Council as set out in the Conservation Act 1987 and the Freshwater Fisheries Regulations 1983. Species interaction matters are the primary responsibility of the Department of Conservation and the relevant Fish & Game Council.” Fish & Game states that there is uncertainty regarding which waterways the policy applies to because the PC7 definition and mapping of ‘indigenous freshwater species habitat’ has not been referred to.

437 For example; J Grierson (PC7-47.1), G Ackerley (PC7-140.1), D Wium (PC7-43.1), K Gunn (PC7-531.1)
438 For example; R Hawley (PC7-45.1), D Chambers (PC7-263.1) A Gardiner (PC7-504.1), R Artz (PC7-508.1), M Johnston (PC7-514.1), D Moody (PC7-118.1)
439 For example; Waimate DC (PC7-279.8); G Ackerley (PC7-140.1), C Sutherland (PC7-509.1) G Carter (PC7-49.2), C Taylor (PC7-556.1), Fish & Game (PC7-351.7)
440 For example; G Carter (PC7-49.2), K Collier (PC7-498.1), A Gardiner (PC7-504.1), T Gregg (PC7-516.1), Save the Rivers Mid Canterbury (PC7-535.1)
441 For example; Save the Rivers Mid Canterbury (PC7-535.1), NZ Salmon Anglers Association (PC7-542.1), M Hall (PC7-444.5)
442 For example; I Forsyth (PC7-152.1), Rangiora Nursery (PC7-365.1)
443 For example; C Bell (PC7-66.1), R Gibson (PC7-76.1), T Orman (PC7-53.1), J Foates (PC7-523.1)
444 For example; B McKnight (PC7-529.1), N Moody (PC7-545.1), J Richardson (PC7-540.1)
445 PC7-108.10
446 PC7-351.7
5.120. D Moody\textsuperscript{447} considers that the only appropriate location of structures to exclude salmonids would be the very top of small streams where there is ample salmonids spawning habitat available below the structure, in consultation with Fish & Game. Canterbury Fly Fishing Club\textsuperscript{448} states that there may be a very small number of waterways where for scientific reasons may be protected for native fish, but these streams should represent less than 5% of Canterbury's waterways. M Hall\textsuperscript{449} considers the policy should recognise sites where indigenous fish and salmonids do not compete for habitat.

5.121. J Richardson\textsuperscript{450} seeks that the policy requires consideration of natural amenity, recreational value and cultural value of the waterbody when constructing new in-stream structures. In response to the submission from J Richardson, I consider that the existing CLWRP policies provide sufficient direction regarding consideration of natural amenity, recreational value and cultural value of the waterbody, in particular Policy 4.88.

5.122. DOC\textsuperscript{451} supports the intent of the policy to provide for the passage of fish past instream structures but seeks that clause (a) of Policy 4.102 includes the 'placement' of new structures to allow for situations where fish passage is undesirable for the protection of non-migratory species. Ngā Rūnanga\textsuperscript{452} supports the intent of the policy, but suggests alternative wording including the deletion of 'reconstruction' from clause (b) of Policy 4.102.

5.123. Trustpower\textsuperscript{453} raises concerns with the implications for existing structures that currently prevent fish passage under clause (b) of Policy 4.102, stating that modification or removal of these structures may not be appropriate and reference to "removal" of existing structures should be deleted. The submitter considers the policy should explicitly state that it only applies to resource consent applications for new or existing structures.

5.124. Meridian\textsuperscript{454} raises similar concerns regarding modification of an existing structure (in particular, Waitaki Power Scheme structures) and seeks that the policy be amended to allow consideration of alternative means of providing fish passage if the modification, reconstruction or removal of a structure is not practicable or would not provide effective passage. Meridian also seeks more policy guidance on the species valued for passage, and the life cycle, life stages and needs of passage for those species.

5.125. Genesis\textsuperscript{455} raises concerns regarding the impact of Policy 4.102 and the PC7 ‘Indigenous Freshwater Species Habitat’ on the operation, maintenance and upgrade of Tekapo Power Scheme, and requests that the policy states that it does not apply to any instream structures associated with this Scheme.

5.126. Some submitters, including Federated Farmers\textsuperscript{456} and Greenstreet Irrigation Society\textsuperscript{457} consider that Policy 4.102 needs to have a practicability qualification attached to it and
suggests minor amendments with respect to the phrase “as far as practicable”. Conversely, Forest & Bird\textsuperscript{458} consider that “as far as practicable” provides for opt out.

5.127. Several submitters, including Timaru DC\textsuperscript{459} and Fish & Game\textsuperscript{460} consider the word ‘removed’ in clause (b) of Policy 4.102 should be amended to ‘removal’.

**Analysis**

5.128. The intention of Policy 4.102 is to maintain indigenous biological diversity which is a regional council function as set out in section 30(1)(ga) of the RMA. Specifically, the policy seeks to maintain habitat quality and quantity for indigenous fish species to survive, breed and migrate. The RMA also provides for the management of aspects of indigenous biodiversity through the following sections:

- Safeguarding the life-supporting capacity of air, water, soil and ecosystems – section 5(2)(b) of the RMA
- Protecting areas of significant indigenous vegetation and significant habitats of indigenous fauna as a matter of national importance – section 6(c) of the RMA
- Having regard to the intrinsic values of ecosystems – section 7(d) of the RMA

5.129. Policy 4.102 gives effect to the CRPS (s67(3)(c)). Objective 9.2.1 of the CRPS states “The decline in the quality and quantity of Canterbury’s ecosystems and indigenous biodiversity is halted and their life-supporting capacity and mauri safeguarded.” Objective 9.2.3 states “Areas of significant indigenous vegetation and significant habitats of indigenous fauna are identified and their values and ecosystem functions protected.”

5.130. Although all Objectives of the CLWRP should be considered together, the most relevant plan Objective that Policy 4.102 implements is Objective 3.17, which states: “The significant indigenous biodiversity values of rivers, wetlands and hāpua are protected.” The permitted activity rules that will directly implement Policy 4.102 are Rules 5.137 (bridges and culverts), 5.138 (defences against water), and 5.140A (equipment or devices) which are all associated with in-stream structures that could prevent existing fish passage. Rules 5.140 and 5.151 (temporary structures) include a new permitted activity requirement to maintain fish passage, and so these rules as amended by PC7 also implement Policy 4.102.

5.131. The Freshwater Fisheries Regulations 1983 defines the following species as “sports fish”: brown trout, rainbow trout, American brook trout or char, lake trout or char, Atlantic salmon, quinnat or chinook salmon, sockeye salmon, perch and tench. The Freshwater Fisheries Regulations also includes a definition of “species of noxious fish” but does not define “pest” fish. The term “pest” is defined in the Canterbury Regional Pest Management Plan (CRPMP) as per the Biosecurity Act 1993, being “an organism specified as a pest in a pest management strategy.” Koi Carp is the only pest fish species listed in the CRPMP.

5.132. In response to CACB, I note that the intention of the policy is not to create new salmonid-free waterways, but to require consent applicants to consider the impacts on indigenous fish habitats prior to removing or modifying an existing structure that currently prevents fish passage. If a structure that is currently inhibiting fish passage is located in a waterway that provides an existing Indigenous Freshwater Species Habitat, the consent applicant should...

\textsuperscript{458} PC7-472.43  
\textsuperscript{459} PC7-292.9  
\textsuperscript{460} PC7-351.97
consider the implications of the works in terms of fish passage as it may introduce new fish species into the habitat.

5.133. I consider that removing an existing barrier to fish passage in a river located within 500 metres downstream of a mapped Indigenous Freshwater Species Habitat may allow for situations where fish passage is undesirable. Of the eleven species included in the Indigenous Freshwater Species Habitat mapping all but the freshwater mussel and spawning lamprey are known to be subject to negative interactions with salmonids or some native fish.

5.134. I agree with Fish & Game that clearer policy direction is required about which habitats of indigenous fish could be most impacted by modifying or removing a structure that currently restricts fish passage. Accordingly, it is recommended that the policy direction for existing structures (clause (a) of Policy 4.102) is amended to reference the mapped habitats of the nine species listed in the definition of Indigenous Freshwater Species Habitat that are known to be subject to negative interactions with exotic or native fish. I consider that this amendment would also respond to the concerns and recommendations from Canterbury Fly Fishing Club and M Hall.

5.135. In response to DOC, I consider that the “placement” of new structures is potentially a more appropriate term than “installation” in clause (a) of Policy 4.102. I agree with Ngā Rūnanga regarding the deletion of the word ‘reconstruction’ in clause (b) of Policy 4.102 as this would more closely align with the policy intent to remove, modify or lower existing in-stream barriers to fish passage such as perched culverts.

5.136. I agree with Trustpower that the intent of Policy 4.102 could be clearer in that it is intended to guide decision-making on resource consent applications associated with structures in the bed of rivers, for example applications to lower perched culverts or remove weirs. If the policy is retained, I recommend that it refers to resource consent applications in order to satisfy the concerns raised by Trustpower regarding the requirement to remove existing structures. I do not agree with Trustpower that it is appropriate to delete reference in the policy to the removal of an existing structure, as this may be the purpose of the consent application and if so, it is important to consider if the removal of this structure would impact on the habitats of indigenous species.

5.137. I note that the ecological implications of the choice between the modification, reconstruction or removal of in-stream structures and an alternative method of providing fish passage will reflect the relative efficacy of the methods. In addition, an alternative method would presumably rely upon a proactive approach. For example, if a fish trap and transfer system is established it must be maintained. Alternatively, the modification, reconstruction or removal of structures is a permanent solution requiring no further investment. If alternative methods are employed, but do not match the efficacy of the modification, reconstruction or removal of structures, the upstream fish populations will be impacted by a lack of recruitment. If the river in question is a large system, the magnitude of the population effect may be such that regional or national fish populations are impacted. For example, the exclusion of long fin eel from the Waitaki River is potentially a significant reduction in available habitat of a threatened species.

5.138. The NPSREG requires that regional councils recognise and provide for the national significance of renewable generation activities, including having particular regard to the maintenance of the generation output of existing renewable generation activities. If the policy is retained, I

---

461 Allibone & Gray 2018 Critical habitat for Canterbury freshwater fish, koura/kekewai and kakahi.
recommend that an exception is provided for existing hydro-electricity generation structures that will be modified or removed should any operation or maintenance activities be subject to the policy. In forming this recommendation, I have considered the requirement in s6(c) of the RMA to recognise and provide for the protection of significant habitats of indigenous fauna, the Objectives of the CLWRP and the directives of the NPSREG (as discussed in the preceding Part 3 Section 5 sub-topic ‘Extent and accuracy of the Planning Map layer Indigenous Freshwater Species Habitat’, paragraph 5.21 onwards).

5.139. In response to submissions from Federated Farmers, Greenstreet Irrigation Society and Forest & Bird on the appropriateness or otherwise of the term “as far as practicable”, I consider that an assessment of practicability would occur during the assessment of a resource consent application and the inclusion of the phrase recognises this. I agree with submitters that the word ‘removed’ in clause (b) of Policy 4.102 should be amended to fix a minor drafting error.

5.140. Given the above discussions, I have considered the predominant response of submitters to PC7 Policy 4.102, being uncertainty regarding the policy intent and concerns about the potential restrictions on the passage of “sports fish”, the jurisdictional matters associated with fish passage, and the potentially limited number of consent applications that would need to have regard to this policy, and conclude that this policy should be deleted.

**Recommendation**

5.141. Delete PC7 Policy 4.102.

**Rules 5.141 and 5.152: Sediment discharges**

**Introduction and Provisions**

5.142. The spawning habitat of many indigenous freshwater species is vulnerable to activities that increase sedimentation. Sediment released by activities within flowing reaches has the potential to smother invertebrate and fish gills as well as benthic habitat.

5.143. Rules 5.141 and 5.152 of the CLWRP are permitted activity rules that refer to temporary discharges to water or to land in circumstances where a contaminant may enter water associated with undertaking certain activities, or in relation to artificial watercourses. For Rule 5.141, the associated activities are structures under Rules 5.135 to 5.140A, and for Rule 5.152, gravel extraction under Rules 5.147 to 5.151.

5.144. Currently permitted activity condition (3) of both Rules 5.141 and 5.152 restricts the temporary discharge of sediment or sediment-laden water to not more than 10 hours in any 24-hour period, and not more than 40 hours in total in any calendar month.

5.145. PC7 Part A amends the existing sediment discharge restrictions in Rules 5.141 and 5.152 (condition (3) in both rules) to apply water quality limits based on river management unit. These limits apply after the first four hours of the temporary discharge commencing, with the time delay intended to allow for sediment discharges associated with minor works to occur as a permitted activity. For example, it is estimated that it would take less than four hours for a

---

462 Allibone & Gray 2018 Critical habitat for Canterbury freshwater fish, koura/kekewai and kakahi.

463 Section 32 Report supporting technical memorandum: “Ecological impacts of braid diversion”
gravel extraction contractor to place a temporary culvert in the bed of a river (installed under Rule 5.151).

5.146. Condition (3) of Rules 5.141 and 5.152 is as follows:

3. The discharge is not for more than ten hours in any 24-hour period, and not more than 40 hours in total in any calendar month concentration of total suspended solids in the discharge, except within the first 4 hours of discharge, does not exceed:
   
   a. 50g/m³ where the discharge is to any spring-fed river, Banks Peninsula river, or to a lake except when the background total suspended solids in the waterbody is greater than 50g/m³ in which case the Schedule 5 visual clarity standards shall apply; or
   b. 100g/m³ where the discharge is to any other river or to an artificial watercourse except when the background total suspended solids in the waterbody is greater than 100g/m³ in which case Schedule 5 visual clarity standards shall apply.

Submissions

5.147. Several submitters support the amended sediment discharge condition in PC7 Rules 5.141 and 5.152. Ngā Rūnanga 464 seeks to retain condition (3) of Rules 5.141 and 5.152 as notified, stating their support of clearer limits on suspended solids. Timaru DC 465 is supportive of PC7 condition (3) of Rule 5.141 because of the potential positive effects on its community drinking-water and water supply surface water takes where the sediment discharges occur upstream of the take. Fish & Game 466 supports Rule 5.152, reasoning that discharges to a water way can have adverse effects on freshwater habitat. CCC 467 indicates its general support for Rule 5.141 (along with the other ‘structures’ rules) although its reasons do not make particular reference to sediment discharges.

5.148. Federated Farmers 468, Greenstreet Irrigation 469 and Ashburton River Irrigators Association 470 oppose PC7 condition (3) of Rules 5.141 and 5.152, as they consider that the required concentrations of suspended solids needs to be technically justified.

5.149. New Zealand Defence Force 471 opposes PC7 condition (3) of Rule 5.141, stating that the existing restrictions are appropriate given the specific attributes of temporary activities and associated discharges, and imposing total suspended solids limits, which would require monitoring to confirm compliance with a permitted activity rule, is excessive in relation to these activities.

5.150. South Canterbury Gravel Extracting Industry 472 and Rooney Earthmoving 473 oppose condition (3) of the ‘structures’ Rule 5.141, citing that the sediment limits are too onerous for temporary activities, and impractical and unachievable in these circumstances. They consider that as any potential discharge must originate from the bed of the river and be native to that waterbody,

---

464 PC7-423.55, PC7-423.58
465 PC7-292.30, PC7-292.33
466 PC7-351.18, PC7-95.79
467 PC7-337.152
468 PC7-430.52, PC7-430.53
469 PC7-312.52, PC7-312.53
470 PC7-343.36 – I note that this submission point is on Rule 5.141 but the submission also refers to Rule 5.152
471 PC7-344.2
472 PC7-393.2
473 PC7-392.2
it will have less effect on water quality than a flood or recreational vehicle driving through the
same waterbody. South Canterbury Gravel Extracting Industry also states that PC7 condition
(3) adds an additional layer of complicated and unnecessary compliance and costs.

5.151. Aggregate and Quarry Association⁴⁷⁴ and Fulton Hogan⁴⁷⁵ oppose condition (3) of the ‘gravel
extraction’ Rule 5.152, noting that discharges from gravel processing activities to land where
it may enter water are unlikely to meet the more stringent sediment limits. The submitters
state that as gravel processing equipment is located in the river berm or gravel beach of a
braided river, sediment discharges will percolate to ground, there is very little risk of this
sediment laden discharge reaching a surface waterbody, and provided the discharge is to land
and then groundwater, this sediment discharge is unlikely to result in an adverse effect. Fulton
Hogan seeks that Rule 5.152 is amended to specify that the receiving water is ‘surface’ water
(as opposed to water generally).

5.152. Meridian⁴⁷⁶ requests that condition (3) of Rule 5.141 is amended to apply the sediment
discharge limits ‘outside of the zone of reasonable mixing’. Its reasoning does not specifically
mention sediment discharges but does highlight their concerns with the implications of the
PC7 amendments on the maintenance and operation of the Waitaki Power Scheme.

**Analysis**

5.153. I note that the limits for suspended sediment discharges used in Rules 5.141 and 5.152 are the
same as in existing CLWRP permitted activity rules, for example Rule 5.163. That is, a total
suspended solids concentration threshold, and a visual clarity standard set out in Schedule 5
of the plan if the background total suspended solids concentration exceeds the threshold.
Most permitted activity rule restrictions for discharges of total suspended solids are from
point source discharges such as stormwater discharges. However, Plan Change 4 to the
CLWRP introduced restrictions on sediment discharges from activities other than strict point
source discharges, including disturbance of the bed associated with the disturbance and
removal of existing vegetation (Rule 5.163).

5.154. In response to Federated Farmers, Greenstreet Irrigation and Ashburton River Irrigators
Association who seek technical justification for the total suspended solids limits, I note that
these permitted activity limits (50 or 100 g/m³ depending on the receiving waterbody type)
are the same as in existing CLWRP rules. The reasoning for these existing sediment limits was
principally to avoid the addition of fine sediments to waterways that would subsequently
settle on the bed, as outlined in the 2009 technical report⁴⁷⁷ that was provided for the CLWRP
hearing. However, these limits were described for point source discharges to waterbodies
rather than the effects of mobilising sediments already in the bed (as per PC7 Rules 5.141 and
5.152).

5.155. The technical report explains that suspended and deposited fine sediments have a range of
negative impacts on aquatic ecosystems such that in some circumstances fine sediment is
considered the major stressor. As such it is important to manage the discharge of fine
sediment into a waterway and the mobilisation of sediments already present on the bed.

⁴⁷⁴ PC7-458.2
⁴⁷⁵ PC7-428.8
⁴⁷⁶ PC7-346.15
⁴⁷⁷ Hayward S; Meredith A; Stevenson M. 2009. Review of proposed NRRP water quality objectives and
5.156. Fine sediment in a waterway is mobilised during flood events and re-distributed downstream. This occurs to a greater magnitude and extent in rivers that experience large floods than those with stable flows such as spring fed streams. Nonetheless, flow event sediment mobilisation is a natural event in the river.

5.157. Artificial mobilisation of fine sediment during baseflows will have negative impacts by virtue of the fact that the water should otherwise be clear and that biota have adapted to the previous state of the sediment deposition. In particular there has been research on the negative effects of suspended fine sediment on fish migration. Re-deposition of fine sediment is also associated with negative impacts upon macroinvertebrates and the promotion of cyanobacteria blooms.

5.158. Fine sediment is not uniformly distributed through a waterway and tends to settle in certain areas and not others during flood flow recession. Artificial mobilisation has the potential to re-distribute sediments with negative ecological effects. As such mobilisation of fine sediments in a waterway should be minimised as much as possible.

5.159. Based on the technical advice on the impacts of sediment and the measurement of visual clarity, I disagree with NZDF, South Canterbury Gravel Extracting Industry and Rooney Earthmoving that PC7 amendments to condition (3) of Rules 5.141 and 5.152 should be deleted. The introduction of measurable sediment limits after a four-hour period is considered appropriate to minimise adverse effects on aquatic species.

5.160. In response to concerns raised by NZDF, South Canterbury Gravel Extracting Industry and others regarding the more stringent monitoring requirements, I note that visual clarity is typically measured using a black disk. A simplified method has also been developed specifically to overcome constraints involved with community monitoring and in small streams. The clarity tube uses the principles of the black disk method, is quick and easy to use, and can be used in any environment, such as small streams with dense macrophyte growths or very fast-flowing or deep rivers where use of the black disk is difficult or hazardous. Readings taken using the clarity tube have been shown to correlate well with black disk measurements.

5.161. In terms of the management of bed sediment re-mobilisation, I consider that a sediment discharge measure based on visual clarity as outlined in Schedule 5 of the CLWRP, as opposed to measurement of turbidity or suspended solids concentrations, has immediate environmental relevance to the aesthetics, contact recreation, and fish habitat values. As such this approach is appropriate and more applicable to sediment being mobilised from within the stream bed.

5.162. Based on the technical advice, I partially agree with concerns raised by South Canterbury Gravel Extracting Industry and Rooney Earthmoving that the measurement of suspended sediment is...
sediment in the discharge is excessive in relation to the activities managed under Rules 5.141 and 5.152. In particular, I agree that the total suspended solids concentration limit, which requires a laboratory test, is too onerous for temporary discharges and therefore I recommend deleting this requirement from condition (3). However, I do not consider that the measurement of visual clarity is too onerous for temporary discharge activities. In addition, to provide certainty of temporary nature of the activity I recommend that the maximum time periods for discharge are reinstated (i.e. not more than ten hours in any 24 hour period and not more than 40 hours in total).

5.163. In response to Aggregate and Quarry Association and Fulton Hogan seeking that Rules 5.141 and 5.152 be amended to only apply to discharges to ‘surface water’ rather than ‘water’, I consider that this would inappropriately narrow the scope of the rules. For example, the rules would no longer cover situations where temporary sediment discharges to land infiltrate into groundwater and then rapidly move into the adjacent surface waterbody. In that circumstance the PC7 sediment discharge standards should apply to protect ecosystems.

5.164. In response to the request from Meridian that the sediment discharge limits should only apply ‘outside of the zone of reasonable mixing’, I note that mixing zones are not typically applied to point source discharges of fine sediment because the primary issue with suspended sediment is not the concentration in the water, but the volume of sediment that deposits on the bed. A considerable amount of sediment may fall out of suspension within the mixing zone and create a significant impact that cannot be diluted (or mixed) but remains within the waterbody.

5.165. However, the use of the visual clarity standards in Schedule 5 of the CLWRP does include the application of a ‘mixing zone’, which is defined in the schedule as the area (and underlying volume) of a receiving water where the water quality standards do not have to be met. This is considered appropriate in the situation where suspended fine sediments have been re-mobilised from within the bed rather than discharged into the waterbody. The use of visual clarity in the case of a discharge of fine sediment into a waterbody (not from within) is not ideal and should be accompanied with some measurement of sediment load such as total suspended solids.

*Recommendation*

5.166. Amend condition (3) of both PC7 Rules 5.141 and 5.152, as shown in Appendix E.

*Ecological impacts of diversions*

5.167. PC7 amends Policy 4.47 and Rules 5.140 and 5.151 in response to plan implementation issues that has seen some parties “diverting” whole river braids/reaches to enable access to gravel “islands” within braided rivers with consequent adverse effects on river ecology. The ‘diversion’ is currently occurring as a permitted activity. These changes are primarily informed by the supporting technical memorandum: “Ecological impacts of braid diversion”.

*Policy 4.47 – Small scale diversion of water*

*Provisions*

5.168. PC7 amends Policy 4.47 as follows:
Small-scale diversions of water within the beds of lakes, rivers or adjoining wetlands are provided for as part of:

... 

b. removing gravel or other earthworks provided potential adverse effects on any person, their property, or the ecological, cultural, recreational or amenity values of the fresh waterbody are minimised;

c. undertaking minor flood or erosion control or repair works and the diversion is occurring within the boundaries of a site or an individual’s property and provided there are no potential adverse effects that are more than minimal on any other person, their property, or any ecological, cultural, recreational or amenity values of the fresh waterbody; ...”

Submissions

5.169. Several submitters, including Beef + Lamb\textsuperscript{483}, Ngā Rūnanga\textsuperscript{484} and Fish & Game\textsuperscript{485} support the amendment to Policy 4.47. Fish & Game comments that the policy recognises the importance of ecological, cultural, recreational and amenity values of a waterbody and the adverse impacts that diversions can have on these values if not managed and considered appropriately.

5.170. Ashburton River Irrigators\textsuperscript{486}, Greenstreet Irrigation\textsuperscript{487} and Federated Farmers\textsuperscript{488} consider that clause (b) of Policy 4.47 should be amended to add the phrase “as much as practicable”, stating that the amendment seems reasonable but it is unclear what it would mean in practical terms.

5.171. Timaru DC\textsuperscript{489} provides its support for Policy 4.47, conditional on the policy intent being retained, citing that the policy may have effects on the construction of its new community water supply pipelines and other infrastructure.

5.172. DOC\textsuperscript{490} supports the amendment to clause (b) of Policy 4.47 and considers that this requirement to minimise potential adverse effects of small-scale diversions of water should also apply to clause (a). The submitter states that this addition would be consistent with Rule 5.140.

5.173. Fulton Hogan\textsuperscript{491} raises concerns about the uncertainty of the word ‘minimised’ in clause (b) of Policy 4.47, stating that minimisation of effects without a reference point provides limited guidance to consent applicants and decision makers. The submitter questions if the word ‘minimised’ requires that the CLWRP water quality outcomes need to be met or some other measure such as reducing effects to the smallest amount possible. It seeks deletion of the word ‘minimised’ or more specific reference to the values that need to be considered when undertaking the activity.

\textsuperscript{483} PC7-214.13
\textsuperscript{484} PC7-423.17
\textsuperscript{485} PC7-351.3
\textsuperscript{486} PC7-343.11
\textsuperscript{487} PC7-312.13
\textsuperscript{488} PC7-430.11
\textsuperscript{489} PC7-292.4
\textsuperscript{490} PC7-160.5
\textsuperscript{491} PC7-428.2
5.174. Forest & Bird\textsuperscript{492} seeks that clause (b) of Policy 4.47, associated with removing gravel and other earthworks, is amended to a more stringent policy setting of avoidance of adverse effects on the freshwater body, rather than minimisation, to be consistent with the Canterbury Water Management Strategy first order principles. With respect to adverse effects on people and property, the submitter considers that “minimise” is appropriate. It also seeks that clause (c) of Policy 4.47, associated with minor flood or erosion control or repair works, is similarly made more stringent to require the avoidance of any potential adverse effects on the ecological, cultural, recreational or amenity values of the freshwater body.

Analysis

5.175. I consider that the phrase “as much as practicable” would mean that those potential adverse effects of removing gravel and other earthworks on those considerations listed in clause (b) of Policy 4.47 only need to be minimised if it is practicable to do so. In addition to potentially increasing adverse effects, I do not consider that the amendment would provide the increased clarity sought by the submitters.

5.176. I do not consider the amendment sought by DOC is consistent with the direction provided in the CRPS and CLWRP on infrastructure, nor is it reasonable given the likely small scale of effects of the small-scale diversion of water. In considering the submission from DOC on clause (a) of Policy 4.47, I have considered the RMA definition of infrastructure, the CRPS definitions of ‘regionally significant infrastructure’ and ‘critical infrastructure’, CRPS policy direction\textsuperscript{493}, and the CLWRP Objectives. In particular, Objective 3.3 directs that “Nationally and regionally significant infrastructure is enabled and is resilient and positively contributes to economic, cultural and social wellbeing through its efficient and effective operation, on-going maintenance, repair, development and upgrading.”

5.177. I do not share the same concerns of Fulton Hogan regarding uncertainty of the word ‘minimised’ in clause (b) of Policy 4.47 given that the policy provides direction for plan users on the type of effects on the environment that should be minimised for small-scale diversions associated with removing gravel and other earthworks, and if consent is required, the scale and significance of the effects will be considered case by case through the resource consent process. Accordingly, I recommend that this submission point be rejected.

5.178. In response to Forest & Bird, I consider that the requirement to minimise (rather than avoid) effects is reasonable for these two types of activities given the likely small scale of the effects (the policy refers to small-scale diversions of water) and does not account for any effects up to the permitted activity threshold. However, I acknowledge that phrasing PC7 clause (b) of Policy 4.47 differently to existing clause (c) may cause plan users uncertainty about whether they intend different outcomes. For this reason I consider it appropriate to amend clause (b) so that they are identically phrased.

Recommendation

5.179. Amend clause (b) of Policy 4.47,\textsuperscript{494} as per the tracked changes in Appendix E.

\textsuperscript{492} PC7-472.26, PC7-472.27

\textsuperscript{493} In particular Policy 5.2.2 of the RPS: Integration of land-use and regionally significant infrastructure

\textsuperscript{494} Forest & Bird (PC7-472.26, PC7-472.27)
**Rules 5.140 and 5.151**

**Provisions**

5.180. PC7 amends permitted activity Rules 5.140 and 5.151 to introduce four new conditions associated with the diversion of water and the placement of temporary culverts for the purpose of maintaining indigenous freshwater biological diversity. Rule 5.140 is grouped with the ‘Structures’ rules in the CLWRP and refers to: “the installation, alteration, extension or removal of temporary structures and diversions associated with undertaking activities in Rules 5.135 to 5.139, military training activities, or artificial watercourses.” Rule 5.151 is a ‘Gravel from lake and riverbeds’ rule in the CLWRP and refers to: “the placement, use, maintenance and removal of any temporary structures and diversions associated with undertaking activities in Rules 5.147 to 5.150 or in relation to artificial watercourses.”

5.181. The new conditions proposed by PC7 are the same for each rule, as follows:

3. The activity does not prevent fish passage or result in the stranding of fish; and
4. Any diversion of water out of a river channel does not reduce the wetted width of that existing channel by more than 25% at any point; and
5. For any temporary culvert in a river:
   a. The maximum length of the culvert is 10m; and
   b. The culvert is installed so that the base of the culvert is below bed level to an extent that a minimum of 25% of the internal width of the culvert is below the level of the bed of the river or is covered with water at the estimated 7DMALF; and
6. The activity is not in a river, lake or artificial watercourse managed for flood control or drainage purposes unless written permission has been obtained from the authority responsible for maintaining the flood and drainage carrying capacity of that water body or watercourse.

**Submissions and Analysis**

5.182. Sixteen submissions were received on PC7 Rule 5.140 and 12 submissions on PC7 Rule 5.151. Those which clearly relate to the four new conditions are discussed below. Submissions on Rules 5.140 and 5.151 relating to Indigenous Freshwater Species Habitat or impacts on hydro-electricity generation infrastructure/activities due to these mapped habitats, are discussed in other sub-sections of this topic.

5.183. Ngā Rūnanga\(^{495}\) and DOC\(^{496}\) support the addition of conditions (3) to (5) in both rules to ensure fish passage is provided for.

5.184. Timaru DC\(^{497}\) states its neutrality to Rules 5.140 and 5.151 but seeks that any amendments are not any more restrictive than currently proposed as the rules may have effects on the construction and maintenance of their community water supply infrastructure.

\(^{495}\) PC7-423.53, PC7-423.57
\(^{496}\) PC7-160.19, PC7-160.25
\(^{497}\) PC7-292.28, PC7-292.32
5.185. Greenstreet Irrigation Society,\textsuperscript{498} Federated Farmers\textsuperscript{499} and Ashburton River Irrigators\textsuperscript{500} consider that the culvert installation requirements in condition (5)(b) are unclear and seek that the condition is re-written. The text of concern is: “The culvert is installed so that the base of the culvert is below bed level to an extent that a minimum of 25% of the internal width of the culvert is below the level of the bed of the river”.

5.186. I note that the New Zealand Fish Passage Guidelines\textsuperscript{501} (Appendix G) describe the minimum culvert design standards for fish passage including the use of open bottom culverts or embedding the culvert invert by 25 - 50 % of the culvert height (among many other standards for instream infrastructure to provide for fish passage). Condition (5)(b) is recommended to be amended to more closely align with these guidelines, while retaining reference to the 7DMALF. We are uncertain if this fully resolves the submitters’ concerns. The proposed text is:

\textit{The culvert is an open bottom culvert or the base of the culvert is embedded below bed level by 25% to 50% of the culvert height}....

5.187. Central South Island Fish and Game\textsuperscript{502} supports the requirement to maintain fish passage and prevent the stranding of fish (condition (3)), stating that it acknowledges the importance of maintaining fish passage in a waterbody for spawning and lifecycles. Regarding condition (5)(b), the submitter seeks that the word ‘or’ is replaced with ‘and’, stating that both the embedment of the culvert (at least 25% buried) and a water flow at the estimated 7DMALF are important for passage at critical low flow periods. North Canterbury Fish and Game\textsuperscript{503} adopt the submission of Central South Island Fish and Game.

5.188. With reference to Appendix G of the New Zealand Fish Passage Guidelines, I agree with Fish & Game that minimum design requirements for culvert installation and flow are both key requirements for fish passage and therefore recommend that the “or” in condition (5)(b) is changed to an “and”.

5.189. Fulton Hogan\textsuperscript{504} considers that condition (5) should be amended to a maximum culvert length of 14 metres rather than 10 metres as proposed in PC7 to provide enough clear space either side of the vehicles used to cart gravel from the riverbed. They acknowledge that a limit is appropriate to avoid issues that might arise from long culverts in areas with high flow velocities where fish passage may be harder to maintain, but state that condition (3) and (5)(b) effectively provide for fish passage, therefore making the 10 metre culvert limit unnecessary.

5.190. In response to Fulton Hogan, I agree that the rules should be amended to increase the culvert length in recognition of the improved practicality for contractors undertaking works in the bed.

5.191. NZDF\textsuperscript{505} considers that condition (5) of PC7 Rule 5.140 is unnecessary and seeks its deletion, stating that the other rule conditions, in particular conditions (3) and (4), sufficiently manage the potential effects of this temporary activity.

\textsuperscript{498} PC7-312.51  
\textsuperscript{499} PC7-430.51, PC7-430.56  
\textsuperscript{500} PC7-343.33  
\textsuperscript{501} New Zealand Fish Passage Guidelines: \textit{For structures up to 4 metres}. April 2018.  
\textsuperscript{502} PC7-351.14, PC7-351.15, PC7-351.16, PC7-351.17  
\textsuperscript{503} PC7-95.75, PC7-95.76, PC7-95.77, PC7-95.78  
\textsuperscript{504} PC7-428.6, PC7-428.7  
\textsuperscript{505} PC7-344.1
5.192. I note that while condition (5) is primarily associated with the potential effects on fish passage, it also limits effects on visual amenity, recreational values, cultural values and water quality associated with culvert installation. Accordingly, it is recommended to retain condition (5).

5.193. Meridian\textsuperscript{506} seeks that condition (3) of Rule 5.140 explicitly states that the requirement for fish passage only applies to new culverts due to concerns on the implications on activities associated with the Waitaki Power Scheme.

5.194. I do not consider that this amendment is necessary given that Rule 5.140 covers temporary structures, quantified by condition (2) of Rule 5.140 which requires that the structure is in place for no more than four weeks in any 12 months. In other words, all temporary culverts are likely to be “new” structures.

5.195. Federated Farmers\textsuperscript{507} raises concerns that the “Gravel from lake and riverbed” Rules 5.148, 5.149 and 5.150 prevent the diversion of water within the bed of a river, and considers that an effects-based approach is more appropriate for the very limited volumes of extracted permitted by these rules. To provide relief, the submitter seeks that Rule 5.148 is amended to delete the notified text “but excluding the diversion of water within the bed of a river” and a new condition is introduced that requires fish passage.

5.196. Similarly, Rooney Earthmoving\textsuperscript{508} and South Canterbury Gravel Extracting Industry\textsuperscript{509} oppose the PC7 amendments to Rule 5.149 to remove the diversion of water from rule descriptor (“the chapeau”), stating that this seems disproportionate to the potential effects in addition to their requirement to comply with the Canterbury Regional Gravel Management Strategy (2012).

5.197. In response to Federated Farmers, Rooney Earthmoving and South Canterbury Gravel Extracting Industry, I consider that the amendments to Rules 5.147 to 5.150 provides a more straight forward rule pathway which clarifies that Rule 5.151 is the permitted activity rule for diversions associated with the “gravel” rules, as amended by PC7 to address the risks to indigenous species habitats described in the Section 32 Report supporting technical memorandum: “Ecological impacts of braid diversion”. Rule 5.151 introduces a new permitted activity condition that requires fish passage and the prevention of fish stranding. The Canterbury Regional Gravel Management Strategy does not control (nor mention) the diversion of water. Therefore, no change is recommended to the provisions.

5.198. Arowhenua and Te Rūnanga\textsuperscript{510} seek a new condition in Rules 5.140 and 5.151 that the activity does not occur within any mapped ‘Rock Art Management Area’ which are located within the OTOP zone, citing concerns regarding potential adverse effects of activities on these nationally and culturally important limestone rock areas.

5.199. Part B of PC7 introduces new planning maps identifying the Rock Art Management Area in Section 14 (OTOP) of the plan and given that rock art is currently only mapped in this sub-region, I consider the relief sought by Arowhenua and Te Rūnanga is better considered in the PC7 Part B section of this report.

\textsuperscript{506} PC7-346.12
\textsuperscript{507} PC7-430.55
\textsuperscript{508} PC7-392.3
\textsuperscript{509} PC7-393.3
\textsuperscript{510} PC7-424.105, PC7-424.108
Recommendation

5.200. I recommend amending PC7 Rule 5.140 and 5.151 condition (5)(a) to a maximum culvert length of 14 metres\(^{511}\) and condition (5)(b) to improve clarity for culvert installation requirements.

5.201. Rule 5.137 covers the installation, alteration, extension, or removal of culverts (including temporary culverts), and the associated take, discharge or diversion of water. To remove duplication of the temporary culvert requirements in condition (7) of Rule 5.137 with PC7 Rule 5.140, it is recommended to delete condition (7) from Rule 5.137 and introduce the requirements of condition (7)(a) and (b) of Rule 5.137 into PC7 condition (5) of Rule 5.140. To ensure consistency of activity restrictions, it is also recommended to introduce these requirements into condition (5) of Rule 5.151.\(^{512}\)

Rules 5.115 and 5.120: New matters of discretion

5.202. PC7 introduces a new matter into restricted discretionary Rule 5.115 (matter (11)) and Rule 5.120 (matter (3)) as follows: “the potential adverse effects on significant habitats of indigenous fauna and flora.” Rule 5.115 controls the taking and using of water for a community water supply, and Rule 5.120 controls the taking of groundwater for dewatering and the associated use and discharge of that water.

Submissions

5.203. A total of thirteen submissions were received on both rules, although the majority are not on the new restricted discretionary matters. There are three submissions on Rule 5.115 and four submissions on Rule 5.120.

5.204. Cashmere Stream Care Group\(^{513}\) supports Rule 5.120 as notified without any reasoning. DOC\(^{514}\) seeks to retain Rules 5.115 and 5.120 as notified, stating that it is appropriate that potential adverse effects on significant habitats are given particular consideration as part of the resource consent process under these rules.

5.205. Beef + Lamb\(^{515}\) seeks the deletion of the new matter of discretion in Rule 5.115, stating that more clarity is needed around what is ‘significant habitats of indigenous fauna and flora’, how this habitat is identified and by whom, what relationship if any this has to wider policy or legislation, what the wider implications are for land users, and what the procedures are to challenge the identification of a significant habitat of indigenous fauna and flora.

5.206. Timaru DC\(^{516}\) seeks that the matter in Rules 5.115 and 5.120 is amended to reference Indigenous Freshwater Species Habitat rather than “significant habitats of indigenous fauna and flora”, and questions why the potential adverse effects on the mapped habitats has not been utilised in these rules as it has throughout the rest of the plan.

\(^{511}\) Fulton Hogan (PC7-428.6, PC7-428.7)
\(^{512}\) Ravensdown
\(^{513}\) PC7-193.9
\(^{514}\) PC7-160.13, PC7-160.14
\(^{515}\) PC7-214.55
\(^{516}\) PC7-292.20, PC7-292.22
5.207. Four submitters, including Federated Farmers\textsuperscript{517} seek the deletion of reference to Indigenous Freshwater Species Habitat in Rule 5.120 due to reasons discussed in the section "General submissions on mapped Indigenous Freshwater Species Habitat".

**Analysis**

5.208. In response to Timaru DC and Beef + Lamb, I agree that referring to the mapped habitats of indigenous freshwater species in the matters of Rules 5.115 and 5.120 would provide more certainty for plan users in a resource consent process. This amendment would more effectively implement Policies 4.61A and 4.101.

5.209. I note that PC7 Rule 5.120 does not currently refer to Indigenous Freshwater Species Habitat, but these submissions have been considered in forming the recommendation for PC7 Rule 5.120 to introduce the term.

**Recommendation**

5.210. Amend the matter in Rules 5.115 and 5.120 to reference Indigenous Freshwater Species Habitat rather than "significant habitats of indigenous fauna and flora". \textsuperscript{518}

**Miscellaneous**

5.211. This section of the report considers any specific decisions sought in submissions on the PC7 provisions covered in this ‘habitats of indigenous freshwater species’ topic other than those (provisions and/or decisions sought) covered in the preceding sub-sections of this topic.

5.212. This includes any submissions on amendments to Rules 5.138, 5.141, 5.141A, 5.148, 5.149, 5.150 to clarify that artificial waterways are subject to the discharge and diversion activity restrictions, but not the section 13 RMA land use activity restrictions in the rules, amendments to Rules 5.136, 5.137, 5.140, 5.151, 5.152 to improve the readability of the rule, and the introduction and deletion of Rules 5.152A and 5.153 respectively to improve the ‘drop-out’ rule associated with the permitted activity rules for ‘Gravel from lake and riverbeds’.

**Rules 5.138, 5.141, 5.141A, 5.148, 5.149, 5.150 – Artificial waterways**

5.213. Greenstreet Irrigation Society\textsuperscript{519}, Ashburton River Irrigators Association\textsuperscript{520} and Federated Farmers\textsuperscript{521} seek that the activity status of Rule 5.141A is changed from discretionary to restricted discretionary, and new matters of discretion are introduced into the rule to cover the conditions of Rule 5.135 to 5.141. No reason is provided for the relief sought.

5.214. The activity status of discretionary for Rule 5.152A is considered appropriate as the rules manage several types of activities, including disturbance of the bed to install temporary structures, temporary diversion of water and temporary discharges, and accordingly the effects of the activities are so variable that it is not possible to prescribe standards to control them in advance. In addition, the discretionary status is the same stringency as the deleted

\textsuperscript{517} PC7-430.305
\textsuperscript{518} Timaru DC (PC7-292.20, PC7-292.22)
\textsuperscript{519} PC7-312.54
\textsuperscript{520} PC7-343.37
\textsuperscript{521} PC7-430.54
'drop out' Rule 5.153, and other rules that manage activities in the bed, for example Rules 5.141A and 5.150.

**Rules 5.152A and 5.153 – Drop-out rule**

5.215. Timaru DC\(^5\) supports Rule 5.152A but seeks that any amendments are not any more restrictive than currently proposed as the rule may have effects on the construction and maintenance of its community water supply infrastructure.

5.216. Federated Farmers\(^5\) seeks that the activity status of PC7 Rule 5.152A is changed from discretionary to restricted discretionary, and new matters of discretion are introduced into the rule to cover the conditions of Rule 5.151 and 5.152. No reason is provided for the relief sought.

5.217. The activity status of discretionary for Rule 5.141A is considered appropriate as the rules manage several types of activities, including disturbance of the bed associated with structures, diversion of water and discharges of contaminants into water, and accordingly the effects of the activities are so variable that it is not possible to prescribe standards to control them in advance. In addition, the discretionary status is the same stringency as other rules that manage similar activities, for example Rules 5.141A and 5.153.

**Rules 5.136, 5.137, 5.140, 5.151, 5.152 – Rule descriptor amendments**

5.218. Rooney Earthmoving\(^5\) and South Canterbury Gravel Extracting Industry oppose PC7 Rule 5.136 due to concerns that amendments restrict the existing activities provided in the rule such as creating bird islands, habitat enhancement and erosion protection. The submitter states that there does not appear to be an additional rule which would enable these enhancement activities to occur, and accordingly they are less likely to occur.

5.219. Forest & Bird\(^5\) considers that ‘Structures’ Rules 5.136 and 5.137 should not have a permitted activity status due to concerns regarding the protection of inanga habitat.

5.220. All other themes raised in submissions on Rules 5.136, 5.137, 5.140, 5.151, 5.152 are covered in the previous sub-sections of this topic.

5.221. The amendments to the rule descriptor (i.e. the “chapeau”) of Rule 5.136 mean that any drilling, tunnelling or disturbance of the bed of a lake or river undertaken as a permitted activity under this rule must now be associated with the installation or removal of pipes, ducts, cables or wires. I do not agree that existing Rule 5.136 is the appropriate entry rule for activities such as creating bird islands and habitat enhancement given that the rule is grouped with the CLWRP ‘Structures’ rules, and condition (4) or Rule 5.136 requires the bed to be returned to its original contour within 30 days of the completion of the activity. The submitters’ mention of erosion protection works (defences against water) are provided for under permitted activity Rule 5.138. Furthermore, existing Rules 5.146A and 5.146B refer to the disturbance of the bed and banks of a river to remove fine sediment for the sole purpose of habitat restoration. Accordingly, no amendments are recommended to provide relief to the concerns raised by Rooney Earthmoving and South Canterbury Gravel Extracting Industry.

\(^5\)PC7-292.34
\(^5\)PC7-430.57
\(^5\)PC7-392.1
\(^5\)PC7472.59, PC7-472.60
5.222. In response to Forest & Bird, the references in provisions to ‘inanga spawning habitat’ are not introduced or amended by PC7, and so an assessment of the cultural, environmental, social and economic implications of a more stringent rule classification has not been undertaken in PC7. In the absence of this assessment, and indeed if this is within the scope of PC7, I do not consider that this submission point be accepted.

**Recommendation**

5.223. No amendments are recommended to PC7 Rules 5.152A and 5.153 as notified.

5.224. No amendments are recommended to PC7 Rules 5.136, 5.137, 5.140, 5.151, 5.152 associated with improvements to the rule descriptor. However, there may be recommended amendments to these rules in response to themes raised in the previous sub-sections of this topic.
6. Hinds Drains Working Party Recommendations\textsuperscript{526}

Introduction

6.1. This section of the report discusses the amendments to the CLWRP proposed in Part A of PC7 to incorporate the recommendations of the Hinds Drains Working Party relating to the Hinds/Hekeao Plains Area.

6.2. The Hinds Drains Working Party was established by the Ashburton Water Management Zone Committee and tasked with developing a management approach for the main waterbodies of the Lower Hinds/Hekeao Plains Area to address water quality and quantity issues. The Hinds Drains Working Party provided their recommendations document\textsuperscript{527} to the Ashburton ZC in 2015. These were then provided to Environment Canterbury for action but due to timing constraints were not able to be addressed in Plan Change 2 to the CLWRP\textsuperscript{528}. PC7 Part A responds to the recommendations of the Hinds Drains Working Party.

6.3. The Hinds Drains Working Party’s recommendations for amending provisions in the CLWRP include:

- Improving the ability to switch from an existing surface water or stream depleting groundwater take to a non-stream depleting groundwater take in the Lower Hinds/Hekeao Plains Area, and in particular within a new area called ‘Hinds Coastal Strip Zone’;
- Excluding stock from the sections of Hinds Drains identified as ‘Main and Secondary Hinds Drains’;
- Setting the minimum flows and allocation limits for Windermere, Home Paddock and Deals Drains; and
- Extending the timeframe to collaboratively develop flow and allocation regimes for all other Hinds Drains from 1 July 2025 to 1 July 2030.

6.4. PC7 provisions to incorporate the recommendations of the Hinds Drains Working Party include:

- New definition of “Hinds Coastal Strip Zone”
- New definition of “Main and Secondary Hinds Drain”
- New Policies 13.4.5A and 13.4.24
- Amendments to Policies 13.4.11, 13.4.22 and 13.4.23
- New Rule 13.5.30A
- Amendments to Rules 13.5.26, 13.5.30 and 13.5.31
- Amendments to Table 13(e) – Lower Hinds / Hekeao Plains Area Environmental Flow and Allocation
- New Table 13(ea) – Environmental Flow and Allocation Limits for Windermere, Home Paddock and Deals Drains
- Amendments to Planning Maps:
  - B-092 to add a new layer ‘Hinds Coastal Strip Zone’
  - B-084 and B-092 to add a new layer ‘Main and Secondary Hinds Drain’

\textsuperscript{526} This section is authored by Andrea Richardson.

\textsuperscript{527} Supporting document for the Section 32 Report

\textsuperscript{528} Plan Change 2 to the CLWRP (operative from 1 June 2018) introduced provisions into Section 13 to address the recommendations of the Ashburton ZC expressed in the Zone Implementation Plan Addendum. The provisions manage the use of land and water resources in the Hinds/Hekeao catchment.
6.5. The submissions relating to these provisions have been grouped into and considered according to the following topics:

- Swapping to deep groundwater, including in the Hinds Coastal Strip Zone;
- Stock exclusion from Main and Secondary Hinds Drains; and
- Setting minimum flow and allocation limits.

### Swapping to deep groundwater, including in the Hinds Coastal Strip Zone

**Introduction and Provisions**

6.6. PC7 introduces a new definition of ‘Hinds Coastal Strip Zone’, new Policies 13.4.5A and 13.4.24, a new Rule 13.5.30A. In addition, amendments are made to Rules 13.5.30 and 13.5.31, and to Planning Map B-092 to add the new layer ‘Hinds Coastal Strip Zone’.

6.7. Existing Rule 13.5.30 controls the taking and use of groundwater within the Valetta and Mayfield-Hinds Groundwater Allocation Zones that will substitute an existing surface water or groundwater permit with a direct, high or moderate stream depletion effect as a restricted discretionary activity. The activity is prohibited under existing Rule 13.5.31 if any conditions of Rule 13.5.30 are not met. The conditions of the rule include compliance with the T allocation limits in Table 13(f).

6.8. Policy 13.4.5 directs that to address the current over-allocation of surface water in the Hakatere/Ashburton catchment and the Lower Hinds/Hekeao Plains area, taking of deep groundwater (from the T allocation block) is enabled on the proviso that the surface water or stream depleting groundwater take is surrendered.

6.9. There are currently 13 groundwater consents with a stream depletion effect in the Hinds Coastal Strip Zone (defined and mapped in PC7) which are currently not subject to minimum flows. The CLWRP requires minimum flows on these water takes either through expiry and replacement of their current consent, or in the event Council chose to undertake a review of their current consent. Due to low flows in the Hinds Drains (or in some cases no flow), reliability will be poor when subject to minimum flows. It is anticipated that these consent holders may wish to “swap” their existing takes for deep groundwater available in the T allocation block as it may be more reliable.

6.10. The Hinds Drains Working Party highlighted issues with unreliable sources of irrigation water in the Hinds Coastal Strip Zone, which is an area delineated due to sandy soils found at deep levels. The Hinds Drains Working Party recommendations state that these sandy soils can impact on the reliability of deep groundwater and potentially cause pump failure due to sand ingress, surface water takes are unreliable and many shallow groundwater takes do not have minimum flow conditions on their consent. The Party recommends a 3 year period is provided for consent holders in this area to establish a reliable yield from the deep bores.

6.11. The current rules in Section 13 (Rules 13.5.30 and 13.5.31) do not provide for consent holders to retain a portion of their existing surface water or hydraulically connected groundwater take if they abstract deep groundwater from the T allocation.

6.12. In response to this first issue, PC7 introduces a new policy (Policy 13.4.24) that requires recognition of the difficulties in obtaining reliable deep groundwater in the Hinds Coastal Strip Zone and provides for a partial substitution of surface water or stream depleting groundwater...
takes, and a transition period of 36 months to establish the reliability of the deep groundwater take.

6.13. The Hinds Drains Working Party has also indicated that some consent holders in the Lower Hind/Hekeao Plains Area cannot swap their existing take to a T allocation block take due to well interference effects on surrounding bores condition (3) of Rule 13.5.30: “the bore interference effects are acceptable, as determined in accordance with Schedule 12”. If this condition is not met, the swapping of an existing take to deep groundwater is prohibited.

6.14. In response to this second issue, PC7 introduces new Policy 13.4.5A, which states:

*When addressing over-allocation of surface water in the Lower Hinds/Hekeao Plains Area and when considering ‘acceptable bore interference effects’ for resource consent applications to take and use deep groundwater, regard shall be had to the potential for improvements to surface water flows and the economic impacts on any other authorised abstractions.*

6.15. PC7 amends Rules 13.5.30 and 13.5.31 and adds a new non-complying Rule 13.5.30A to implement new Policies 13.4.5A and 13.4.24. Condition (6) of Rule 13.5.30 specifically provides for concurrent use of surface water and groundwater permits within the Hinds Coastal Strip Zone. As these rules are amended to respond to both issues, the submissions on both issues have been grouped together.

### Definition of Hinds Coastal Strip Zone and Planning Maps

**Submissions**

6.16. HHWET, Hinds Drains Working Party and Federated Farmers support the new definition ‘Hinds Coastal Strip Zone’. There are no submissions seeking amendment or deletion of this new definition or the new ‘Hinds Coastal Strip Zone’ layer in the Planning Maps.

**Recommendation**

6.17. Retain the definition ‘Hinds Coastal Strip Zone’ and associated Planning Maps as notified.

### Policies 13.4.5A and 13.4.24

**Submissions**

6.18. Submitters are mixed in their support for Policies 13.4.5A and 13.4.24. Some submitters support Policies 13.4.5A and 13.4.24 as notified.

---

529 PC7-345.9  
530 PC7-394.9  
531 PC7-430.157  
532 For example; HHWET (PC7-345.11, PC7-345.15), Hinds Drains Working Party (PC7-394.11, PC7-394.15), Federated Farmers (PC7-430.159, PC7-430.164).
6.19. Forest & Bird\textsuperscript{533} seeks the deletion of these policies, stating their objection to consent applications to take deep groundwater that will have a stream depletion effect and questioning what bore interference effects are acceptable.

6.20. HHWET supports new Policy 13.4.24, stating that in locations near the coast where deep wells frequently have problems associated with ingress of sand, the option of retaining some or all of a surface or shallow groundwater take for a period of time (36 months) will allow for full development of a deep bore.

6.21. Aotearoa Water Action\textsuperscript{534} opposes the broad approach in PC7 of providing for abstractors to move from surface water or stream depleting groundwater takes to deep groundwater, stating evidence of environmental damage caused by long-term abstraction of deep groundwater, including ground-level collapse, salination, loss of aquifer pressure and consequent drawdown of polluted water into lower levels of groundwater. CDHB\textsuperscript{535} is also concerned about enabling consent holders to “swap” their existing takes for deep groundwater, stating that it may increase the distribution of drinking-water determinands of health concern such as nitrate in the aquifer.

6.22. Bowden Environmental\textsuperscript{536} seeks the deletion of Policy 13.4.5A, questioning the intent of some policy phrases and citing concerns that the reliability of existing groundwater users will be ignored for the benefit of the surface waterbody. The submitter considers that well interference effects approaching 25% of the total available drawdown may have substantial impacts on existing groundwater users and that the reliability of existing users should not be reduced beyond the thresholds set out in Schedule 12\textsuperscript{537}.

Analysis

6.23. In response to submissions that oppose the concept of switching to deep groundwater, I note that the T-Allocation limit and provisions for taking groundwater within this limit form part of the existing provisions and were introduced through Plan Change 2 to the CLWRP (Section 13, Hinds/Hekeao Plains catchment). The appropriateness of the provisions and the T allocation limit were considered during that plan change process and were considered sufficient to avoid the types of effects raised by Aotearoa Water Action and CDHB.

6.24. Plan Change 2 to the CLWRP provided for switching from surface water or hydraulically connected groundwater to deep groundwater in the Valetta and Mayfield-Hinds Groundwater Allocation Zones, established ‘T’ block allocations, introduced a new definition of deep groundwater as ‘groundwater that is abstracted from a depth of at least 80 m below ground level’, and provided policy direction under Policy 13.4.6. Section 7.2 of the decisions report for Plan Change 2\textsuperscript{538} describes the issues and hearing panel decisions on provisions and matters raised in submissions on this topic.

\textsuperscript{533}PC7-472.135, PC7-472.142
\textsuperscript{534}PC7-209.5
\textsuperscript{535}PC7-347.14
\textsuperscript{536}PC7-84.32, PC7-84.33, PC7-84.34
\textsuperscript{537}Schedule 12 of the CLWRP provides the method for calculation of well interference effects and states: ‘An “acceptable” direct cumulative interference effect is when the direct cumulative interference effect is no greater than 20% of the total available drawdown at times of low water level that is exceeded 80% of the time during the period of proposed water use, having taken into account individual bore and pump installation details’.  
\textsuperscript{538}Report and Recommendations of the Hearing Commissioners for proposed Plan Change 2 to the CLWRP, Section 7.2, paras 430-440, https://api.ecan.govt.nz/TrimPublicAPI/documents/download/3137411
6.25. There is a large percentage of unallocated T Block groundwater within the Valetta and Mayfield-Hinds GAZs. Table 13(f): Ashburton Groundwater Limits/Targets sets out T-Allocation limits for Valetta GAZ (33 million m$^3$/yr) and Mayfield-Hinds GAZ (28.3 million m$^3$/yr). The taking of groundwater within the T-Allocation limit is governed by Rule 13.5.30. In the Mayfield-Hinds GAZ, there are currently 639 six consents to take water within this T Block, with a combined allocated volume of approximately 3.5 million m$^3$/yr (equating to approximately 12% of the available T Block). In the Valetta GAZ there are currently 21 issued T Block consents and three consent applications in process. Of these consents, the allocated (issued) volume is approximately 8.9 million m$^3$/yr (27% allocated), and another 0.9 million m$^3$/yr in process.

6.26. In response to CDHB, when considering distribution of contaminants in groundwater, contaminants will follow the flow of groundwater (and spread out due to other factors). Within an aquifer, there is normally two primary ‘gradients’ that determine flow direction – lateral (or horizontal) and vertical. The lateral gradient is what is usually referred to and points to the direction of groundwater flow. However, many aquifers also have vertical gradients which are not normally discussed. Often these are small compared to the lateral gradients and can be in a downward direction (if in a recharge area) or upward (in a discharge area, artesian setting). Pumping from a deep well in a deeper zone of the aquifer will induce/increase a downward vertical gradient. Because of this added vertical gradient, contaminants would be drawn from the shallower zones into deeper zones of the aquifer. There are a number of factors that would determine if this effect would be significant or negligible.540

6.27. I agree with the comments from Bowden Environmental541 that there is uncertainty in some phrases in Policy 13.4.5A, and that this policy could be deleted. I consider that the policy does not provide clear guidance to a decision maker over and above the existing policies (including 4.59 and 13.45 to 13.4.7). The concerns raised by Bowden Environmental regarding well interference effects are discussed in the following section that analyses submissions on Rules 13.5.30 to 13.5.31.

6.28. In response to Forest & Bird542, moving surface and stream depleting takes to ‘deep groundwater’ may decrease reductions in surface flow in affected Hinds Drains during times of heavy use, in particular during the irrigation season. Any increase in surface water flow will likely have a positive ecological effect to the drains543. However, to ensure Policy 13.4.24 does not inadvertently enable increased stream depletion, I recommend amending the phrase in clause (a) of this policy from ‘proposed take’ to ‘combined take’.

6.29. Clause (b) of Policy 13.4.24 provides a period of time (36 months) for consent holders to allow for full development of a deep bore in the Hinds Coastal Strip Zone. This was recommended by the Hinds Drains Working Party544 and is the basis of HHWET’s submission in support of Policy 13.4.24. However, I am unconvinced that there is technical justification for needing this time period. Providing for partial substitution of a surface water or stream depleting groundwater take may not achieve the community goal of increasing surface water flows in the Hinds Drains. In addition, bore testing may be undertaken as a permitted activity545.

539 As determined on 15 January 2020
540 This paragraph is written by Mark Trewartha, Environment Canterbury Groundwater Scientist
541 PC7-84.32, PC7-84.33, PC7-84.34
542 PC7-472.135, PC7-472.142
543 Supporting section 32 document ‘Technical Work for the Hinds/Hekeao Plains Area’
544 Recommendation 4.6: Option 3
545 CLWRP Rule 5.104
Therefore, in the absence of any evidence provided at the hearing, I would find it difficult to support this transition period in Policy 13.4.24.

Recommendation

6.30. Delete Policy 13.4.5A.

6.31. Amend Policy 13.4.24, as shown in Appendix E.

Rules 13.5.30, 13.5.30A and 13.5.31

Submissions

6.32. The majority of submitters on PC7 Rules 13.5.30, 13.5.30A and 13.5.31 seek amendments, other than Eiffelton Community Group Irrigation Scheme who supports Rule 13.5.30 and Federated Farmers who supports Rules 13.5.30A and 13.5.31.

6.33. Bowden Environmental seeks the deletion of the conditions of non-complying Rule 13.5.30A and consequential amendments to prohibited activity Rule 13.5.31, citing concerns that the reliability of existing groundwater users will be ignored for the benefit of the surface waterbody. The submitter considers that well interference effects approaching 25% of the total available drawdown may have substantial impacts on existing groundwater users and that the reliability of existing users should not be reduced beyond the thresholds set out in Schedule 12.

6.34. M Bubb opposes the deletion of condition (2) of Rule 13.5.30 as it would place more reliance on (existing) condition (5) of Rule 13.5.30 which requires a resource consent application to demonstrate that the (deepened) groundwater take is not from ‘stream depleting groundwater’ as defined in the CLWRP. The submitter states that condition (5) is too restrictive and would prevent the change from surface water or shallow groundwater to deeper bores because ‘stream depleting groundwater’ includes a groundwater take with a low stream depletion effect and demonstration of no stream depletion is not usually possible, meaning the activity is prohibited under Rule 13.5.31.

6.35. Similarly, HHWET and Federated Farmers seek amendments to Rule 13.5.30 such that conditions (2) and (5) only prohibit takes with direct or high stream depletion effects.

---

546 PC7-11.4
547 PC7-430.169, PC7-430.170
548 PC7-84.32, PC7-84.33, PC7-84.34
549 Schedule 12 of the CLWRP provides the method for calculation of well interference effects and states: ‘An “acceptable” direct cumulative interference effect is when the direct cumulative interference effect is no greater than 20% of the total available drawdown at times of low water level that is exceeded 80% of the time during the period of proposed water use, having taken into account individual bore and pump installation details’.
550 PC7-527.1
551 Section 2.9 definition of stream depleting groundwater “means groundwater abstraction that has a direct, high, medium or low stream depletion effect, calculated in accordance with Schedule 9 of this Plan.”
552 PC7-345.16
553 PC7-430.168
6.36. HHWET\textsuperscript{554}, Federated Farmers\textsuperscript{555} and Aqualinc Research\textsuperscript{556} seek that condition (6) of Rule 13.5.30 is amended to:

a. apply only to applications that will retain a portion of their existing surface water or stream depleting groundwater take, as if nothing is to be retained then the activity is the same as those located outside of the Hinds Coastal Strip Zone;

b. remove the requirement for surrender of the existing water permit concurrently with the application as this does not support the holding of the surface water or stream depleting groundwater take for a period of time to see if the deep bore is reliable;

c. remove the requirement for bore disestablishment;

d. allow up to 36 months after the issue of the new groundwater consent to abstract water at a greater combined volume or rate than the existing consent; and

e. refer to a combined ‘stream depletion effect’ rather than ‘volume’.

6.37. Forest & Bird\textsuperscript{557} opposes Rules 13.5.30 and 13.5.30A, requesting that they be rewritten in clearer language and “require the bore to be disestablished concurrently with any new consent”.

\textit{Analysis}

6.38. I note that the PC7 deletion of condition (2) of Rule 13.5.30 is intended to address potential duplication/conflict between existing conditions (2) and (5). Under existing Rule 13.5.30, if the deepened (substituted) take is not from deep groundwater but has a moderate or low stream depletion effect, it will not meet condition (5) as it is stream depleting, and accordingly will be prohibited under Rule 13.5.31.

6.39. I agree with M Bubb\textsuperscript{558} that there are difficulties with demonstrating no stream depletion effect, as the assessments used almost always show some connection, even though that may be very low. Accordingly, I agree that prohibiting groundwater takes with a low stream depletion effect could have the unintended consequence of preventing surface and shallow groundwater takes from going to deeper groundwater. To address this issue, I recommend amending Rule 13.5.30 to provide for groundwater takes with a low stream depletion effect as a restricted discretionary activity.

6.40. I agree with Bowden Environmental\textsuperscript{559} that well interference effects approaching 25% of the total available drawdown may have substantial impacts on existing groundwater users but are mindful not to frustrate the objectives of provisions to enable switches to deep groundwater. If a groundwater take with a low stream depletion effect does not have bore interference effects determined as ‘acceptable’ in accordance with Schedule 12\textsuperscript{560}, I consider it is appropriate for the take to be assessed as a non-complying activity so that the difference in stream depletion effect between the existing and proposed takes can be considered on a case by case basis during the consent application process. This is because the degree of stream depletion sits within a band (determined in accordance with Schedule 9 of the CLWRP), meaning that both the existing and proposed takes could have a low degree of stream depletion effect but numerically the proposed take could have a lesser stream depletion effect.
effect. Therefore, I recommend that Rules 13.5.30A and 13.5.31 are amended to provide a non-complying activity pathway if bore interference effects are beyond the ‘acceptable’ Schedule 12 threshold and enable an affected person assessment under Section 95E of the RMA.

6.41. In response to the submissions from HHWET and Federated Farmers, I disagree that a prohibited activity status for groundwater takes with moderate stream depletion effects is too restrictive. I consider a prohibited activity status is appropriate to meet the community outcomes to increase surface water flows in the Lower Hinds/Hekeao Plains Area as directed by Policies 13.4.5 and 13.4.6 of the CLWRP.

6.42. In response to HHWET’s submission that condition (6) of Rule 13.5.30 should refer to a combined ‘stream depletion effect’ rather than ‘volume’, I note that referring to both rate of take and annual volume aligns with the requirements for implementation of water allocation regimes as set out in Schedule 13 of the CLWRP, and the prevention of further allocation of water in over allocated catchments as directed by Policy 4.50. On this basis, I recommend rejecting this relief.

6.43. In response to Forest & Bird, I have recommended some amendments to Rules 13.5.30 and 13.5.30A to improve readability. This includes amending the rules to refer to ‘partially or fully substituted’ for takes in the Hinds Coastal Strip Zone.

6.44. Regarding submissions on bore disestablishment concurrently with any new consent, this requirement is linked to the provision of a 36 month transition period for takes in the Hinds Coastal Strip Zone. However, as per the previous discussions on Policy 13.4.24 (paragraph 6.18 onwards), I find it difficult to support this transition period.

Recommendation

6.45. Amend Rules 13.5.30, 13.5.30A and 13.5.31, as per the tracked changes in Appendix E.

Stock exclusion from Main and Secondary Hinds Drains

Introduction and Provisions

6.46. This section discusses the proposed provisions in Part A of PC7 that introduce additional requirements for the exclusion of stock from ‘Main and Secondary Hinds Drains’ in sub-regional Section 13 of the CLWRP.

6.47. PC7 proposes to introduce a new definition of ‘Main and Secondary Hinds Drain’, amend Policy 13.4.11 and Rule 13.5.26, and add a new layer ‘Main and Secondary Hinds Drain’ into Planning Maps B-084 and B-092.

6.48. Policy 13.4.11 applies in addition to the existing region-wide policies (4.31 and 4.32), and is implemented through Rule 13.5.26, which extends the application of the region-wide stock exclusion rules (5.68A, 5.68B, 5.68, 5.69, 5.70 and 5.71) to also apply to a drain. However, Rule 13.5.26 (and therefore stock exclusion in the Hinds Drains) does not apply to sub-surface drains or drains that do not have surface water in them.
6.49. The regional stock exclusion rules relate to the use and disturbance of the bed (including the banks) of a lake, river or a wetland by stock and any associated discharge to water, and:
   a. Only permit this use and disturbance where it is for stock crossing, and in certain limited circumstances (Rule 5.68);
   b. Where the use and disturbance relate to “intensively farmed stock” (as defined in the CLWRP), and to the bed of a lake or wetland, or a river that meets specified parameters, it is a non-complying activity (Rule 5.70);
   c. The use and disturbance are prohibited where it relates to farmed cattle, deer or pigs, and to the bed of a river or lake, in specified areas such as salmon spawning sites, and Community Drinking-water Protection Zones (Rule 5.71).

6.50. The Hinds Drains Working Party recommended\textsuperscript{561} that the region-wide stock exclusion rules should apply to ‘Main and Secondary Hinds Drains’ irrespective of whether there is water in the waterway.

6.51. The Hinds Drains Working Party mapped the alignment of each Hinds Drain and then classified it (variable along its length) as a Main, Secondary, Side Cut, Intermittent or Dongas drain. These maps were included in their recommendation document and were replicated for the PC7 Planning Map layer ‘Main and Secondary Hinds Drain’.

Submissions and Analysis

6.52. Several submitters, including Ngā Rūnanga\textsuperscript{562}, HHWET\textsuperscript{563}, Hinds Drains Working Party\textsuperscript{564} and Fish & Game\textsuperscript{565} support the provisions as notified.

6.53. Eiffelton Community Group Irrigation Scheme\textsuperscript{566} considers that the definition of Main and Secondary Drain should refer to the Hinds Drains Working Party recommendations for identification of the drains that the stock exclusion applies to. Federated Farmers\textsuperscript{567} state they are supportive of the definition and new planning map layer that identifies which sections of drain are Main and Secondary Drain provided it reflects the maps provided in the Hinds Drains Working Party recommendations.

6.54. I do not consider a change to the provisions is required to satisfy the concerns raised by Eiffelton Community Group Irrigation Scheme and Federated Farmers as the planning map layer was developed using the maps in the Hinds Drains Working Party recommendations.

6.55. CDHB\textsuperscript{568} supports the intent of the amended provisions to help reduce microbial contamination of the sections of Hinds Drains that are classified as ‘main or secondary’ but suggest that other mechanisms should be considered in Farm Environment Plans for all other drains i.e. the drains classified as Side Cut, Intermittent and Dongas in the Hinds Drains Working Party recommendations.

\textsuperscript{561} Section 3.3 of the Hinds Drains Working Party recommendations, page 13
\textsuperscript{562} PC7-423.94
\textsuperscript{563} PC7-345.10, PC7-345.12
\textsuperscript{564} PC7-394.10, PC7-394.12
\textsuperscript{565} PC7-351.26, PC7-95.88, PC7-351.29, PC7-95.91
\textsuperscript{566} PC7-11.1
\textsuperscript{567} PC7-430.158, PC7-430.160, PC7-430.167
\textsuperscript{568} PC7-347.13
6.56. In response to the submission from CDHB, I note that Schedule 7 contains additional livestock management requirements for Farm Environment Plans in the Hinds/Hekeao Plains to exclude stock as far as practicable from water\(^{569}\). The Hinds Drains Working Party recommendations\(^{570}\) for riparian management also include non-statutory land owner guidance for Farm Environment Plans that cattle, deer, pigs, horses and intensively grazed sheep should be prevented access to the Hinds Drains. I consider that this may be sufficient to address the concerns raised by CDHB.

6.57. Forest & Bird\(^{571}\) requests that clause (b) of Policy 13.4.11 is amended to exclude all farmed animals from the Hinds Drains (not just farmed cattle, deer and pigs), reasoning that all animals have the potential to carry microbial contaminants. It supports the amendments to Rule 13.5.26 as notified.

6.58. In response to Forest & Bird, I note that Policy 13.4.11 is implemented by Rule 13.5.26 and the region-wide stock exclusion Rules 5.68 to 5.71. Rules 5.68 and 5.69 apply to all farmed animals and Rules 5.70 and 5.71 only apply to farmed cattle, deer and pigs. Therefore, I agree in part that PC7 Policy 13.4.11 does not clearly direct that the new restrictions for Main and Secondary Hinds Drains apply to all region-wide stock access provisions (Rules 5.68 to 5.71). This could be resolved by amending Policy 13.4.11 clause (a) to explicitly state that the region-wide stock exclusion rules also apply to any Main and Secondary Hinds Drain irrespective of whether water is present in the drain.

6.59. As outlined in the response to the CDHB submission on stock access, other mechanisms in Schedule 7 of the CLWRP are available to address the impacts of other types of stock, and accordingly I do not agree with Forest & Bird that clause (b) of Policy 13.4.11 should be amended.

6.60. Beef + Lamb\(^{572}\) consider that Rule 13.5.26 should be amended to specify the stock access rules apply to "...any other drain that permanently has water in it...". They raise concerns that should a rain event cause drain to rapidly fill with water, under the current rule wording a land owner may be in breach of the stock exclusion rules if they were not able to exclude stock in time.

6.61. I disagree with Beef + Lamb that Rule 13.5.26 should be amended to add "permanently" as this would weaken the existing stock exclusion requirements for the Hinds Drains, in particular for ephemeral or intermittently flowing drains that have water in them. I consider that there is no change in the stringency between the operative rule wording of "does not include ... drain that does not have water in it" and the PC7 rule wording of "drain that has water in it" and therefore recommend that the rule is retained as notified.

**Recommendation**

6.62. Retain the definition of ‘Main and Secondary Hinds Drain’, Rule 13.5.26 and Planning Map B-084 as notified.

---

\(^{569}\) Schedule 7, Part B, clause (8)(f): Livestock management: To manage wetlands and water bodies so that stock are excluded as far as practicable from water, to avoid damage to the bed and margins of a waterbody, and to avoid the direct input of nutrients, sediment, and microbial pathogens.

\(^{570}\) Recommendation 4.10 of the Hinds Drains Working Party recommendations, page 34

\(^{571}\) PC7-472.136

\(^{572}\) PC7-214.104
6.63. Amend Policy 13.4.11 relating to stock access restrictions from Main and Secondary Hinds Drains as shown in the tracked changes version of PC7 in Appendix E.

6.64. Delete the underline beneath the text “Policy 13.4.11” as this is a minor error (underlining indicates a new provision and is not required for an amendment to an existing provision).

6.65. Delete the GIS layer ‘Surface Water Allocation Zone’ in PC7 Planning Map B-092 as this is showing in error and is not introduced or amended by PC7.

Setting minimum flow and allocation limits

Introduction and Provisions

6.66. The relevant provisions include amendments to Policies 13.4.22 and 13.4.23 to extend the timeframe for setting the flow and allocation regime, amendments to Table 13(e), and the introduction of new Table 13(ea) which sets the minimum flows and allocation limits for Windermere, Home Paddock and Deals Drains.

Submissions

6.67. Ngā Rūnanga, Federated Farmers and Fish & Game support the PC7 provisions relating to setting minimum flow and allocation limits. Eiffelton Community Group Irrigation Scheme highlight its support of new Table 13(ea) that sets the flow and allocation regime for Windermere, Home Paddock and Deals Drains.

6.68. HHWET and Hinds Drains Working Party support the intent of Policy 13.4.23 and state that managed aquifer recharge will likely have a positive effect on environmental flows in the Hinds Drains and the ongoing work by the Hinds Drains Working Party will provide more data on biodiversity enhancement, resulting in better informed decisions approaching 2030 than can be made at this time. HHWET seeks that the policy be amended to specify what it considers to be the latest possible starting date for the collaborative flow and allocation regime process - beginning in 2025 at the latest. Hinds Drains Working Party seeks that Policy 13.4.23 is amended to specify that the collaborative process commences after July 2030 and reference to the ‘default’ flow regime is deleted.

6.69. Forest & Bird opposes the new timeframe of 2030 referred to in Policies 13.4.22 and 13.4.23, and although the submission provides a discussion of its broad concerns with PC7, there are no specific reasons provided for its opposition to Policies 13.4.22 and 13.4.23.

---

573 Forest & Bird (PC7-472.136)
574 Clause 16, Schedule 1 of the RMA minor amendment
575 Clause 16, Schedule 1 of the RMA minor amendment
576 PC7-423.94
577 PC7-430.175, PC7-430.176, PC7-430.162, PC7-430.163
578 PC7-351.30, PC7-95.92, PC7-351.27, PC7-95.89, PC7-351.28, PC7-95.90
579 PC7-11.0; PC7-11.3
580 PC7-345.14
581 PC7-394.17
582 A minimum flow of 50% 7DMALF and an allocation limit of 20% 7DMALF
583 PC7-472.140, PC7-472.141
Analysis

6.70. In response to the submissions from HHWET and Hinds Drains Working Party, I consider that setting any timeframes around commencement of a collaborative community process is unnecessarily restrictive. I consider the deletion of the ‘default’ flow regime would provide no certainty for plan users on an appropriate regime from 1 July 2030 in the event that a collaboratively developed flow and allocation regime is not included in the CLWRP prior to 1 July 2030.

6.71. In the absence of reasons in Forest & Bird’s submission relating to the timeframe for setting the collaboratively developed regime in Policies 13.4.22 and 13.4.23, no changes are recommended.

Recommendation

6.72. Retain Policies 13.4.22 and 13.4.23, and Tables 13(e) and 13(ea) as notified.
7. **Managed Aquifer Recharge**

**Introduction and Provisions**

7.1. This section of the Section 42A Report addresses submissions relating to Managed Aquifer Recharge (MAR). PC7 introduces new region-wide provisions to provide for MAR schemes. Consequently, it is proposed to amend the existing ‘augmentation’ provisions within Section 11 (Selwyn-Te Waihora) and Section 13 (Ashburton) of the CLWRP that provide for both MAR and Targeted Stream Augmentation (TSA) to remove any duplication with the PC7 MAR provisions.

7.2. MAR systems allow clean water to infiltrate into ground to recharge groundwater and hydraulically connected surface waterbodies. These systems can be used to recharge aquifers subject to declining yields, address saltwater intrusion, and sustain and improve the functioning of ecosystems and the quality of groundwater. The introduction of these provisions is based on the available science from the Hinds/Hekeao MAR trial in the Ashburton District and international examples, which have shown evidence of MAR improving water quality and quantity outcomes. While there are further trials underway to better understand the effectiveness of MAR systems, it is considered that there is enough information available to develop a regulatory framework that enables MAR systems to be developed and used, while managing the potential effects.

7.3. The current region-wide provisions of the CLWRP do not include specific provisions to provide for MAR. Specific provisions were introduced into Section 11 and Section 13 of the CLWRP via the sub-regional plan change processes (respectively PC1 and PC2 to the CLWRP) to provide for investigative MAR trials. As discussed in the Section 32 Report, a significant barrier for MAR proposals under the existing region-wide provisions is the ability to obtain water (likely to be surface water) for a MAR scheme, particularly where the water source is over-allocated. Source water for a MAR scheme, would need to be obtained under an existing consent or via a transfer of a water permit which would be subject to the surrender of a portion of the transferred water in over-allocated zones. Using an existing water permit, whether or not it is transferred, is also likely to require a change to the specified activity that the abstracted water may be used for, as it is very unlikely to authorise the use of water for MAR.

7.4. PC7 proposes new MAR provisions as follows:

- New definition of “Managed Aquifer Recharge”
- New Policies 4.99, 4.100
- New Rules 5.191, 5.192, 5.193
- New Schedule 32 (Managed Aquifer Recharge Plan)

7.5. The consequential amendments proposed to the provisions in Sections 11 and 13 to remove the MAR component of the ‘augmentation’ provisions are:

- Amendments to sub-region definition of “augmentation” (Section 11)
- Amendments to sub-region definition of “augmenting” (Section 13)
- Amendments to Policies 11.4.22, 13.4.18
- Amendments to Rules 11.5.35, 11.5.42, 11.5.43, 13.5.35, 13.5.36, 13.5.37

---

584 The planning authors for this section are Adele Dawson, Jacqui Todd and Andrea Richardson.
585 As described in the Section 32 supporting report “Providing for Managed Aquifer Recharge”.
7.6. A range of submissions have been received on the MAR provisions. These submissions have been summarised and analysed in the following topics:

- Overall use of MAR
- MAR as an “offset”
- Water Allocation
- Down-gradient effects
- Ecosystems
- MAR and TSA
- Submissions on specific provisions
- Miscellaneous

Overall use of MAR/General

Submissions

7.7. The MAR provisions are generally supported by a number of submitters to enable MAR to increase groundwater levels and stream flows and reduce contamination. Onfarm Data specifically supports MAR as a means to improve water quality and has referred to the Hinds/Hekeao MAR trial as providing evidence of this. VetLife supports the use of MAR and request that further investigations are undertaken to show how MAR can assist in achieving water quality targets.

7.8. Waimakariri Group seeks that the MAR provisions are deleted as it considers:

- MAR does not recharge groundwater, rather it just takes water from one area to supply another;
- The environmental benefits are unproven and as such, it is difficult to justify the development and use of MAR on these grounds;
- The data behind excess water within existing takes needs further scrutinising prior to considering its use for MAR; and
- There is limited scientific evidence.

Analysis

7.9. Most of the general submissions on MAR support the PC7 provision to provide a consenting pathway for MAR projects. Waimakariri Group raises concerns regarding the information supporting the PC7 approach and the overall effectiveness of MAR. The technical information supporting the development of the MAR provisions is discussed in the Section 32 Report. This report concludes that based on local trials and international research, MAR in the Canterbury Region could be an effective measure to improve stream flows and water quality. Policy 4.99 and Rule 5.191 through the conditions and matters of control enables the assessment of effects the submitter specifically comments on. This is also supported by Schedule 32 which specifically requires the Managed Aquifer Recharge Plan to identify how the risks of a specific site will be managed.

586 For example; R Devlin (PC7-56.5), M J Spencer-Bower (PC7-473.15), A Brown (PC7-109.4), Te Kohaka o Tuhaitara Trust (PC7-566.5), M J Brough (PC7-477.3), B & W Croft (PC7-454.4), PC7-409.2, Oxford Agriculture Services Ltd (PC7-232.5), Lovelock Livestock Ltd (PC7-317.25)
587 PC7-232.5
588 PC7-456.39
589 PC7-171.2, PC7-171.17
7.10. I consider there is enough information to support the establishment of provisions to provide for MAR and that the proposed provisions adequately address the potential effects that may arise. I do not recommend any changes in response to these submissions.

**MAR as an “offset”**

**Submissions**

7.11. Several submitters are concerned that MAR will be used to “offset” the effects of land use intensification or the over-allocation of water rather than addressing the root cause of those issues.

7.12. M Hall\(^{590}\) is concerned that the proposed MAR provisions anticipate the results of the MAR trial, and that MAR may be used as a solution to over-allocation in an over-allocated catchment. The submitter does not want MAR to be used as a means to secure a better outcome for irrigation and nutrient dilution. Similarly, The Waimakariri Group\(^{591}\) has questioned whether the MAR provisions support commercial interests or address environmental concerns and have sought the provisions are removed.

7.13. S Gerard\(^{592}\) seeks that the MAR provisions are amended so that they are only utilised after other land management practices have been applied, or as a last resort. S Gerard considers the effects are not understood and further consideration needs to be undertaken.

7.14. M Kemp\(^{593}\) has requested that the MAR provisions are amended so that MAR is only used as a temporary solution once other measures have been tried. Specifically, M Kemp considers the provisions may facilitate the on-going over-use of water to levels below which is generally acceptable and notes that MAR is insufficient to address the on-going activities that lead to its use as a ‘chronic strategy’.

7.15. Ngā Rūnanga\(^{594}\) supports the inclusion of MAR. However, they seek that the provisions are amended to ensure that MAR is not used as an off-setting tool where changes to land-use practices would achieve the same outcome. Ngā Rūnanga considers this includes operating land-use practices at or above GMP and consider that MAR should not be used as an off-setting tool where a land-use change would achieve the same outcome. In addition, the submitter wants MAR to only be used as a temporary solution once other measures have been tried or during extraordinary circumstances. The submitter seeks these changes as it is considered they better incorporate the interests and aspirations of Ngāi Tahu.

7.16. Similarly, Forest & Bird\(^{595}\) considers that MAR should only be used as a temporary solution once other measures have been tried or during extraordinary circumstances and that ‘pollution’ and ‘over-allocation’ shall be avoided in the first instance. Forest & Bird has sought many changes to the MAR provisions as it considers that MAR encourages further intensification of land-use and further over-allocation and does not support GMP.

\(^{590}\) PC7-444.6
\(^{591}\) PC7-171.2, PC7-171.17
\(^{592}\) PC7-470.1
\(^{593}\) PC7-102.2
\(^{594}\) PC7-423.92
\(^{595}\) PC7-472.11
7.17. DairyNZ\textsuperscript{596} seeks an amendment to Policy 4.99(a) to include ‘or the benefits of MAR achieve the equivalent benefits of alternative mitigations’. DairyNZ states that enabling MAR as an alternative to other mitigations allows community outcomes to be achieved more efficiently, providing MAR achieves equivalent or better community outcomes.

\textit{Analysis}

7.18. The purpose of establishing the region-wide provisions is to provide a simpler framework for considering resource consents to establish MAR systems. It is not the purpose of the CLWRP to require MAR systems to be used, simply the PC7 framework ensures MAR remains a tool that could be used to achieve freshwater quality outcomes, limits and targets.

7.19. Policy 4.99(a) recognises that MAR is to be used alongside other mitigations and therefore cannot be relied upon as the only mechanism to improve water levels or water quality. It is anticipated that MAR may be used alongside measures such as the adoption of GMP to improve water quality. To ensure that it is clear that Policy 4.99(a) requires other mitigation to be implemented in addition to MAR, it is recommended that ‘alternative mitigations’ be changed to ‘further mitigations’ in clause (a) of Policy 4.99.

7.20. In response to submitters seeking that MAR should be a temporary measure, I consider that the appropriate duration of MAR will be considered through the consenting process on a case by case basis. The provisions allow for all potential effects of a MAR proposal to be considered, including their duration\textsuperscript{597} therefore it is considered unnecessary to specify an appropriate duration.

7.21. I recommend that Policy 4.99(a) be amended as set out in the tracked changes version of PC7 to clarify that MAR is to be used in addition to other mitigations. I do not recommend any other changes in response to these submissions.

\textit{Water Allocation}

\textit{Submissions}

7.22. Six submitters\textsuperscript{598} are concerned that the MAR provisions allow the taking of additional water from surface waterways where environmental flows or limits will be exceeded. These submitters consider that the taking of additional water from over-allocated catchments is contrary to the NPSFM requirement to avoid any further over-allocation of fresh water and phase out existing over-allocation. Ngā Rūnanga,\textsuperscript{599} does not support the taking of any water for MAR in over-allocated catchments (whether it is additional water or an existing take for irrigation). It states that MAR should not result in an exceedance of any environmental flow or allocation limit for a surface water body.

7.23. To address the concerns about the taking of water in over-allocated waterways, a number of submitters suggest that policies 4.99 and 4.100 be amended to state that any additional abstraction will be avoided from surface water catchments where flow and allocation limits

\textsuperscript{596} PC7-357.4
\textsuperscript{597} Rule 5.4
\textsuperscript{598} PC7-351.94, PC7-351.6, PC7-95.63, PC7-95.64, PC7-160.7, PC7-472.38.
\textsuperscript{599} PC7-423.20, PC7-423.21, PC7-423.93
are not met. WWHT state that it is preferred that only water already allocated to irrigation schemes be used for aquifer recharge and stream augmentation.

7.24. Submitters also suggest amendments to Rules 5.191 and 5.192 to make it a prohibited activity to take surface water for MAR in over-allocated catchments unless it is a replacement of a lawfully established take. Ngā Rūnanga requests that it be a prohibited activity to take water for MAR in all over-allocated catchments, irrespective of whether it is a new water take or the replacement of an existing take.

7.25. Fish & Game seeks amendments to condition (2) of Rule 5.191 to make it clearer whether the condition applies to a change of use for an existing consent, or if it applies to a new surface water take. It states that this is important to clarify as the transfer of use in an over-allocated catchment is considered to be quite different to applying for additional water over and above that already consented.

7.26. Submitters are generally supportive of existing consent holders being allowed to use a portion of their water permit for MAR in over-allocated catchments. Fish & Game suggests this should be subject to a requirement to surrender a portion of a consent, recommending that the portion transferred must be for no more than 90% of the previously consented rate or volume of take. Hinds Drain Working Party and Greenstreet Irrigation Society request that Policy 4.100 be amended to permit the use of existing surface water consents for MAR. Ngā Rūnanga is not supportive of Policy 4.100 and as already outlined, and requests that the policies and rules be amended to prohibit the taking of water for MAR in any situation where it results in over-allocation of a surface water body.

7.27. Policy 4.100 provides for the taking and using of water for MAR in catchments where environmental flows and/or allocation limits are exceeded. A number of submitters are concerned that the situation where a surface water body is not over-allocated is not provided for. They request that the policy is extended to provide for existing surface water consents to also be used for MAR in situations where environmental flows and allocation limits are not exceeded.

7.28. MHV also states that there is a disconnect between clause (a) and (b) of Policy 4.100 and it is not clear whether an existing consent holder is required to show no net increase in water taken (as per clause (b)) or whether they are able to demonstrate that taking water in addition to that which is already consented will have benefits that outweigh the adverse effects (as per clause (a)).
Analysis

7.29. The purpose of the proposed MAR provisions is to provide for MAR schemes and address some of the barriers of the region-wide provisions, particularly in relation to the taking of water in over-allocated catchments. However, I agree that the taking of additional water from over-allocated surface water catchments is contrary to the NPSFM, which requires any further over-allocation to be avoided, and existing over-allocation to be phased out\(^\text{611}\). Therefore, I propose amendments to Policies 4.99 and 4.100 and Rules 5.191 to 5.193 to avoid any further over-allocation of surface water catchments. This includes making it a prohibited activity to take any additional water in surface water catchments where flow and allocation limits are exceeded.

7.30. In relation to existing consent holders using a portion of their water permit for MAR, I do not agree with the Ngā Rūnanga submission that existing users should not be allowed to use a portion of their water for MAR in over-allocated catchments, as this could be a significant barrier to MAR, and is contrary to the intention of the provisions to facilitate MAR. Similarly, I do not agree with the WWHT’s submission that only irrigation scheme water be used for MAR, as this would only provide for MAR in a limited number of situations.

7.31. I agree with Fish & Game’s suggestion of adding a requirement to surrender a portion of water in over-allocated catchments. Rather than an addition to Policy 4.100(b) as requested by Fish & Game, I consider that this should be an additional matter of discretion for Rule 5.191. This will allow consideration of whether water should be surrendered, and if so, how much, on a case by case basis for each surface waterway and MAR proposal. This consideration would also be guided by existing Policy 4.50 (abstraction of water), which specifies that for over-allocated catchments, a reduction in over-allocation is enabled through the replacement consent being no more than 90% of the previously consented rate. This is consistent with Fish & Game’s submission and given that this is addressed by an existing policy it is not considered necessary to add it to Policy 4.100 (b).

7.32. I agree with Fish & Game that amendments are required to condition (2) of Rule 5.191 to make it clearer what situations it applies to. I also note that numerous submitters are supportive of allowing existing consent holders taking a portion of their water for MAR. I recommend changes to the introduction and condition (2) of Rule 5.191 to ensure that Rule 5.191 provides a consent pathway for existing consent holders to use a portion of their water for MAR, and to ensure that it is clear how condition (2) applies.

7.33. In regard to Fish & Game’s submission on condition (2) of Rule 5.191 and the confusion about whether the rule applies to the transfer of water, I note that this rule does not apply to transfers. Any proposal to transfer surface water for MAR would be subject to the existing transfer rules in the CLWRP (both region-wide and in some cases sub-regional transfer rules), and associated requirements to surrender water.

7.34. I do not agree that Policy 4.100 should be amended to permit the use of existing surface water consents for MAR as requested by Hinds Drain Working Party. While the intention of the MAR provisions is to provide for MAR, I consider that any proposal to take surface water for MAR should still be subject to a resource consent process where all relevant effects of the proposed MAR system can be considered.

\(^{611}\) Objective B2 of the NPSFM.
7.35. In regard to the submissions requesting that the MAR provisions be extended to apply to surface water catchments which are not over-allocated, I do not consider that this is necessary. While Policy 4.100 specifically provides for MAR in over-allocated catchments, the other MAR provisions apply to all proposals for MAR, including catchments which are not over-allocated. This includes the MAR definition, Policy 4.99 and Rules 5.191 to 5.193 which provide a consenting pathway for MAR proposals in catchments which are not over-allocated. Subject to meeting all other conditions of the rule, Rule 5.191 provides for surface water takes in catchments where the flow and allocation limits are not exceeded\(^\text{612}\) to be considered as a restricted discretionary activity.

7.36. In response to MHV’s concerns about a disconnect between clause (a) and (b) of Policy 4.100, I do not consider that any amendments are necessary. Clause (a) refers to any further over-allocation, and therefore applies to a proposal to take additional water over and above what is already consented. Clause (b) refers to holders of existing surface water consents where there is no net increase in the water taken, that is, where existing surface water is to be used for MAR. I consider it is clear that the requirements of clause (a) only apply when additional water is to be taken, and clause (b) only applies if an existing surface water take is proposed to be used with no increase in the amount of water taken.

**Recommendation**

7.37. I recommend the following changes to address the allocation issues discussed above, as set out in the tracked changes version of PC7.

   a. Amendments to clause (b) of Policy 4.99 and clause (a) of Policy 4.100 to prohibit the taking of additional surface water in over-allocated catchments.\(^\text{613}\)

   b. Amendments to the introductory sentence of Rule 5.191 and condition (2) to ensure that the rule provides a consent pathway for existing consent holders seeking to use a portion of their water for MAR.

   c. Add a matter of discretion to Rule 5.191 to provide for the surrender of water in over-allocated catchments where appropriate.\(^\text{614}\)

   d. Amend Rules 5.192 and 5.193 to make it a prohibited activity to take new water for MAR in over-allocated catchments.\(^\text{615}\)

**Down-gradient effects**

**Submissions**

7.38. Several submitters have raised concerns about the down-gradient impacts MAR may have on properties and land uses. These concerns relate to potential drainage issues and the quality of human drinking water.

---

\(^{612}\) Clause (2).

\(^{613}\) PC7-95.64, PC7351.6, PC7351.94, PC7-95.63, PC7423.20

\(^{614}\) PC7-351.95, PC795.65.

\(^{615}\) PC7-351.24, PC7-351.25, PC7-95.87.
7.39. Ellesmere Sustainable Agriculture\textsuperscript{616}, W J & L E Bailey Farming\textsuperscript{617}, WWHT\textsuperscript{618} and W J Winter & Sons\textsuperscript{619} all seek amendments to PC7 to recognise the potential impacts MAR systems may have on down-gradient land and land uses as a result of raised groundwater levels. Ellesmere Sustainable Agriculture seek amendments to Policy 4.99, Rule 5.191 and Schedule 32 to require assessments of potential risks to down-gradient properties due to inundation and to address methods of remediation and/or compensation if effects are caused by raised groundwater levels.

7.40. WWHT\textsuperscript{620} seeks to amend Policy 4.99(g) so that effects are minimised rather than avoided. The submitter states that MAR may raise groundwater levels and create wetter land in some places where wetlands used to be but have been drained. The requirement for total avoidance of effects on properties may negate some benefits of MAR and restrict its use as a tool for wetland restoration.

7.41. W J Winter & Sons\textsuperscript{621} is concerned that MAR will cause a rise in the water table in Kaiapoi and Clarkville that may cause properties to be turned back into swamp land. W J Winter & Sons and W J & L E Bailey Farming\textsuperscript{622} consider the MAR provisions should include provision for monitoring of lowland water tables and for MAR discharges to be avoided when water tables are high.

7.42. CDHB\textsuperscript{623} has raised concerns about potential risks to drinking water supplies. CDHB seeks to insert an additional condition into Rule 5.191 that requires that MAR discharges shall be located at least 100 m from private drinking water supplies. This would ensure that the same level of protection is provided for private and community drinking water supplies.

Analysis

7.43. In relation to concerns about the potential inundation of down-gradient properties, I consider that the PC7 provisions effectively address these concerns. I agree with submitters that down-gradient ponding or flooding is a key risk of MAR systems and as such potential effects need to be appropriately managed. Policy 4.99(g), Rule 5.191 and Schedule 32 provide clear direction that any adverse effects on property from raised groundwater levels or increased surface water flows need to be assessed in the application and any adverse effects addressed. Additionally, it is clear from the provisions that on-going monitoring is likely to be required with reporting to Environment Canterbury.

7.44. In response to WWHT, I consider that Policy 4.99(g) requires avoidance of effects as a first priority but does still provide a pathway for consents where the avoidance of adverse effects on people and property is impracticable, effects are minimised.

7.45. With regards to CDHB’s requested amendments to Rule 5.191, I consider that the PC7 provisions already address the risks to drinking water quality. Condition (6)(c) and (d) of Rule 5.191 already restrict the discharge occurring within well protection zones as applied.
elsewhere in the CLWRP. Additionally, Policy 4.99 requires that adverse effects on the quality and availability of human and stock drinking water are avoided which is supported by condition (5) of Rule 5.191 which requires demonstration that the proposal will not reduce the quality of any sources of human and animal drinking water within 1 km of the discharge point.

7.46. I do not recommend any changes in response to these submissions.

Ecosystems

Submissions

7.47. A number of submitters have requested amendments to the MAR provisions to provide for the protection of groundwater and surface water ecosystems.

7.48. G Fenwick is generally supportive of the proposed MAR provisions with suggested amendments to protect groundwater ecosystems.

7.49. S Gerard notes that each aquifer will have its unique ecosystem and species within and suggests that understanding the effects mineral content and temperature of the water recharge on the species within this ecosystem is required.

7.50. Forest & Bird is opposed to the provisions as currently proposed and suggests amendments to the policies and rules to ensure that groundwater ecosystems and groundwater dependent ecosystem services are appropriately provided for. It states that the provisions do not adequately address the effects on the receiving water body and are focussed more on the surface waterbody where the water is taken from.

7.51. The Waimakariri Group seeks that the MAR provisions are deleted with one of its reasons being a concern about the risk of contamination of underground ecosystems.

7.52. To provide for effects on groundwater ecosystems, G Fenwick suggests the following amendments:

• Include a new clause in Policy 4.99 as follows: “adverse effects on the biodiversity and ecosystem functioning within the recharged aquifer from potentially invasive (exotic or indigenous) species are eliminated”.

The reason given for this amendment is that most indigenous species inhabiting an aquifer are endemic to that aquifer, mixing of waters from one aquifer with another either directly or indirectly, must be avoided to maintain indigenous biological diversity and to maintain each aquifer’s unique ecosystem.

624 For community supply wells this is determined in accordance with Schedule 1 of the CLWRP and for all other bores used for water abstraction this is 50m.
625 PC7-339.7, PC7-339.8, PC7-339.11
626 PC7-470.1
627 PC7-472.71
628 PC7-171.2
629 PC7-339.7
• Add “any adverse effects on groundwater biodiversity, endemic groundwater biodiversity and/or on the groundwater ecosystem functioning” as an additional matter of discretion for Rule 5.191.

• Amend Schedule 32 (Managed Aquifer Recharge Plan requirements) to include a requirement to map aquifer boundaries and a more explicit requirement to assess and monitor the effects on endemic groundwater biodiversity and ecosystem functioning.

7.53. Forest & Bird suggest the following amendments:

• Amend Policy 4.99(e) to ensure that the effects that would be encountered by ecosystems of the receiving waterbody are recognised, protected and monitored.

• Remove ‘ecosystem services’ from Policy 4.99(e) as they are not akin to ecosystem functions as service implies use by and function for human benefit.

• Remove the words ‘no net loss’ from Policy 4.99(f) as they consider any loss of nationally rare ecosystems is unacceptable.

• Include a new condition between conditions (4) and (5) of Rule 5.191 as follows: “The application demonstrates the proposal will not adversely affect the groundwater ecosystem or groundwater dependent ecosystems of the receiving water bodies.”

• Amend matters 10 and 15 of Rule 5.191 to delete the use of the term ‘ecosystem services’ and include effects on groundwater ecosystems and groundwater dependent ecosystems.

• Amend Schedule 32 to require preliminary and regular surveys of fish in the providing waterbodies and groundwater invertebrate survey from both the providing and receiving environment. The submitter states that groundwater invertebrates exist in some cases as endemic to a particular catchment, and that if moved between catchments may create an imbalance in the natural species order due to competition from a new species. The submitter acknowledges that this ecological science is not completely understood but seeks invertebrate species populations should be documented for baseline comparison to potential changes that may occur.

7.54. DOC seeks to retain matters of discretion (10), (14) and (15) for Rule 5.191. DOC supports these matters as they include the consideration of adverse effects on ecosystems, significant indigenous biodiversity and Ngāi Tahu values.

7.55. Forest & Bird seeks a number of amendments to sub-regional clauses in Section 11 (Selwyn – Te Waihora) and Section 13 (Ashburton) which relate to effects on indigenous vegetation, indigenous biodiversity and indigenous fauna.

Analysis

7.56. G Fenwick expresses concern about the mixing of water from one aquifer with another. I acknowledge these concerns and note that the proposed MAR provisions do not provide for...
the transfer of groundwater from one aquifer to another. The proposed MAR provisions relate solely to the capture of clean surface water and purposefully recharging that water into aquifers\textsuperscript{636}. Accordingly, the proposed rules only apply to the take and use of surface water for MAR.

7.57. In regard to the use of surface water for MAR, the importance of clean surface water for recharge is acknowledged, and it is noted that:

*Similar to the approaches used for surface water ecosystems, focusing on water quality as an indicator of potential effects on groundwater ecosystems including ensuring that MAR utilises high-quality water for recharge can provide benefits by starting to reverse the detrimental changes to groundwater quality that have occurred over the past century. It is recognised that the ‘recharge of clean water’ is essential for most GE communities to survive and thrive (NIWA 2018)*\textsuperscript{637}.

7.58. Accordingly, information about the quality of the surface water used for recharge and an assessment of effects on groundwater quality are required by the rule and associated Managed Aquifer Recharge Plan.

7.59. G Fenwick and Forest & Bird have suggested additions to Policy 4.99 and Rule 5.191 to provide for the effects on groundwater ecosystems to be considered for MAR proposals, including monitoring the effects on groundwater ecosystems. I acknowledge the importance of groundwater ecosystems and refer to the following technical advice obtained in regard to this:

*In summary, Canterbury’s groundwater ecosystems exist and are vital parts of the natural environment. However, there is limited understanding of their natural or current biodiversity, community structures or functions. Therefore, there is no plausible direct means to evaluate or quantify the positive or negative ‘effects’ on groundwater ecosystems relative to the use of MAR. Internationally, the most common and practical means of evaluating potential effects is to evaluate the hydraulic and water quality changes likely to be propagated by MAR projects and use specific water quality parameters as surrogates for groundwater ecosystems responses. Evaluation and potentially the monitoring of these parameters should be incorporated as part of the standard consent conditions.*

7.60. Given this, I do not recommend that a requirement be added to assess or monitor effects on groundwater ecosystems. The existing provisions, which require consideration of hydraulic and water quality changes, are considered a sufficient surrogate for effects on groundwater ecosystems. A more detailed assessment of appropriate monitoring for a MAR proposal can be carried out as part of the consent process, as provided for by the matters for discretion of Rule 5.191 (matter (6)) and Schedule 32 (Managed Aquifer Recharge Plan).

7.61. In response to G Fenwick’s request that Schedule 32 be amended to require mapping of aquifer boundaries, I do not consider that there is enough information available to require this and note that:

*Relative to the question regarding mapping geologic features relative to groundwater ecosystems, we iterate that there is little to no information available on groundwater ecosystems relative to specific geological boundaries and permeable zones (aquifers) of*
Canterbury’s groundwater systems. Although building our knowledge and information on groundwater ecosystems is clearly desired, it is difficult to justify any requirement for MAR project applicants to take on the technical and financial challenges associated with advanced hydrogeologic mapping exercises. Similar to the requirements of abstraction bore users, site specific characterisation of MAR specific activities relative to changes in water quantity and water quality are the most practical means for managing effects on the environment and surrounding properties.\(^{638}\)

7.62. Given the difficulties in making a meaningful assessment of groundwater ecosystems in relation to aquifer boundaries, I do not recommend that Schedule 32 be amended to require mapping. It is also noted that G Fenwick’s concerns appear, at least in part, to relate to the transfer of groundwater from one aquifer to another, and it is not clear whether aquifer boundaries are still a concern if the source of recharge is only surface water.

7.63. In relation to the request by Forest & Bird to make amendments to sub-regional clauses in Section 11 and Section 13, the amendments to these provisions were consequential to the insertion of new region-wide provisions for MAR and relate solely to removal of MAR from those provisions. Therefore, the changes are limited to removing references to MAR. The changes requested by Forest & Bird require an assessment of the cultural, environmental, social and economic implications, which has not been undertaken in PC7. In the absence of this assessment, and if indeed it is within the scope of PC7, I do not consider that this submission point be accepted.

MAR and TSA

Submissions

7.64. The MAR provisions do not extend to cover TSA. TSA, like MAR, can be an effective tool to improve stream levels and water quality. Several submissions seek to extend the region-wide MAR provisions to include TSA.

7.65. CCC\(^{639}\), Ashburton Lyndhurst Irrigation Ltd\(^{640}\) and MHV Water Ltd\(^{641}\) seek amendments to the provisions to extend their scope to include TSA as well as MAR. Ashburton Lyndhurst Irrigation Limited states that there is a disconnect between the region-wide MAR provisions and TSA provisions in the sub-region sections and that the MAR provisions already address the effects and benefits on hydraulically connected surface water bodies. MHV states the separation of the MAR and TSA provisions in Section 13 seem to recognise the source water being from either groundwater (TSA) or surface water (MAR) and that this distinction is artificial and in many instances a proposal will have effects on both surface water and groundwater. MHV considers that both activities should be considered together.

Analysis

7.66. The MAR provisions intentionally do not include TSA as there has been no technical work completed as part of PC7 to understand if TSA is appropriate throughout the Canterbury

---


\(^{639}\) PC7-337.10, PC7-337.11, PC7-337.150, PC7-337.151

\(^{640}\) PC7-390.2

\(^{641}\) PC7-218.5
Region. The technical work completed to support PC7 focused solely on the effects of MAR proposals not direct discharges of water into surface water bodies. I therefore consider there is insufficient information and assessment of the implications (cultural, environmental, social and economic) to broaden the PC7 provisions to include TSA, and on this basis, and if indeed this change is within the scope of PC7, I recommend rejecting the submissions.

7.67. In response to MHV, the MAR provisions solely relate to the taking of surface water but enable the consideration of potential effects on groundwater and hydraulically connected surface water receiving environments.

7.68. I do not recommend any changes to the provisions in response to these submissions.

Submissions on specific provisions

7.69. This section of the report addresses submissions seeking particular amendments to the rule framework for MAR not already addressed.

Definitions

Submissions and Analysis

7.70. The definition of Managed Aquifer Recharge is:

Managed aquifer recharge means an activity that is for the express purpose of improving the quality and/or quantity of water in a receiving groundwater aquifer or a hydraulically connected surface water body.

7.71. Ten submitters support the definition of MAR and seek that it is retained as notified. HHWET, Hinds Drains Working Party, Forest & Bird and Federated Farmers support the PC7 amendment to the definition of “augmenting” in Section 13.

7.72. Forest & Bird considers the proposed definition of MAR overlaps with the definition of augmentation as it refers to a hydraulically connected waterbody. Forest & Bird has specifically asked to delete the definition and replace it with the following:

managed aquifer recharge means the process whereby water from another source is discharged to a specific area of land where it can soak down to an unconfined aquifer and raise the water level/table of that aquifer; and includes any subsequent effect on flows/levels of hydraulically connected surface waterbodies.

7.73. Forest & Bird also seeks to ensure that a consistent term for augmentation or augmenting is used across the CLWRP.

---

642 For example; BCIL (PC7-153.6), Acton Farmers Irrigation Co-operative (PC7-154.3), HHWET (PC7-345.1), Federated Farmers (PC7-430.5), Hinds Drain Working Party (PC7-394.1), Greenstreet Irrigation Society (PC7-312.4), CCC (PC7-337.4), Ngā Rūnanga (PC7-423.7), Rangitata South Irrigation (PC7-235.5), Ashburton River Irrigators (PC7-343.3).

643 PC7-345.8, PC7-345.13

644 PC7-394.8, PC7-394.13

645 PC7-430.156, PC7-430.161

646 PC7-472.10

647 PC7-472.134
7.74. Federated Farmers\textsuperscript{648} seeks to delete the proposed amendment to the definition of “augmentation” unless there is a clear and demonstrable advantage in retaining it.

7.75. I do not consider the definition of MAR should be amended to provide a clear differentiation to the term augmentation in Section 11 or augmenting in Section 13. The terms are used in different provisions of the CLWRP and while MAR may result in an outcome that is similar to augmenting or augmentation, the definitions clearly relate to different policies and rules to ensure the provisions are clear and understandable. Sections 11 and 13 have been developed via separate plan change process and amendments proposed by PC7 simply remove the overlap with MAR in those sections. I therefore do not recommend aligning those terms as requested or deleting the PC7 amendment.

**Policy 4.99**

**Submissions and Analysis**

7.76. Several submitters including Beef + Lamb\textsuperscript{649}, OWL\textsuperscript{650} and Federated Farmers\textsuperscript{651} support Policy 4.99 and seek it is retained as notified.

7.77. M Kemp\textsuperscript{652} has sought more certainty in the language of Policy 4.99 through the removal of terms such as ‘as far as practicable’, ‘minimise’ and ‘net’. Similarly, Forest & Bird\textsuperscript{653} seeks to amend clause (e) to ensure the terminology used is more consistent with the terminology of the RMA.

7.78. Forest & Bird\textsuperscript{654} seeks the policy is amended to recognise that not all MAR projects will aim to improve both water quantity or quality outcomes. Additionally, Forest & Bird\textsuperscript{655} seeks to amend clause (a) to include hydraulically connected waterbodies, on the basis it is recognised on the basis that these may be affected by MAR, as some methods of recharge do not come in direct contact with the groundwater table.

7.79. Claxby Irrigation\textsuperscript{656} seeks to amend Policy 4.99(c) to improve clarity as follows:

Adverse effects on site and values of importance to Ngāi Tahu, including effects associated with unnatural mixing of water, are avoided as far as practicable or mitigated;

7.80. In relation to clause (a) of Policy 4.99, I do not consider that hydraulically connected waterbodies should be included. The clause refers to receiving water body and I consider this would already extend to the immediate aquifer and any hydraulically connected surface water bodies.

7.81. In response to M Kemp and Claxby Irrigation submissions I consider the notified policy recognises that in some circumstances effects cannot be avoided and must be considered

\textsuperscript{648} PC7-430.145  
\textsuperscript{649} PC7-214.16  
\textsuperscript{650} PC7-381.1  
\textsuperscript{651} PC7-430.13  
\textsuperscript{652} PC7-102.2  
\textsuperscript{653} PC7-472.34, 472.35  
\textsuperscript{654} PC7-472.11, PC7-472.31, PC7-472.32, PC7-472.33, PC7-472.34, PC7-472.35, PC7-472.36, PC7-472.37  
\textsuperscript{655} PC7-472.32  
\textsuperscript{656} PC7-433.1
overall. The policy is intended to be enabling but recognises the severity of adverse effects that could result so provides a clear direction that some effects are to be avoided in the first instances but that some impacts cannot be avoided so must be minimised. I consider this is appropriate given the nature of MAR activities.

7.82. Waimakariri NGF\textsuperscript{657} proposes the following wording to more clearly address the concerns regarding the mixing of water:

\textit{Adverse effects on site and values of importance to Ngāi Tahu, including effects associated with unnatural mixing of water, are avoided as far as practicable where it is practicable to do so, or otherwise remedied or mitigated to minimise adverse effects.}

7.83. I agree that the proposed wording more clearly addresses the potential cultural effects of MAR. The requested wording from the Waimakariri NGF goes further than the PC7 provision as it requires further mitigation to address any effects that cannot be avoided. I recommend that Policy 4.99(c) is amended as requested by the Waimakariri NGF.

\textbf{Rule 5.191}

\textit{Submissions and Analysis}

7.84. Six submitters\textsuperscript{658} seek to amend the wording of condition (5) to remove the words ‘further than’. These submitters consider that the potential for degradation of water quality reduces with distance from the discharge point, and considering the water quality effects beyond one kilometre from the take point is unnecessary. The submitters also consider that at greater distances than one kilometre, it will be difficult to attribute the cause of water quality degradation to MAR and the provision is open-ended.

7.85. I agree that it could be difficult to assess degradation in water quality at distances greater than one kilometre from a discharge and also note that this appears to place a different assessment threshold when compared to discharge sites where there are human and animal drinking water supply sources within one kilometre. Additionally, it is unclear in what situations where water quality would further degrade with distance from a discharge point as a result of MAR. The purpose of the rule condition is to manage potential effects associated with the discharge quality. As such, I consider that the level of assessment required should not be differentiated between sites where drinking water sources are present or not and recommend amendments to reflect this.

7.86. Six submitters\textsuperscript{659} requested amendments to condition (6) of the Rule to remove the words ‘an artificial watercourse’ and MHV Water Ltd\textsuperscript{660} seek the condition is deleted. This is sought as potential sites for MAR include irrigation races or stock water races that may now be redundant because of scheme piping. These watercourses meet the definition of ‘artificial watercourse’. Additionally, it is considered by some of these submitters that irrigation races

\textsuperscript{657} PC7-425.2
\textsuperscript{658} For example; BCIL (PC7-153.24), Acton-Farmers Irrigation Co-operative (PC7-154.20), HHWET (PC7-345.6), Hinds Drain Working Party (PC7-394.6), Greenstreet Irrigation Society (PC7-312.57), Ashburton River Irrigators Association (PC7-343.39)
\textsuperscript{659} For example; HHWET (PC7-345.7), Hinds Drain Working Party (PC7-394.7), Greenstreet Irrigation Society (PC7-312.58), Acton-Farmers Irrigation Co-operative (PC7-154.26), BCIL (PC7-153.27), Ashburton River Irrigators Association (PC7-343.40)
\textsuperscript{660} PC7-218.10
allow for some seepage of water to aquifers which is a legitimate part of MAR. The submitters propose this amendment because they consider the proposed rule prevents these uses for no recognisable benefit or reduction of risk.

7.87. I disagree with the amendment to condition (6) proposed by these submitters. While there may be retired water races that could be used as part of a MAR scheme, MAR is intended to occur via discharges to land rather directly to surface water. The condition as proposed manages the potential risks to surface water quality in artificial watercourse and downstream ‘natural’ surface waterbodies. Given the large number of artificial watercourses in the region that are still operative and have a higher sensitivity to effects, it would not seem appropriate to remove ‘artificial watercourse’ from condition (6).

7.88. The CCC seek that Rules 5.191, 5.192 and 5.193 are amended to be consistent with the definition of MAR to provide for groundwater to be used.

7.89. I do not agree that amendments to Rule 5.191, or 5.192 and 5.193 are necessary to align with the definition of MAR. The definition describes the ‘activity’ rather than the system or infrastructure that is used for MAR and the rules only provide for the taking of surface water. This is in recognition that it is surface water that will be necessary to achieve the outcome of improved water levels or water quality, likely from the larger Canterbury Alpine Rivers. The CLWRP would not prevent an application for other sources of water from being considered if within allocation limits (for groundwater).

7.90. Forest & Bird also seek a number of changes to the matters of discretion, as they consider the rule is inadequate to achieve all it sets out to achieve. Forest & Bird seek the following changes:

   a. Amend matter (6) to provide prescriptive guidance on what ‘monitoring and reporting processes’ should look like at a minimum.
   b. Amend matter (7) to indicate where 'existing/planned water infrastructure' may be located.
   c. Amend matter (12) to clarify that 'any adverse effects of the discharge on the hydraulic properties of the receiving groundwater' applies to both 'groundwater up-gradient and down-gradient of the point of discharge'.

7.91. In relation to monitoring and reporting, the nature and extent of monitoring will be dependent on the specific MAR system proposed. PC7 provisions provide guidance as to what monitoring and reporting may be necessary. Schedule 32 requires a description of the objectives of MAR, and an assessment of the actual and potential adverse effects of the construction and operation of the system. This includes a description of monitoring necessary to avoid, mitigate or minimise risks. Alongside Policy 4.99 which describes effects to be avoided, remedied or mitigated, there is sufficient guidance as to the type of monitoring necessary and sufficient scope during the consent process to ensure the ongoing monitoring and reporting requirements of the resource consent are suitable for the potential risks. I consider that it is not necessary to provide further detail in this matter of discretion.

7.92. In terms of matter (7), I consider it is not appropriate to include a requirement to indicate where existing or planned infrastructure may be located in a matter of discretion. Whether a MAR system is combined with any other water infrastructure, such as an existing irrigation scheme take is dependent on an individual proposal. However, if included with existing or

---

661 PC7-337.86, PC7-337.155
662 PC7-472.72, PC7-472.73, PC7-472.74, PC7-472.75, PC7-472.76
planned infrastructure, it may be necessary to consider how the proposal affects or is affected by the water infrastructure. Schedule 32 includes the requirement to provide a description of the design of the MAR system and items listed would address any existing infrastructure relied upon. As such, I consider that it is not necessary to amend the provisions in response to Forest & Birds submission.

7.93. With regards to matter of discretion (12), I consider the suggested amendment is not necessary as the PC7 wording is broad and enables consideration of any effects on hydraulic properties of the receiving groundwater in any location.

7.94. Federated Farmers\textsuperscript{663} seek to delete matter of discretion (14). The submitter considers there is insufficient information and assessment about where these sites and values are, and what the consequent land management implications will be. Federated Farmers seek widespread discussion with landowners and managers of affected land before this matter of discretion is incorporated.

7.95. As assessed in Part 3 Section 4, the requirement to assess Ngāi Tahu sites and values is not new and there is already guidance in the CLWRP\textsuperscript{664}. Additional direction is provided in iwi management plans. I consider that potential cultural effects is a particular concern of MAR and recommend matter of discretion (14) is retained to ensure any impacts can be addressed.

7.96. Arowhenua and Te Rūnanga\textsuperscript{665} seek to amend the activity status of Rule 5.191 to a non-complying activity status. The submissions are not clear as to the reasons the submitters consider a non-complying activity status is more appropriate.

7.97. Without reasons it is not possible to assess the submission of Arowhenua and Te Rūnanga and as such I do not recommend any changes to the activity status of Rule 5.191.

**Rule 5.192**

*Submission and Analysis*

7.98. Ten submitters\textsuperscript{666} seek that Rule 5.192 is retained as notified due to support for the use of MAR to improve environmental outcomes.

7.99. Ngā Rūnanga\textsuperscript{667} seeks that Rule 5.192 is amended to include a condition that the discharge does not contain treated or untreated wastewater.

7.100. I consider that the amendment suggested by Ngā Rūnanga is unnecessary as Rule 5.191, 5.192 and 5.193 only relate to the taking of surface water and the discharge of that water. As such, the rule would not provide for the discharge of treated or untreated wastewater and this discharge would be managed by the wastewater discharge rules in the CLWRP.

---

\textsuperscript{663} PC7-430.66  
\textsuperscript{664} Policy 4.14B, Schedules 18, 19, 20 and 21.  
\textsuperscript{665} PC7-423.68  
\textsuperscript{666} For example; Glen Eyre Dairy Ltd (PC7-113.25), Larundel Dairy Partnership (PC7-179.24), P S Bay (PC7-289.33), TDC (PC7-292.41), Lovelock Livestock Ltd (PC7-317.32), Pineleigh Farm Ltd (PC7-372.4), OWL (PC7-381.6), DHL (PC7-415.4), Federated Farmers (PC7-430.67), Scottville Farm (PC7-437.10)  
\textsuperscript{667} PC7-423.69
Schedule 32

Submission and Analysis

7.101. The MAR amendments insert the new Schedule 32. The purpose of this Schedule is to outline information required to be submitted with an application for resource consent for MAR.

7.102. Forest & Bird\(^{668}\) seeks that clause (2) is amended so that the description of the site and surroundings is better understood. This includes altering:

   a. Section 2(a) to require a record of hydraulic gradient across many years and different seasons be used to assess the groundwater dynamics of the sub-catchment;
   b. Section 2 to require that groundwater interactions with nearby surface water are fully understood as part of the application; and
   c. Section 2 to require an indication of nearby surface and groundwater takes.
   d. Section 3(e) to indicate the quality of the source water and the quality that is proposed for the deposition if processed or treated.
   e. Section 4(a) to require further explanation of why the receiving groundwater is deteriorated and what has been done or is proposed to be done to change the cause of the deterioration, other than managed aquifer recharge.
   f. Section 4(c) to include groundwater resources as well as surface waterbodies.
   g. Section 5 to use terminology more consistent with Section 5 of the RMA, such as “avoid, remedy or mitigate”, rather than the use of “avoid, mitigate and minimise”.
   h. Section 6 to require that a statement of agreement to meeting the reporting requirements be submitted as part of the application and that the applicant may indicate any additional measurement criteria or reporting requirements that are over and above that which is required by the Council.

7.103. I agree that identifying not only the highest groundwater level but the hydraulic gradient would be necessary to understand the potential effects. However, the “record of hydraulic gradient across many years and different seasons” requested by the submitter may not practically achievable due to lack of data. I therefore recommend that 2(a) of Schedule 32 be amended to read: “The highest groundwater level and the hydraulic gradient”. In relation to the other amendments suggested to Section 2 and to Section 3, I consider that these matters are already addressed through the requirement to provide an assessment of effects which would address the concerns of Forest & Bird.

7.104. In response to the requested amendments to Section 4 of Schedule 32, I consider that it is not appropriate to consider what other actions are being taken to address any water quality or quantity deterioration in an individual consent process. The consent application is assessed on the individual merits and effects associated with it and it is considered the other actions to achieve water quality outcomes is not relevant for each MAR proposal. In relation to the suggested amendment to 4(c), the objectives for groundwater of a MAR proposal are to be included as required by 4(b), as such I consider the requested relief is not necessary.

7.105. In response to the request to amend Section (6), as discussed in paragraph 7.91, the monitoring and reporting requirements will be dependent on the nature and extent of the MAR proposal. Consistent with the recommendation on Rule 5.191, I consider it is not

---

\(^{668}\) PC7-472.197, PC7-472.198, PC7-472.200, PC7-472.201, PC7-472.202, PC7-472.203, PC7-472.204, PC7-472.205
appropriate to specify the monitoring or reporting requirements and consequently require a statement agreeing to meet those requirements.

7.106. WWHT\textsuperscript{669} request the following amendments to Section 4:

A description of the objectives sought for the proposed managed aquifer recharge system and the anticipated timeframes for achievement of those objectives, including but not limited to:

a. Description of the quality and quantity of the receiving groundwater at the proposed discharge point or zone; and

b. The groundwater quality and quantity objectives beyond the proposed discharge point, points or zone, including at distances beyond 1km from the discharge point; and

c. Water quality and quantity objectives for any hydraulically connected surface water bodies or wetland restoration area; and

7.107. WWHT\textsuperscript{670} also seek the inclusion of a new clause as follows:

An assessment of the potential ecological and social benefits from the managed aquifer recharge plan.

7.108. I consider that these suggested changes are unnecessary and do not provide any greater clarity regarding the assessments that are required. When Schedule 32 is read in combination with Policy 4.99 and Rule 5.191, the range of effects to consider is described.

7.109. Ellesmere Sustainable Agriculture\textsuperscript{671} propose to delete Section 6 of Schedule 32 and replace it with a suite of reporting requirements that deal with the entire operation, maintenance and benefits of MAR, as well as the mitigation and remedy of its adverse effects.

7.110. As previously assessed, I consider that it is not appropriate to set out specific monitoring requirements for MAR sites due to the potential variability in the matters to be monitored and reported. As such, I recommend that Section 6 is retained as notified.

7.111. Ngā Rūnanga\textsuperscript{672} have requested amendments to Schedule 32 to address uncertainty around what would be required by a MAR Plan, compared to a comprehensive environmental effect’s assessment. Ngā Rūnanga do state that the information within Schedule 32 is useful, however they consider it should include an assessment of effects on Ngāi Tahu or place MAR in the wider context of mitigation works occurring or proposed for the region to improve water quality and/or quantity. Ngā Rūnanga seek the following additions to Schedule 32:

An assessment on the effects on Ngāi Tahu values and sites of significance; and

An assessment of how MAR is supported by alternative land use mitigation measures that have been undertaken and will be undertaken to improve water quality and/or quantity in the receiving water body.

7.112. Schedule 32 is intended to aid the consent process and inform the development and operation of MAR proposals. In terms of cultural effects, Section 2 requires the identification of sites of significance to Ngāi Tahu and Section 5 requires an assessment of effects associated with the construction and operation of the system. Policy 4.99 sets out that MAR is provided for only where adverse effects on sites and values of importance to Ngāi Tahu are avoided.

\textsuperscript{669} PC7-88.105, PC7-88.106, PC7-88.107
\textsuperscript{670} PC7-88.108
\textsuperscript{671} PC7-207.45
\textsuperscript{672} PC7-423.76, PC7-423.77
where practicable, or otherwise remedied or mitigated. Therefore based on the provisions as a whole, I consider that potential effects on Ngāi Tahu values will be assessed and can be managed through the consent process. In terms of requiring an assessment of how MAR is supported by alternative land use mitigation, I consider that this will be achieved through the preparation of the consent application process for a MAR proposal. Section 88 of the RMA requires an application to be prepared in accordance with Schedule 4 of the RMA. Schedule 4 states an application must include an assessment against the relevant objectives, policies and rules. Therefore, an application would be required to assess alternative mitigations being implemented alongside MAR.

Section 11

Submission and Analysis

7.113. Federated Farmers opposes the amendment to Policy 11.4.22, stating it makes no sense and the policy may be useful to retain in its current form, even if there is no current intention to use it. Federated Farmers also oppose the amendments to the rule section heading, Rules 11.5.35, 11.5.42 and 11.5.43 which remove MAR from these provisions. The submitter states this amendment removes the possibility of augmenting groundwater and there is no clear benefit. Federated Farmers seeks to retain Note 3 in Rule 11.5.42.

7.114. The intention of the PC7 provision is to enable MAR while managing actual and potential effects across the Canterbury Region. The amendments to provisions in Section 11 are consequential to avoid any overlapping requirements. Therefore, the region-wide provisions will still apply in the Selwyn Te Waihora sub-region. I therefore do not consider there is an issue in the amendments removing the possibility of ‘augmenting’ groundwater. On this basis, I do not recommend any changes in response to Federated Farmers’ submission.

Section 13

Submission and Analysis

7.115. HHWE, Hinds Drains Working Party, Forest & Bird and Federated Farmers support the PC7 amendment to Policy 13.4.18. Federated Farmers also supports Rules 13.5.35 and 13.5.37 as notified.

7.116. Forest & Bird seek that the word ‘practicable’ is removed from clause (a) and clause (f) of Policy 13.4.18 as it provides for opting out.

---

673 As recommended in Section 42A Report
674 PC7-430.146
675 PC7-430.150, PC7-430.151, PC7-430.153, PC7-430.154
676 PC7-430.152
677 As defined, augmentation is the addition of water to surface water. Adding water to groundwater is MAR.
678 PC7-345.8, PC7-345.13
679 PC7-394.8, PC7-394.13
680 PC7-430.156, PC7-430.161
681 PC7-430.172, PC7-430.174
682 PC7-472.137, PC7-472.128
7.117. Eiffelton Community Group Irrigation Scheme\textsuperscript{683} seeks that condition (1) of Rule 13.5.36 is amended to remove the restriction on targeted stream augmentation for trials up to five years. Additionally, the submitter seeks condition (4) is amended so that groundwater wells can be used for TSA and potable drinking water supply. Federated Farmers\textsuperscript{684} seek that condition (4) is removed in its entirety for a similar reason described above. The submitter notes situations exist where the wells discharging to water, are also used for potable water supply.

7.118. In response to Eiffelton Community Group Irrigation Scheme, the amendments to these provisions were consequential to the insertion of new region-wide provisions for MAR and therefore the changes are limited to removing references to MAR. The PC7 MAR provisions intentionally do not include TSA as there has been no technical work completed as part of PC7 to understand if TSA is appropriate throughout the Canterbury Region. I therefore consider there is insufficient information and assessment of the implications (cultural, environmental, social and economic) to broaden the PC7 provisions to include TSA. On this basis, and if this change is indeed within the scope of PC7, I recommend rejecting this submission.

7.119. I consider any changes to adapt how the provisions apply to TSA are not within scope of the plan change.

Miscellaneous

Submissions and Analysis

7.120. Claxby Irrigation\textsuperscript{685} seeks amendments to PC7 to enable the trialling, implementation and monitoring of MAR within the Waimakariri sub-region to ensure a more adaptive plan approach. Rathkeale Farming Partnership\textsuperscript{686} seek that the Section 14 OTOP provisions are amended to enable MAR to occur within the Levels Plains area. This submitter proposes to develop MAR systems that utilise gravel pits and water races, to dilute nitrates released during summer. This is considered achievable through diverting high flows of the Opihi River through the Levels Plains Water Races, to the gravel pits.

7.121. I consider that no changes are required to Section 8 or 14 to enable MAR. The Section 5 region-wide provisions will prevail over rules in the sub-region chapters and provide the framework to enable MAR systems while managing actual and potential effects. Normally it is the sub-region rules that prevail over the region-wide provisions on the same subject matter.\textsuperscript{687}

7.122. Genesis\textsuperscript{688} request that multiple provisions are amended to ensure that MAR systems do not have actual or potential adverse effects on the continued operation, maintenance, upgrading and replacement of the Tekapo Power Scheme.

7.123. I consider that the specific MAR provisions enable consideration of the potential effects on the Tekapo Power Scheme as a result of the take of water, or the effects of the discharge.

\textsuperscript{683} PC7-11.5, PC7-11.6
\textsuperscript{684} PC7-430.173
\textsuperscript{685} PC7-433.35
\textsuperscript{686} PC7-181.4
\textsuperscript{687} Section 2 of the CLWRP outlines that the Plan operates at two levels – region-wide and sub-region sections.
\textsuperscript{688} PC7-422.9, PC7-422.10, PC7-422.31,
Additionally, Objective 3.3 of the CLWRP seeks to ensure that nationally significant infrastructure is enabled and resilient. Given this, I consider it is unnecessary to specifically identify the Tekapo Power Scheme.
8. Commercial Vegetables

Introduction and Provisions

8.1. PC7 proposes a separate nutrient management framework for commercial vegetable growing in Canterbury. The provisions are intended to enable the continuation of commercial vegetable growing activities while managing nutrient losses to achieve freshwater quality limits, outcomes and targets.

8.2. Overall, commercial vegetable growing occupies only a small part of the Canterbury Region. The area of land used commercial vegetable growing varies between sub-regions due to the proximity to buyers, favourable soils and climate, availability of water and high integration with other rural enterprises (Mojsilovic, 2019). Analysis of the land area used for commercial vegetable growing shows that the majority of growing occurs in Ashburton, Selwyn and then the OTOP sub-regions, where it is estimated commercial vegetable growing contributes 3-4%, 4-5% and 2% of the total catchment nitrogen load per year respectively (Ford, 2019 and Mojsilovic, 2019).

8.3. Although commercial vegetable growing contributes only a small portion of total catchment nutrient loads, the loss rates can be relatively high in comparison to other farming activities. Additionally, unlike other farming systems, commercial vegetable growers typically rotate crops over a combination of owned and leased land, leased on both a short-term and long-term basis. This means that land used for commercial vegetable growing can vary in size and location from year to year. Commercial vegetable growing may also form part of another farming system such as arable and there can be variability in the type of crops grown, with new crops and varieties regularly appearing.

8.4. As described in the Section 32 Report, the current nutrient management provisions of the CLWRP are not easily implemented for commercial vegetable growing, primarily due to the rotational nature of their activities. Under the current CLWRP provisions nitrogen loss rates are assigned to land for the baseline period. In most areas of Canterbury, future nitrogen losses are held to this baseline rate or are required to reduce below this rate. This poses issues for growers as the loss rates from their operations cannot be transferred to new land when the grower moves their operations to avoid soil-borne disease. This leaves the grower needing to find new land with available nitrogen loss rates high enough to accommodate vegetable growing. As a result, the current CLWRP may prevent growers from being able to move their activities to new land and therefore is likely to affect crop health.

8.5. The current CLWRP frameworks is also complex as no single set of provisions applies to commercial vegetable growing. The region-wide framework applies to some sub-regions and there are specific provisions for Selwyn-Te Waihora, Ashburton, Waitaki and South Coastal Canterbury sub-regions. PC7 also proposes specific nutrient management rules for the Waimakariri and OTOP sub-regions. For growers with operations spanning across sub-regions, the current regime makes management difficult with varying regulatory requirements.

8.6. The primary purpose of the PC7 provisions is to provide a single regulatory framework for vegetable growing that can enable commercial vegetable growers to rotate their activities across various properties or blocks; ensure landowners leasing land to a commercial vegetable grower are not unduly penalised; and to avoid inhibiting the achievement of freshwater quality limits, outcomes and targets.

689 The planning authors for this section are Adele Dawson and Andrea Richardson.
outcomes, limits and targets. Achieving all three of these outcomes is a challenging task due to the need to retrofit a solution into the current CLWRP framework and the complexity and variability of commercial vegetable growing. As a result, the recommendations made in this report may have some difficult implementation consequences, which have been identified where possible. The recommendations however reflect the best attempt to address this challenging issue based on the knowledge and tools currently available.

8.7. PC7 proposes a new policy, five new rules, two definitions, minor consequential amendments and advice notes which collectively establish an alternative nutrient management framework. Commercial vegetable operations receiving water from an irrigation scheme or principal water supplier will not be managed by the proposed rules as nutrient losses from those operations will be managed by the scheme or water supplier if they already hold a resource consent.

8.8. New Policy 4.36A outlines the proposed regime in detail:

Recall the particular constraints that apply to commercial vegetable growing operations (including the need to rotate crops to avoid soil-borne diseases and growing locations that are in close proximity to processing facilities) and provide a nutrient management framework that appropriately responds to and accommodates these constraints while improving or maintaining water quality by:

a. requiring commercial vegetable growing operations to operate at good management practice;

b. avoiding the establishment of a new commercial vegetable growing operation, or any expansion of an existing commercial vegetable growing operation beyond the baseline commercial vegetable growing area, unless the nitrogen losses from the operation can be accommodated within the lawful nitrogen loss rate applicable to the new location;

c. requiring commercial vegetable growing operations to demonstrate, at the time of application for resource consent and at the time of any Farm Environment Plan audit, how any relevant nutrient loss reduction set out in Sections 6 to 15 of this Plan will be achieved;

d. constraining, as far as practicable, commercial vegetable growing operations to a single nutrient allocation zone or sub-region; and

e. requiring a Farm Environment Plan as part of any application for resource consent, and requiring that Farm Environment Plan to be prepared in accordance with Schedule 7 of this Plan.

8.9. Five new rules are introduced to implement this framework:

- Rule 5.42CA permits commercial vegetable growing operations on properties 0.5 hectares or less in area.

- Rule 5.42CB requires resource consent as a restricted discretionary activity if an FEP has been prepared in accordance with Schedule 7 and submitted with the application, the area of land used for the operation is no greater than the baseline commercial vegetable growing area, and all land forming part of the operation is located within the same sub-region and NAZ. Six matters of discretion are included which relate to GMPs, methods to avoid or mitigate adverse effects, FEP audit dates and methods, reporting, and methods to demonstrate nutrient discharge reductions and prevent exceedances of any applicable nutrient load limit.
• Rule 5.42CC requires resource consent as a discretionary activity where operations are greater than the baseline growing area or the land used by the operation is not located within the same sub-region and NAZ, provided an FEP has been prepared in accordance with Schedule 7 and submitted with the application and the nitrogen loss rate from the new or expanded operation does not exceed the lawful nitrogen loss rate applicable to the proposed location.

• Rule 5.42CD requires resource consent as a non-complying activity where operations do not prepare an FEP in accordance with Schedule 7 and submit it with the associated resource consent application.

• Rule 5.42CE prohibits new or expanded operations that exceed the nitrogen loss rate applicable to the proposed location and are not permitted or consented under Rule 5.42CA or 5.42CB.

8.10. The new policy and rules are informed by two new definitions of ‘Baseline Commercial Vegetable Growing Area’ and ‘Commercial Vegetable Growing Operations’. Amendments are also proposed to Schedule 7 to clarify the FEP requirements for commercial vegetable growing operations.

8.11. While providing for commercial vegetable growing operations, the regulatory framework must still give effect to higher order statutory documents. The most relevant document is the NPSFM which requires the overall quality of freshwater within a FMU is maintained or improved where degraded. The CLWRP achieves this by setting freshwater quality outcomes, limits and targets either at the region-wide level or the sub-region and catchment level. Therefore, to give effect to the NPSFM, the proposed provisions must still achieve any nutrient reductions where these have been set.

8.12. The proposed provisions have attracted many submissions, with over 55 submissions received. While most submitters support the concept of a separate management framework for commercial vegetable operations, there are a number of concerns with the proposal, most significantly:
  • Restricting the commercial vegetable growing area;
  • The permitted activity threshold;
  • Constraining commercial vegetable operations to a single sub-region or NAZ;
  • The implementation of the provisions to individual operations; and
  • The requirement for nutrient budgets and the reliance on the OVERSEER® model.

8.13. All submissions received on the proposed provisions have been analysed in the following topics:
  • Overall framework for commercial vegetable growing;
  • Permitted activities;
  • New provisions;
  • Capping commercial vegetable growing area;
  • Nutrient budgeting and nutrient reductions;
  • Movement between sub-regions and NAZ’s;
  • GMP, FEPs and Management Plans;
  • Specific decisions sought on commercial vegetable growing rules; and
Overall framework for Commercial Vegetable Growing Operations

8.14. This section of the report discusses submissions on the overall framework proposed for commercial vegetable growing and specifically the definition of ‘Commercial Vegetable Growing Operation’. Together this group of submissions relate to the overall nature of commercial vegetable growing and what activities are managed by the separate nutrient management framework.

Providing an alternative rule framework for commercial vegetable growing

Submissions and Analysis

8.15. A Brown\textsuperscript{690}, R Devlin\textsuperscript{691} and Te Kohaka o Tuhaitara Trust\textsuperscript{692} support the alternative framework as proposed and seek it is retained. Several other submitters also support the concept of an alternative to manage commercial vegetable operations but seek amendments to the provisions\textsuperscript{693}.

8.16. Blackhills (2002) Ltd\textsuperscript{694} and Pye Group\textsuperscript{695} oppose the alternative rule framework and seek to maintain the status quo. Blackhills (2002) Ltd considers that the current rules are sufficient. Pye Group specifically opposes having specific rules relating to commercial vegetable growing where the operation forms part of a farming operation that is already managed by existing policy, land use consents, nutrient budgets and farm environment plans.

8.17. The Section 32 Report and supporting technical documents describe the difficulties with the current nutrient management framework when applied to commercial vegetable growing. These issues stem from the baseline nitrogen loss rate being tied to land and the rotational nature of commercial vegetable growing operations. The PC7 provisions seek to overcome these issues by primarily managing growing operations by a baseline area rather than a loss rate except where a growing operation spans a sub-region or NAZ\textsuperscript{696}.

8.18. Retaining the status quo is not a viable option for many growers and it is considered a separate framework is necessary to provide for the continuation of growing activities to achieve the objectives of the CLWRP.

Recommendation

8.19. That a separate regulatory framework is retained as notified.

\textsuperscript{690} PC7-109.5
\textsuperscript{691} PC7-56.6
\textsuperscript{692} PC7-566.3
\textsuperscript{693} For example; BCIL (PC7-153.1), Rangitata South Irrigation (PC7-253.12), Ravensdown (PC7-114.109), Rhodes Hill and Belmont Farm (PC7-332.17), Greenstreet Irrigation Society (PC7-312.12, PC7-312.23, PC7-312.24, PC7-312.25)
\textsuperscript{694} PC7-326.5
\textsuperscript{695} PC7-352.3
\textsuperscript{696} Rule 5.42CB
**Definition – Commercial Vegetable Growing Operation**

8.20. PC7 proposes the following definition of commercial vegetable growing operation:

> Is a sub-set of ‘farming activity’ and means the growing, for the purpose of commercial gain, of vegetable crops for human consumption, and includes the full sequences of crops and pasture used as part of that rotation.

**Submissions**

8.21. Eighteen submissions have been received on the definition of Commercial Vegetable Growing Operation. Ravensdown\(^{697}\) and Federated Farmers\(^{698}\) support the definition and seek it is retained as notified. All other submission points seek amendments to the definition.

8.22. A number of submitters seek that the definition is amended to clarify how it applies to mixed farming systems. Several submitters\(^{699}\) seek amendments to include the term “predominantly vegetable growing” in order to exclude operations where vegetable growing forms a minor component of farming activities. RSIL states that a number of arable farms incorporate process crops such as peas into their cropping rotations and the current definition would apply to their activities where they may find it easier to operate under the existing rule framework. HortN\(^{700}\) states that as drafted the definition captures any farming activity that grows any amount of vegetables.

8.23. In a similar manner, Beef + Lamb\(^{701}\) seeks the definition is amended to delete the reference to ‘pasture’. Beef + Lamb states the rules are not appropriate for predominantly pastoral farming practices and as proposed the definition captures mixed agricultural systems. Beef + Lamb seeks the deletion of Policy 4.36A and Rules 5.42CA to 5.42CE if its requested amendments to the definition are not granted.

8.24. Several submitters\(^{702}\) seek the definition is extended to include land use activities similar to commercial vegetable production such as tulip growing. BCIL states that it has a shareholder who grows tulip bulbs which is similar to potato growing. However, OVERSEER\(^{®}\) cannot model tulips and instead onions are modelled to estimate losses which have a high calculated N loss.

8.25. Forest & Bird\(^{703}\) states that the words ‘that rotation’ are uncertain as ‘rotation’ is not previously referenced in the definition.

8.26. If a separate management framework for commercial vegetable growing is retained, Pye Group\(^{704}\) seeks several amendments to clarify the scope of the activities to which the provisions apply. Pye Group seeks:

- Clarification of what defines a single or enterprise ‘operation’ and what land area is included in the “full sequence of crops and pasture used for that rotation”.

---

\(^{697}\) PC7-114.3  
\(^{698}\) PC7-430.2  
\(^{699}\) For example; BCIL (PC7-153.5), Greenstreet Irrigation Society (PC7-312.2), Rhodes Hill and Belmont Farm (PC7-332.3), Rangitata South Irrigation (PC7-235.2), Acton Farmers Irrigation Co-operative (PC7-154.2)  
\(^{700}\) PC7-356.2  
\(^{701}\) PC7-352.6, PC7-214.2  
\(^{702}\) For example; BCIL (PC7-153.5), Greenstreet Irrigation Society (PC7-312.2), Rangitata South Irrigation (PC7-235.3), Acton Farmers Irrigation Co-operative (PC7-154.2)  
\(^{703}\) PC7-472.3  
\(^{704}\) PC7-352.6, PC7-352.4, PC7-352.5, PC7-352.9, PC7-352.10
The definition of ‘commercial vegetable growing operation’ specifically excludes any farming operation that has an existing land use consent. There is further clarification on what vegetables are included such as peas or non-root vegetables such as onions.

**Analysis**

8.27. The majority of submissions on the definition relate to how the proposed commercial vegetable growing provisions apply. There is confusion as to whether the PC7 provisions apply to mixed farming systems that may incorporate vegetable growing as part of their activities as some submitters state that the current CLWRP provisions may be easier comply with for those farmers.

8.28. As described in the Section 32 Report, the PC7 provisions are intended to address the inability of the operative rules to effectively provide for commercial vegetable growers to rotate their activities across new areas of land. The provisions may also address some of the difficulties in preparing nutrient budgets using OVERSEER® arising from short crop cycles and lack of crop types able to be modelled. The intended outcome is to allow commercial vegetable growers to continue rotating their operations and to reduce the nutrient budget requirements where appropriate.

8.29. I agree that the definition, as currently worded, is unclear how it applies to farming operations that include a component of vegetable growing. I consider there are two options to resolve this uncertainty. Either, the framework applies solely to the activity of commercial vegetable growing, or the provisions apply to a type of ‘operation’ which must be more clearly defined to address mixed farming systems.

8.30. Amending the definition to define ‘commercial vegetable growing’ rather than ‘commercial vegetable growing operation’ will mean that the PC7 provisions will apply to any farming system where commercial vegetable growing is undertaken regardless of scale or the nature of other farming activities. This would have a consequence where two resource consents may be required for a farming operation, a discharge consent for the vegetable growing activities that enables land rotation and a land use consent that would apply to other farming activities, including the growing of pasture.

8.31. The second option is to further clarify the definition of ‘commercial vegetable growing operation’ to address mixed farming systems. Submitters have suggested adding the term ‘predominantly vegetable growing’ to reflect there may be other activities undertaken as part of the operation. I consider this suggested term is too vague for a definition and if the Hearing Panel wish to pursue this option, the definition should be amended to provide a percentage of total land area (of the operation) that can be used for non-vegetable growing activities. I do not prefer this option as it would not address the issue of land rotation for all commercial vegetable growing. Some operations would not be managed by this framework resulting in those growers still needing to find land with available nitrogen loss rates to allow vegetable growing. I recommend that the definition is amended to ‘commercial vegetable growing’ and to emphasise the land rotation and remove reference to pasture. While there may be two resource consents relating to the same parcel of land, any conflicts can be managed through consent conditions and this approach ensures all commercial vegetable growing land is managed under a single framework. This ensures the benefits of this framework apply to all vegetable growing activities.
8.32. Pye Group queries how the commercial vegetable growing provisions relate to farming enterprises. The CLWRP defines a farming enterprise as ‘an aggregation of parcels of land held in a single or multiple ownership (whether or not held in common ownership) that constitutes a single operating unit for the purpose of nutrient management.’ Farming enterprises are managed separately to individual farming activities under the current nutrient management framework. The PC7 provisions provide a regulatory regime that is not dissimilar to farming enterprises. However, PC7 also enables growing operations to occupy multiple properties, provided the area does not exceed the baseline area rather than strictly imposing nitrogen loss limits.

8.33. To improve the clarity of the provisions, I recommended amendments to the definition of commercial vegetable growing to refer to growing activities spanning multiple properties, whether or not held in the same ownership but operated as a single unit. This amendment will capture the lease blocks many growers rely on for crop rotation.

8.34. For growing operations that may already hold land use consents or that are managed as part of an irrigation scheme or principal water supplier, the proposed provisions may not affect those growers. A note is proposed under the ‘Irrigation Schemes’ heading in Section 5 that states:

If a commercial vegetable growing operation is irrigated with water from an irrigation scheme or principal water supplier that does not hold a discharge permit under Rule 5.62 or is not a permitted activity under Rule 5.41, then it is assessed under Rules 5.42CA to 5.42CE.

8.35. I understand there are very few growers who already hold land use consents. For any growers that may already hold consents, they are likely to require a new discharge permit to manage their growing operations and amendments to their land use consents to split vegetable growing activities from any other farming activities.

8.36. In relation to the extension of the commercial vegetable growing provisions to other similar activities, I consider there is insufficient information provided by those submitters to assess whether this is necessary. Submitters have identified tulip growing as a similar activity and many submitters who have provided details of their operations also grow vegetable seeds. I understand that the vegetable seeds may be for both the domestic and international market.

8.37. The PC7 provisions may result in a less onerous consent pathway which is a benefit intended to be enjoyed by commercial vegetable growers in recognition of the social benefits produce provides. I do not have sufficient information regarding the nutrient losses from seed production activities to provide a recommendation on whether the PC7 provisions should extend to vegetable seed production and welcome further evidence on this. I do recognise that seed production is a critical component of producing vegetables for consumption but further details on this activity are required. With regards to tulip bulbs and any other similar growing activities, I do not have any details on the scale of this activity and there are not the same social benefits as vegetable growing, therefore I do not recommend extending the applicability of the provisions to crops not intended for human consumption.

8.38. In response to Forest & Bird’s submission on the term ‘rotation’, I disagree that the reference is unclear. Crop rotation is a common practice that forms part of commercial vegetable growing and it is considered that the amended definition is clear.
Recommendation

8.39. That the definition of commercial vegetable growing operation is amended and all references to this definition updated as per Appendix E.

Permitted activities

8.40. Rule 5.42CA permits the discharge of nutrients from a commercial vegetable growing operation on a property up to 0.5 ha in area. There are no permitted activity conditions that form part of the rule. The purpose of the rule is to provide for small-scale operations such as home-based vegetable growers selling produce at roadside stalls.

8.41. Submissions were received in opposition to the rule seeking amendments to increase the area threshold and additional permitted activity rules have been proposed.

Rule 5.42CA area threshold

Submissions

8.42. Twenty-nine submission points were received on Rule 5.42CA, with four seeking the rule is retained as notified. S Kikstra\(^{705}\) and Forest & Bird\(^{706}\) have sought the deletion of Rule 5.42CA in its entirety.

8.43. Several submitters seek amendments to increase the area threshold, generally to either 4 ha or 10 ha. Acton Farmers Irrigation Co-operative\(^{707}\), Barhill-Chertsey Irrigation Limited\(^{708}\) and RSIL\(^{709}\) seek an increase to 4 ha. Ashburton Lyndhurst Irrigation\(^{710}\), Balle Bros Group\(^{711}\) and Horticulture NZ\(^{712}\) seek an increase to 10 ha as a permitted activity.

8.44. The reasons submitters cite for the increase in the threshold include:

- There is no evidence to suggest adverse effects from small growing activities are any worse that other permitted small-scale land uses;
- It is uneconomic to implement consent restrictions on such small areas; and
- Using OVERSEER\(^{\text{R}}\) on very small blocks can produce erroneous results.

8.45. Ashburton Lyndhurst Irrigation states that other land use activities smaller than 10 ha are permitted and that there will be little environmental benefit from further restricting commercial vegetable operations. HortNZ state that the area of 0.5 ha is inequitable, inefficient and ineffective and that the costs to obtain consent will mean that smaller growers will cease to operate.

\(^{705}\) PC7-4.1
\(^{706}\) PC7-472.46
\(^{707}\) PC7-154.11
\(^{708}\) PC7-153.14
\(^{709}\) PC7-235.13
\(^{710}\) PC7-390.4
\(^{711}\) PC7-185.1
\(^{712}\) PC7-356.31
8.46. Peelview Orchard\textsuperscript{713} oppose the proposed permitted activity threshold of 0.5 ha as the PC7 provisions would prevent a temporary use of their property for vegetable/high-value seed growing. Peelview Orchard seek the permitted activity threshold is increased to at least 5 ha.

8.47. Rhys Farm\textsuperscript{714} seek that amendments are made to permit operations greater than 0.5 ha subject to GMP.

**Analysis**

8.48. Permitting small scale vegetable growers is an efficient and effective method to achieve the objectives of the CLWRP. Smaller operations have an insignificant environment footprint and requiring resource consent for those operators would be a significant burden for negligible environmental benefit.

8.49. Based on the technical information available and from submissions, it is unclear how many landowners or occupiers would be classified as permitted activities. Many lifestyle properties on the outskirts of Canterbury towns are around 4 ha in area and therefore it is feasible that commercial vegetable growing could be undertaken on these properties.

8.50. The smallest landholding noted in a submission is 5 ha. Permitting operations up to 5 ha could result in increased nutrient losses in sub-regions where freshwater quality outcomes, limits and targets are not being achieved and nutrient reductions are necessary. Increasing the permitted growing area to this level is therefore undesirable as it would not be consistent with the objectives of the CLWRP or give effect to the NPSFM.

8.51. Permitting a slightly greater land area may be consistent with the intention of the provisions but as it is unknown how many landowners may be permitted by the proposed provisions, the benefits of increasing the land area to reflect a larger landholding such as 2 ha may be minimal. Further information from submitters could be beneficial to inform a decision on these submissions.

8.52. The permitted activity rule specifies that a commercial vegetable growing operation is permitted on a property 0.5 ha or less in area (emphasis added). The CLWRP definition of property is:

\textit{means any contiguous area of land, including land separated by a road or river, held in one or more than one ownership, that is utilised as a single operating unit, and may include one or more certificates of title.}

8.53. Based on the notified rule, growing operations would only be allowed where the entire property is 0.5 ha or less. When considering a small property is likely to include a dwelling, ancillary buildings and other outdoor living/landscaped areas, the proposed permitted activity rule would authorise only a very small growing area. Amending the wording of the rule to permit commercial vegetable growing on an area of 0.5 ha would be appropriate to achieve the intended purpose of the rule while still ensuring the nutrient losses are minimised and do not inhibit the achievement of freshwater objectives and water quality targets.

\textsuperscript{713} PC7-5.4
\textsuperscript{714} PC7-297.1
**Recommendation**

8.54. That Rule 5.42CA is amended as per Appendix E.

**Additional Permitted Activity Rules**

**Submissions and Analysis**

8.55. A number of submitters seek additional permitted activity rules to authorise nutrient losses from small commercial vegetable growing operations. These submitters propose two new rules, one to permit growing operations between 4 ha and 10 ha where there are no natural waterways, springs or wetlands on a property. The second rule is to permit growing operations subject to conditions that require registration with the Farm Portal, the preparation and implementation of a Management Plan, irrigation on land no greater than 50 ha and restrictions on the area for winter grazing.

8.56. In relation to the first proposed rule, I do not consider this is appropriate as the suggested provision could enable significant increases in nutrients discharged to groundwater, as a permitted activity. Increased nutrients discharged to groundwater could affect drinking water supplies or further contribute to nutrient concentrations in spring-fed rivers and streams. Either result would not give effect to the NPSFM and would not achieve the objectives of the CLWRP, specifically Objectives 3.1, 3.8A and 3.13.

8.57. With regards to the second proposed rule, again I do not consider this is appropriate as proposed conditions (2) and (3) could result in significant increases in nutrient discharges. While the proposed rule is consistent with some other permitted activity rules for farming activities, commercial vegetable growing differs from other farming types as nitrate loss rates can be significantly higher. The suggested rule does not consider the catchment freshwater quality outcomes, limits or targets and would be inconsistent with the overall CLWRP nutrient management framework where activities with meaningful contributions to nutrient catchment loads are required to either maintain or reduce their nutrient losses. Therefore, I recommend these submissions be rejected.

**Recommendation**

8.58. That no additional provisions are inserted.

**New Provisions**

8.59. Several submitters seek additional provisions are included in the CLWRP to provide for commercial vegetable growing. These submissions are addressed in this section.

---

715 For example; Acton Farmers Irrigation Co-Operative (PC7-154.12, PC7-154.24), Ashburton River Irrigators Association (PC7-343.21, PC7-343.22), BCIL (PC7-153.15, PC7-153.16), Greenstreet Irrigation Society (PC7-312.27), Rangitata South Irrigation (235.14, PC7-235.15).
Commercial Vegetable Growing Objective

Submissions and Analysis

8.60. HortNZ\textsuperscript{716} states that there is no CLWRP objective that supports the proposed commercial vegetable growing rules and seek an objective is inserted. Without a strong objective and policies to implement it, HortNZ considers there is limited guidance for the consideration of any non-complying activity consent application. HortNZ has not suggested any wording for the requested objective.

8.61. I note that the framework of the CLWRP consists of objectives in Section 3 that sit across all sections of the Plan. These objectives are purposefully short, clear and concise statements that identify the outcomes of the CLWRP. Based on the current objectives, I do not consider it is necessary to insert an objective specifically related to commercial vegetable growing. Objectives 3.5 and 3.11 already recognise the social and economic wellbeing resulting from the use of land and water.

Recommendation

8.62. That a new Objective is not inserted.

Low intensity horticulture

Submissions and Analysis

8.63. As proposed, PC7 only manages losses from any vegetable crops grown for human consumption, there is no consideration of the whether crops are likely to be low or high leaching. HortNZ\textsuperscript{717} seek a new definition, policy and rule to enable low intensity horticulture. The proposed definition of Low Intensity Horticulture is:

\textit{Means fruit, asparagus, vegetables grown under cover, legumes in arable rotations and berries.}

8.64. HortNZ states that fruit growing for example should be provided for as a low intensity farming activity and be enabled to operate and expand without excessive limitations.

8.65. Peelview Orchard\textsuperscript{718} also submits seeking changes to PC7 to enable fruit growing including the operation and expansion of orchards. Specifically, Peelview Orchard seeks that fruit growing is distinguished from other farming activities and to exclude fruit growing from rules relating to farming activities. Peelview Orchard states that fruit growing differs from other farming activities as it has a low environmental risk.

8.66. While fruit growing may be a low nitrate loss land use, the proposed provisions of PC7 only relate to vegetable growing not all horticultural activities. Additionally, OVERSEER\textsuperscript{®} can be used to model losses from kiwifruit, apples, grapes, avocado and peaches and fruit growing does not rotate across land like commercial vegetable growing. I consider that it is

\textsuperscript{716} PC7-356.22
\textsuperscript{717} PC7-356.21, PC7-356.46
\textsuperscript{718} PC7-5.5
unnecessary to provide a permitted activity rule for fruit growing as fruit growing can be managed under the existing rule framework.

8.67. HortNZ include vegetables grown under cover, legumes in arable rotations and asparagus in their proposed definition. In relation to vegetables grown under cover I have suggested an amendment to the definition of commercial vegetable growing operation which would exclude vegetables grown under cover from being captured by these rules. HortNZ also suggests that legumes in arable rotations are excluded. Based on the recommendations regarding the definition of commercial vegetable growing operation, legumes grown for human consumption would be regulated under the PC7 provisions.

8.68. The only specific vegetable crop that HortNZ seeks is defined as low intensity is asparagus. I understand asparagus crops do not require the same rotation cycles as other vegetable crops and as such there is less cultivation of land and nutrient inputs can be better matched to nutrient demand. Submitters have not provided evidence of leaching rates from asparagus growing areas in Canterbury. I am also not aware of information regarding the number of asparagus growers in the region and if those growers solely grow asparagus crops. Without this information, it is not possible to provide comment on the appropriateness of permitting asparagus growing and as such I do not recommend any changes.

Recommendation

8.69. That no additional provisions are inserted.

Nutrient Management Monitoring Program

Submissions and Analysis

8.70. Ballance\textsuperscript{719} supports Policy 4.36A as notified and seek it is retained subject to the insertion of a new policy that requires the revision of water quality outcomes, limits and targets to be informed by a comprehensive nutrient management monitoring program. It also seeks a new method that requires the Council to maintain this monitoring program using inputs from consent holders and Farm Environment Plans.

8.71. The policy suggested by Ballance relates to possible future plan changes in order to revise water quality outcomes limits and targets and functions that the Council is already required to carry out. Section 35 of the RMA requires the Council to gather information and monitor the efficiency and effectiveness of policies and rules in the regional plan. As such, I consider it is unnecessary to insert any new provisions to re-state this requirement.

Recommendation

8.72. That Policy 4.36A is retained as notified and no method is inserted.

---

\textsuperscript{719} PC7-441.4
Capping Commercial Vegetable Growing Area

8.73. PC7 seeks to restrict the expansion of commercial vegetable growing area beyond the baseline commercial vegetable growing area. The exception is where it can be demonstrated the nitrogen loss from the new vegetable growing area is no greater than the lawful nitrogen loss rate of the new location.

Overall concept

Submissions

8.74. In general, a significant number of submissions were received on PC7 seeking amendments to reduce nutrient discharges to protect water quality. On the commercial vegetable growing provisions, 10 submitters seek that the restrictions on growing area are deleted from PC7. The reasons cited by submitters include:

- The proposed constraints are not consistent with the purpose of the proposed NPS for Highly Productive Land.
- The provisions will not allow growing to keep up with demand in the context of a growing population.
- The consumption of vegetables is likely to remain relatively static.
- An increase in production does not necessarily mean an increase in leaching.
- There are only pockets of highly productive land in Canterbury that is suitable for year-round production.
- The vegetable production area is only 3-5% of the total and 3-4% is the margin of error of an OVERSEER® budget.
- The ability to demonstrate an expansion is jeopardised unless appropriate limits and scientifically proven measuring technologies are used.
- The provisions affect the ability to lease land to growers.

8.75. Pye Group seeks amendments to PC7 to promote the growth of vegetable growing operations provided they are managed to GMP. However, in the event the restriction on growing area is not removed, it seeks that the baseline period in the definition of baseline growing area is revised to include the past five years of operation.

8.76. Balle Bros Group seeks amendments to PC7 to enable land conversion for commercial vegetable growing where appropriate mitigations are in place through the FEP. Balle Bros

---

720 Policy 4.36A(b), 5.42CB(2)
721 BCIL, Acton Farmers Irrigation Co-operative, Federated Farmers, Greenstreet Irrigation Society, Pye Group, Rhodes Hill and Belmont Farm, McCains Foods, McCain Growers Unincorporated Society, Rangitata South Irrigation, Ashburton River Irrigators Association
722 BCIL, Acton Farmers Irrigation Co-operative, Greenstreet Irrigation Society, Rangitata South Irrigation
723 BCIL, Acton Farmers Irrigation Co-operative, Federated Farmers, Greenstreet Irrigation Society, Pye Group, Rangitata South Irrigation, Juice Products
724 A Lim
725 A Lim
726 A Lim
727 A Lim
728 McCain Foods and McCain Growers Unincorporated Society
729 Rathkeale Farming Partnership
730 PC7-352.15
731 PC7-185.3
Group states that the current proposal may be unable to provide for a growing domestic population which is likely to have significant economic and social impacts on the region and wider communities. Balle Bros Group also seeks the deletion of the maximum area cap or clarify how it will work on a crop rotational basis.

8.77. Eyreton Produce Ltd\(^{732}\) seeks that the limitations on future development of different types of arable and vegetable crops are removed and that PC7 provides for new growing operations and diversification into different crops.

8.78. Alps Seeds Ltd\(^{733}\) states that new technology, research and development and attention to nitrogen usage and water management will provide far greater environmental improvement than managing activities as undertaken in the 2009-2013 period. Alps Seeds Limited states that due to increased compliance and regulatory costs having to reduce their growing area to the proposed Baseline Commercial Vegetable Growing Area would no longer make its business viable.

8.79. A Lim\(^{734}\) seeks that for glasshouse operations, any increase in growing area should be permitted as there is a high degree of control over nutrient input and any discharge to land is negligible.

8.80. HortNZ\(^{735}\) do not oppose the area cap as set in Policy 4.36A and Rule 5.42CB but seek a new clause in Policy 4.36A, new rule and consequential amendments are inserted to provide for 600 ha of new commercial vegetable production area to meet demand generated by population growth.

8.81. Ravensdown\(^{736}\) seeks that the term “lawful nitrogen loss” is defined in the CLWRP as it is not clear what is actually meant by this phrase.

**Analysis**

8.82. The submissions on these provisions highlight the conflicting issues to be resolved. On one hand increasing vegetable growing areas is likely to contribute to the social and economic well-being of the Canterbury Region but water quality is also degraded in many catchments making any intensification of land use difficult without compromising the water quality.

8.83. I understand that to enable the rotation of commercial vegetable operations across new areas of land, constraining growers to their total baseline area is intended to be the main mechanism to manage nutrient losses to achieve water quality outcomes. I consider that it is not possible to relax the proposed provisions to enable further expansion as this would not achieve the objectives of the CLWRP or give effect to the NPSFM.

8.84. In response to submissions regarding the proposed NPSHPS, I consider that the proposed NPSHPS does not set any specific direction that must be given effect to. The NPSHPS is still in a draft form and it would be inappropriate to pre-empt the final document. Additionally, the scope of the proposed NPSHPS specifically excludes regional constraints on

---

\(^{732}\) PC7-231.1, PC7-231.2  
\(^{733}\) PC7-327.8  
\(^{734}\) PC7-478.1  
\(^{735}\) PC7-356.12, PC7-356.36, PC7-356.37, PC7-356.38  
\(^{736}\) PC7-114.4
land use flexibility, for example constraints on horticultural production for water quality purposes.

8.85. A consequence of the PC7 provisions is that they could inadvertently allow significant increases in nutrient losses from expanded or new commercial vegetable growing operations. Policy 4.36A(b) and condition (2) of Rule 5.42CC refer to only allowing the expansion of an existing commercial vegetable operation or new operation where the nitrogen loss rate from the operation does not exceed the lawful nitrogen loss rate applicable to the proposed location. Ravensdown seeks that the term lawful nitrogen loss rate is defined in the CLWRP. This has not been defined currently as the applicable lawful nitrogen loss rate can be determined in a number of ways. For example, properties may be subject to a nitrogen loss limit through a resource consent or a permitted activity rule. It is determined on a case by case basis.

8.86. However, the CLWRP permits farming activities on varying sized properties and where certain types of farming activities are not undertaken. For those permitted farming activities, no nitrogen loss limits apply and therefore the expansion of commercial vegetable growing operations onto these sites could significantly increase nutrient losses in some catchments. To ensure that freshwater quality outcomes, limits and targets are achieved, I recommend that clause (b) of Policy 4.36A and condition (2) of Rule 5.42CC are amended to refer to the lawful nitrogen loss rate applicable, or where no nitrogen loss rate applies the Baseline GMP Loss Rate. I recognise that the Baseline GMP Loss Rate may not be applicable in all sub-regions. However, for ease of implementation and to achieve consistency across the region, I recommend adopting the Baseline GMP Loss Rate rather than tailoring a solution to each sub-region. I consider that this amendment would respond to general submissions on PC7 seeking provisions that nitrate losses are controlled to ensure freshwater outcomes, limits, and targets are achieved.

8.87. With regards to A Lim’s submission, the recommended changes to the definition of commercial vegetable growing exclude vegetables crops grown under cover and therefore an increase in glasshouse area would not be managed by these rules.

Recommendation

8.88. That Policy 4.36A and Rule 5.42CC are amended as per Appendix E.

Definition – Baseline Commercial Vegetable Growing Area

8.89. PC7 proposes the following definition of Baseline Commercial Vegetable Growing Area:

Means the aggregated area of land used for a commercial vegetable growing operation in any 12-month consecutive period within the period of 1 January 2009 to 31 December 2013 and under the control (owned or leased) of a single grower or enterprise.

8.90. This section of the report summarises and analyses submissions seeking specific amendments to, or the deletion of this definition.

737 For example; Rule 5.44 permits the use of land for farming on a property greater than 10 hectares in area where the property authorised to be irrigated with water is less than 50 hectares.
738 For example; Selwyn-Te Waihora and South Coastal Canterbury.
739 For example; De Lu, D (PC7-36.3), Sturrock, D.M (PC7-27.1), Seyb, L (PC7-276.1), Burke, C (PC7-1.1)
Submissions

8.91. Thirteen submissions were received on the definition of Baseline Commercial Vegetable Growing Area. Six submitters seek the definition is deleted in its entirety as they disagree with limiting operations to a baseline area. Federated Farmers seek the definition is retained as notified.

8.92. Ravensdown seeks the following amendments to capture the maximum total of aggregated land as was intended:

Means the maximum total aggregated area of land used for a commercial vegetable growing operation in any 12 month consecutive period within the period of 1 January 2009 to 31 December 2013 and under the control (owned or leased) of a single grower or enterprise.

8.93. Ellesmere Sustainable Agriculture Incorporated opposes the definition due to a lack of consultation with them and they are concerned as to how it will be applied to a mixed farming system. It is also concerned with how this applies to leased land and whether there is flexibility to allow farmer to choose which definition best suits the farm operation.

8.94. Pye Group, HortNZ and Potatoes NZ seek amendments to the baseline period dates:

- Pye Group seeks that the definition is focused on the most recent years;
- HortNZ seeks the dates are revised to 20 July 2014 to 20 July 2019. HortNZ state that since the baseline period of 2009-2013, there has been a significant change in the location of growing and the total land area planted in vegetable crops. As an example, HortNZ reports that the maximum area planted in onions during the period of 2009-2013 was 870.2 ha and this increased by 1,093 ha in 2018 and 24 new growing operations have established; and
- Potatoes NZ requests that the land area is based on area at time of notification and is based on land defined by the Land Use Capability Index as Class I or Class II.

8.95. HortNZ also seeks further clarity as to what level of information would be necessary to demonstrate the baseline commercial vegetable growing area as set out in the definition.

8.96. McCain Foods and McCain Growers Unincorporated Society disagree with the Section 32 Report statement that vegetable production has not changed significantly over the last 10 years and they state their production area has increased by 12% compared to the baseline commercial vegetable growing area.

8.97. HortNZ also seeks the definition is also amended to refer to “the full sequence of crops and pasture used as part of a rotation...”.

---

740 For example; BCIL (PC7-153.4), Acton Farmers Irrigation Co-Operative (PC7-154.1), Greenstreet Irrigation Society (PC7-312.1), Rhodes Hill and Belmont Farm (PC7-332.2), Rangitata South Irrigation (PC7-235.1), Ashburton River Irrigators Association (PC7-343.1)
741 PC7-430.1
742 PC7-114.2
743 PC7-207.6
744 PC7-352.11
745 PC7-356.1
746 PC7-404.21
747 PC7-187.7
748 PC7-189.7
8.98. Forest & Bird\textsuperscript{749} has submitted seeking that the definition is amended to provide certainty as to whether the “area of land” is site specific or intended as an aggregate area and if it is intended to allow flexibility of crop rotation within that area of land or within the equivalent area anywhere within the catchment/sub-catchment.

8.99. Pye Group\textsuperscript{750} has also submitted seeking that the definition is amended to recognise the difference in areas of a single enterprise under irrigation scheme or individual consents. Pye Group states that it is unclear what provisions would be in place where an enterprise has areas of land under a nutrient discharge consented irrigation scheme and area under an individual land use consent.

\textit{Analysis}

8.100. I agree with the request from Ravensdown to specify the land area is the ‘maximum’ between 1 January 2009 to 31 December 2013. Due to the varying nature in location and size of vegetable growing areas for individual growers, it is preferable that the maximum area is used to reflect the largest area that may be required for a growers’ operation. I do not agree with deleting the term ‘consecutive’ as this ensures that the maximum area is subject to a temporal period rather than allowing the summation of areas from different months during the baseline period.

8.101. In response to submitters seeking changes to the baseline period, I do not agree with the suggestions provided. The proposed baseline period aligns with the current baseline period for all farming activities. Changing the baseline years will therefore be inconsistent with the region-wide framework and would affect the ability to achieve freshwater quality outcomes, limits and targets if the growing areas have expanded as submitters state. Additionally, any expansion of the growing areas since the baseline period as currently applied may not have been authorised under the operative CLWRP rules.

8.102. HortNZ has queried the level of information required to demonstrate growing areas during the baseline period due to the length of time that has passed. I consider that PC7 does not change the level of information necessary as the current operative rules would still require these details, therefore growers have known what information is required and for what time period. Each individual grower will have varying levels of information available which can be assessed at the time of consent.

8.103. Ellesmere Sustainable Agriculture Incorporated, Pye Group and Forest & Bird raise concerns regarding the applicability of the definition to growing activities. I consider that the changes recommended to the definition of commercial vegetable growing operation provide sufficient clarity to address these submitters’ issues.

\textit{Recommendation}

8.104. That the definition of Baseline Commercial Vegetable Growing Area is amended as per Appendix E.

\textsuperscript{749} PC7-472.1, PC7-472.2
\textsuperscript{750} PC7-352.12
Policy 4.36A(b)

8.105. Policy 4.36A(b) states:

Avoiding the establishment of a new commercial vegetable growing operation, or any expansion of an existing commercial vegetable growing operation beyond the baseline commercial vegetable growing area, unless the nitrogen losses from the operation can be accommodated within the lawful nitrogen loss rate applicable to the new location;

Submissions and Analysis

8.106. Ravensdown\(^751\), HortNZ\(^752\) and Potatoes NZ\(^753\) seek amendments to Policy 4.36A(b) to ‘soften’ the directiveness of the provisions, specifically replacing the term ‘avoiding’ with either ‘restricting’ or ‘limiting’.

8.107. I do not agree with the submitters’ suggested replacement of the term ‘avoiding’. The provisions allow expansions or new operations only where water quality outcomes and targets will not be jeopardised. Softening this clause as suggested would not achieve the objectives of the CLWRP or NPSFM.

Recommendation

8.108. That Policy 4.36A is retained as notified.

Nutrient budgeting and nutrient reductions

8.109. Under the PC7 provisions commercial vegetable growers would be required to provide nutrient budgets for their operations to comply with the requirements of Schedule 7 as part of their Farm Environment Plan. Section 4B of Schedule 7 requires

a. nutrient budgets which show the nitrogen baseline and nitrogen loss calculation for the property, farming enterprise or commercial vegetable growing operation and

b. a report from the Farm Portal which shows for any property, farming enterprise or commercial vegetable growing operation the Baseline GMP Loss Rate and Good Management Practice Loss Rate or in those circumstances provided for in this Plan, the Equivalent Baseline GMP Loss Rate and Equivalent Good Management Practice Loss Rate.

8.110. Section 5A of Schedule 7 sets out the objective and targets for managing nutrients. Target 1 requires the nitrogen losses from farming activities are below the Baseline GMP Loss Rate or Good Management Practice Loss Rate (whichever is lesser) or the consent nitrogen loss limits. This implies that commercial vegetable growing operations will be subject to a nitrogen loss limit and will need to prepare a nutrient budget to demonstrate compliance with this limit.

8.111. Nutrient budgets may also be necessary to demonstrate any new operation or the expansion of an existing operation will not result in nitrogen losses beyond the lawful nitrogen loss rate

\(^751\)PC7-114.5
\(^752\)PC7-356.12
\(^753\)PC7-404.4
of a new location, or to demonstrate how nutrient loss reductions required by Sections 6 to 15 of the CLWRP will be achieved\textsuperscript{754}.

\textbf{Submissions}

8.112. Balle Bros Group\textsuperscript{755} seeks amendments to PC7 to remove the requirement for OVERSEER® modelling for commercial vegetable growing. Balle Bros Group states that OVERSEER® in its current form is impractical for use in the horticultural sector due to a high margin of uncertainty and it does not consider many management approaches as would likely be encouraged through the FEP.

8.113. J Kyle\textsuperscript{756}, Juice Products New Zealand Ltd\textsuperscript{757} and Eyreton Produce Ltd\textsuperscript{758} also oppose the use of OVERSEER® citing concerns with the accuracy in assessing nutrient discharges for crops. J Kyle is concerned this may affect the ability to lease his land in the future.

8.114. A number of submitters oppose the use of OVERSEER® to assess nutrient discharges from horticultural systems and support a more generic method for tallying nutrient losses\textsuperscript{759}. These submitters are largely involved with the potato sector and seek a more accurate "direct measurement" based approach.

8.115. Potatoes NZ\textsuperscript{760} states that the use of a nitrogen reference point or benchmark is problematic for potato production due to technical issues with the estimation tools. Potatoes NZ consider the best indicator of environmental improvement is evidence of the actions within the farm plans being implemented. Potatoes NZ has proposed a performance framework to enhance the FEP approach and seeks that this in introduced into the CLWRP via a separate Schedule (Schedule 7B). The proposed Schedule would require a Rotation (Commercial Vegetable Production) Management Plan that identifies the key risk areas for the discharge of sediment, nitrogen, phosphorus and microbial pathogens and identify actions, and timeframes for those actions to be completed in order to reduce the diffuse discharges of contaminants where practicable. The Rotation Management Plan would provide measured and predicted data for adaptive management and be capable of integrating with other sub-region, nutrient allocation zone and catchment scale accounting systems.

8.116. Pye Group\textsuperscript{761} opposes the requirement for further nutrient reductions and seek amendments to clause (c) of Policy 4.36A to delete this requirement. Pye Group considers the restrictions on land area and nitrogen loss rates associated with certain land locations are sufficient.

\textsuperscript{754} As required by Policy 4.36A and Rule 5.42CB.
\textsuperscript{755} PC7-185.7
\textsuperscript{756} PC7-411.8
\textsuperscript{757} PC7-401.1
\textsuperscript{758} PC7-231.3
\textsuperscript{759} For example; Alex McDonald Ltd (PC7-6.3), Alps Seeds (PC7-327.3), Barnes Family Farms Ltd (PC7-94.9), Bluebirds Foods Ltd (Pepsi co) (PC7-213.3), Fallgate Farm (PC7-203.3), Heartland Potato Chips (PC7-389.3), Hewson Farms NZ (PC7-267.3), McCain Growers Society Unincorporated (PC7-189.8), McCains Food (PC7-187.8), D McLeod (PC7-467.4), Mr Chips Ltd (PC7-281.5), R Oakley (PC7-63.3), IR and WD Redmond (PC7-104.3), A Scott (PC7-130.3), McFarlane Agriculture & McFlynn Potatoes Ltd (PC7-278.23), Turley Farms Ltd (PC7-206.6)
\textsuperscript{760} PC7-404.22
\textsuperscript{761} PC7-352.16
8.117. HortNZ\textsuperscript{762} seeks amendments to PC7 to remove the requirement for nutrient budgets to be completed annually as part of FEP audits due to the considerable inaccuracies with OVERSEER\textsuperscript{®}.

8.118. A Lim\textsuperscript{763} submits that land swapping or sharing should be encouraged without requiring any additional nutrient budget accounting for either party as the arrangement is temporary and the total footprint does not change.

**Analysis**

8.119. PC7 requires commercial vegetable growers to prepare an FEP in accordance with Schedule 7 and Section 4B of Schedule 7 requires a FEP to include nutrient budgets. Section 5 requires a description of how nitrogen losses from farming activities will be at or below the lesser of the Baseline GMP Loss Rate or Good Management Practice Loss Rate or the consented nitrogen loss limit. The current CLWRP provisions therefore specify that OVERSEER\textsuperscript{®} budgets are to be prepared or equivalent modelling as provided by the ‘equivalent pathway’.

8.120. I recognise that one of the issues with the current CLWRP framework for commercial vegetable growers is the requirement to undertake complex and multiple nutrient budgets to reflect the different crop rotations and the margin of error for model outputs is higher than other farming types. I understand that PC7 is intended to address this matter and as such the provisions do not explicitly require OVERSEER\textsuperscript{®} nutrient budgets or assigned loss rates. However, changes to Schedule 7 have not been proposed to specifically exclude commercial vegetable growers from preparing a nutrient budget using OVERSEER\textsuperscript{®}. The current provisions are therefore confusing and uncertain.

8.121. Amendments are necessary to resolve this ambiguity and two options seem apparent. The first option is to amend Policy 4.36A and the rules to clearly convey that growing operations will be subject to nitrogen loss limits and that OVERSEER\textsuperscript{®} budgets (or equivalent) are necessary. This option reduces the benefits of the separate regulatory framework for commercial vegetable growing operations and is unlikely to be effective at providing for the rotation of growing operations across different land parcels. A commercial vegetable grower could choose not to prepare their FEP in accordance with Schedule 7 to avoid the preparation of nutrient budgets and apply for consent under Rule 5.42CD. This is the non-complying activity rule and therefore the grower would need to pass the ‘gateway test’ by demonstrating that either the adverse effects of the activity on the environment will be minor or that the activity will not be contrary to the objective and policies of the relevant plan (and any proposed plan)\textsuperscript{764}. The current objectives and policies of PC7 and the CLWRP explicitly require FEPs to be prepared in accordance with Schedule 7 and therefore any such application may be not meet Section 104(D)(1)(b)\textsuperscript{765}.

8.122. The preferred option is to amend PC7 to clarify the flexibility for commercial vegetable growers to determine how they will demonstrate their nutrient losses. Providing flexibility may avoid some growers having to prepare OVERSEER\textsuperscript{®} nutrient budgets but also reduces the certainty of what a grower will be required to prepare and submit for their resource consent application. Without some clear guidance, there is a risk of inconsistency in the consent process for similar operations and potentially greater costs to obtain a resource consent. I

\textsuperscript{762} PC7-356.12
\textsuperscript{763} PC7-478.2
\textsuperscript{764} Section 104D(1)(a) and Section 104D(1)(b)
\textsuperscript{765} Policies 4.36A, 4.41
recommend providing a clear exemption for supplying nutrient budgets in the PC7 rules to resolve the current ambiguity. As for providing policy direction on what other forms of information could be provided, this is likely to be determined on a case by case basis and as such no recommendations have been made to amend the provisions. However, this may include information such as reduced fertiliser use, increased irrigation efficiency or the efficacy of constructed mitigation. The potential risks of inconsistency in the consent process and uncertainty regarding resource consent application details can be overcome through pre-application advice and consent application forms.

8.123. A Lim raises concerns relating to nutrient budget requirements as new land is brought into a growing operation. The provisions are currently uncertain with regards to nutrient budget requirements not only for vegetable growers but also for any landowner that may lease land to a commercial vegetable growing operation. In many situations, the lessor may already hold a land use consent with a nutrient loss limit determined by their nitrogen baseline. In this regard it is not clear if A Lim seeks to address how nutrient loss limits apply and are assessed using nutrient budgets by the lessor, or if simply leasing land should not increase the number of nutrient budgets required. I consider that it may be appropriate to include some additional policy direction to guide how this overlap may be addressed but welcome further evidence to inform this guidance.

Recommendation

8.124. That Policy 4.36A, Rule 5.42CB, and Rule 5.42CC are amended as per Appendix E.

Movement between sub-regions and NAZ’s

8.125. Policy 4.36A(d) and Rules 5.42CB (condition (3)) seek to constrain the movement of commercial vegetable growing operations to within the same sub-region or NAZ. Where a commercial vegetable growing operation spans sub-regions or NAZ, a discretionary activity resource consent is required.

Submissions

8.126. There are several submitters\(^{766}\) seeking amendments to PC7 to allow growers to shift growing operations between sub-regions and NAZ.

8.127. Federated Farmers seeks the deletion of sub-clause (d) of Policy 4.36A and condition (3) of Rule 5.42CB as they consider it appears driven by administrative convenience rather than environmental reasons. Federated Farmers also seek consequential changes to Rule 5.42CC to delete the reference to condition (3) of Rule 5.42CB.

8.128. Pye Group states that restricting growers to the same sub-region or NAZ will limit mitigation options of relocating growing to less sensitive locations and will also impact landowners’ options as to who can lease land.

\(^{766}\) For example; McFarlane Agriculture & McFlynn Potatoes Ltd, BCIL, Federated Farmers, Pye Group, Rhodes Hill and Belmont Farm Ltd, Ravensdown, Rangitata South Irrigation.
8.129. Scottfresh opposes the restriction of growing to a sub-region or NAZ as:
- it is difficult to ascertain what NAZ an operation is within, and growers operate across sub-regions or NAZ;
- the proposed consent pathway is uncertain; and
- the climate conditions of growing areas is important and limiting movement between catchments restricts the ability to grow on the best suited properties.

8.130. Many submitters\textsuperscript{767} seek provisions to be added to allow existing areas of vegetable growing to move to land in a different catchment in order to account for crop rotation, leased land and enable growers to move to less environmentally sensitive locations.

8.131. Ashburton Lyndhurst Irrigation\textsuperscript{768} states that flexibility for where commercial vegetable production may be located is required especially for operations less than 10 ha proved the aggregated nutrient loss load, as it applied to larger properties, is not exceeded.

8.132. Mr Chips\textsuperscript{769} states that the current provisions may be unable to provide for a growing domestic population due to the impacts of restricting land use flexibility.

8.133. Ravensdown\textsuperscript{770} seeks condition (3) of Rule 5.42CB and any references to it are deleted from PC7. Ravensdown states that while managing issues associated with cross boundary activities is challenging but achievable and therefore such activities should not be unduly restricted.

8.134. Potatoes NZ\textsuperscript{771} seeks an amendment to clause (d) of Policy 4.36A as follows:
\begin{quote}
Constraining, as far as practicable, unless a farming enterprise, commercial vegetable growing operations to a single nutrient allocation zone or sub-region; and
\end{quote}

8.135. Ballance\textsuperscript{772} seeks that Rule 5.42CB is amended to provide agile working methodologies required to maintain farm operations.

8.136. Balle Bros Group\textsuperscript{773} opposes the restriction on rotation into different sub-regions and NAZ and state that demonstration of whether nitrogen loss rates can meet the applicable requirements should only apply to the area of the new operation and that offsetting of nitrogen loss should be enabled within the same sub-region.

8.137. HortNZ\textsuperscript{774} opposes condition (3) of Rule 5.42CB and seek that further clarification is provided regarding the administration of the provisions managing the rotation of land within multiple catchments. HortNZ questions whether commercial vegetable production is considered an enterprise or not and if growers with land in multiple catchments would be considered under

\textsuperscript{767} For example; Aberdeen Farm Ltd, Alex McDonald Ltd, Alps Seeds Ltd, Barnes Family Farms Ltd, Bluebirds Foods Ltd (Pepsi co), Fallgate Farm, Heartland Potato Chips, Hewson Farms NZ, McCain Growers Society Unincorporated, McCains Food, D McLeod, Mr Chips Ltd, R Oakley, JR and WD Redmond, A Scott, McFarlane Agriculture & McFlynn Potatoes Ltd, Griffins Food Ltd, Makikihi Fries Ltd, Talleys Group, Turley Farms Ltd, Colee Farming Ltd, Eyreton Produce Ltd, W J Winter & Sons Ltd
\textsuperscript{768} PC7-343.10
\textsuperscript{769} PC7-281.4
\textsuperscript{770} PC7-114.100
\textsuperscript{771} PC7-404.5
\textsuperscript{772} PC7-441.8
\textsuperscript{773} PC7-185.12
\textsuperscript{774} PC7-356.32
Rule 5.42AB as a default or could they be considered a restricted discretionary activity under Rule 5.42AA.\textsuperscript{775}

Analysis

8.138. Restricting the movement of commercial vegetable growing operations across multiple sub-regions or NAZs will assist in ensuring that water quality outcomes and targets are met. Without this restriction and using the total growing area to manage nutrient losses potentially allows growers to shift their growing area into one catchment which could result in further degradation of water quality. I consider that an existing commercial vegetable growing operation should be restricted to their baseline growing area in each sub-region, nutrient allocation zone or other geographical area that has been used to set water quality outcomes and targets. I consider that discretionary activity status is appropriate where a growing operation spans multiple nutrient assessment areas as this ensures each individual operation can be fully assessed. In order to provide greater clarity for existing operations that span multiple nutrient assessment geographic zones, I recommend amendments to clause (d) of Policy 4.36A to direct that consent may be granted where there is clear accounting for nutrient losses to meet catchment loads or limits. The terminology currently used to describe the geographic units creates some confusion. Policy 4.36A and Rule 5.42CB only refer to sub-region or nutrient allocation zone, however varying terms are used to describe the units in Section 6 to 15 that have been used to set water quality outcomes and targets and any nutrient reductions. I recommend a new definition of ‘nutrient management area’ to ensure that growing operations are managed within these geographic units to achieve the freshwater quality outcomes, limits and targets that apply. I consider there is sufficient scope in general submissions on PC7 seeking provisions that nitrate losses are controlled to ensure freshwater outcomes, limits, and targets are achieved.\textsuperscript{776}

8.139. In response to submitters’ uncertainty regarding whether growing operations are farming enterprises, I consider the changes to the definition of commercial vegetable growing operation resolve this confusion.

Recommendation

8.140. That a new definition of Nutrient Management Area is inserted and Policy 4.36A and Rule 5.42CB are amended as per Appendix E.

GMP, FEP’s and Management Plans

8.141. Policy 4.36A(a) and (e) requires commercial vegetable growers to operate in accordance with GMP and prepare and implement a FEP in accordance with Schedule 7. Rules 5.42CB and 5.42CC require a FEP is prepared and submitted with the resource consent application and if a FEP is not prepared, the discharge of nutrients from a commercial vegetable growing operation is classified as a non-complying activity.

\textsuperscript{775} I note it appears the submitter has incorrectly referred to Rules 5.42CB and 5.42CC.

\textsuperscript{776} For example; De Lu, D (PC7-36.3), Sturrock, D.M (PC7-27.1), Seyb, L (PC7-276.1), Burke, C (PC7-1.1)
Submissions

8.142. Many submitters support requiring growers to operate at GMP. Ravensdown and North Canterbury Fish & Game supports the amendments to Schedule 7 and 7A, specifically the inclusions of references to commercial vegetable growing operation and seek they are retained as notified.

8.143. Several submitters raise concerns regarding how the Schedule 7 requirements apply to commercial vegetable growing activities. Acton Farmers Irrigation Co-Operative, Ashburton River Irrigators Association and BCIL seek amendments to Schedule 7 to address how property identification and nitrogen baseline requirements apply on temporary lease blocks. Acton Farmers Irrigation Co-Operative also states that the current requirements do not take into consideration where multiple properties form part of an integrated farming enterprise such as a dairy support block or other arable operation. Pye Group specifically queries what land is to be included and how the FEP will apply to leased land.

8.144. Greenstreet Irrigation Society seeks that Rule 5.42CC is deleted in its entirety, or if it is retained, to remove the requirement to submit the FEP with the resource consent application. Greenstreet Irrigation Society states it is not necessary to include the Farm Environment Plan as the grower must prepare and adhere to it when they are audited.

8.145. Acton Farmers Irrigation Co-Operative, Ashburton River Irrigators Association, BCIL, Greenstreet Irrigation Society and Rhodes Hill Limited and Belmont Farm Limited seek amendments to Schedule 7A to give relief to minor commercial vegetable growing operations, specifically amendments to address actions required to minimise potential direct discharges of sediment and other contaminants to water.

8.146. Ngā Rūnanga also seeks a new condition for Rule 5.42CA requiring a management plan as follows:

A Management Plan has been prepared in accordance with Schedule 7A and is implemented within 12 months of the rule being made operative and supplied to the Canterbury Regional Council on request.

For example; Aberdeen Farm Ltd (PC7-434.3), Alex McDonald Ltd (PC7-6.4), Alps Seeds Ltd (PC7-327.4), Barnes Family Farms Ltd (PC7-94.10), Bluebirds Foods Ltd (Pepsi co) (PC7-213.4), Fallgate Farm (PC7-203.4), Heartland Potato Chips (PC7-389.4), Hewson Farms NZ (PC7-267.4), McCain Growers Society Unincorporated (PC7-189.5), McCains Food (PC70187.5), D McLeod (PC7-467.5), R Oakley (PC7-63.4), JR and WD Redmond (PC7-104.4), PC7-114.23, PC7-114.112, PC7-114.26 PC7-95.50, PC7-95.51 PC7-154.21 PC7-343.41 PC7-153.25 PC7-352.23 PC7-312.29 PC7-154.22 PC7-343.42 PC7-153.26 PC7-312.60 PC7-332.16 PC7-423.33
8.147. WWHT\textsuperscript{791} requests a new definition of GMP specifically for commercial vegetable growing. WWHT propose the following:

*Good management practice means farming practice that meets or exceeds specified manuals or guidelines accredited by E-Can for horticulture activities.*

**Analysis**

8.148. PC7 proposes limited amendments to Schedule 7 to tailor the requirements of Part B for commercial vegetable production. As notified, these amendments only ensure that the Schedule applies to a commercial vegetable growing operation rather than exempting operations from some requirements or adding requirements that only apply to vegetable growing. This has caused some difficulty in determining how a FEP for vegetable growing should be prepared to submit with a resource consent application. I consider that no additional changes are required to Schedule 7 as recommended amendments to the definition of commercial vegetable growing operation and Policy 4.36A address submitters’ concerns.

8.149. I consider that it is necessary for the FEP to be submitted with a consent application as it demonstrates the farming practices undertaken to ensure GMP occur and would also be used to demonstrate any nutrient reductions required.

8.150. With regards to requiring small commercial vegetable growing operations to prepare and implement a Management Plan, given the recommended permitted activity threshold is only 0.5 ha of growing area I do not consider this is necessary. I note that this would be consistent with the region-wide permitted activity rules which do not require Management Plans in accordance with Schedule 7A for properties less than 10 ha.

8.151. In response to WWHT’s request for a specific definition of GMP for horticulture, I consider that it is unnecessary to include this definition. As described in Part 2, Section 3 of this report, GMP is an important aspect of the region-wide nutrient management framework and it would be inappropriate to provide industry specific definitions as this could lead to inequity and confusion. The current CLWRP definition of GMP refers to the document “industry agreed Good Management Practices relating to water quality”. These practices were identified following consultation with farmers, rural professionals and industry representatives, including from HortNZ. The practices as described apply equally to some industries and industry specific direction is also included. As such, I consider the current definition suitably addresses GMP for commercial vegetable growing.

**Recommendation**

8.152. That Schedule 7 and 7A are retained as notified.

**Specific decisions sought on commercial vegetable growing rules**

8.153. This section of the report summarises and analyses submission seeking particular amendments to the rule framework for commercial vegetable growing not already addressed.

\textsuperscript{791} PC7-88.66
**Rule 5.42CB**

*Submissions and Analysis*

8.154. HortNZ\(^{792}\), Balle Bros Group\(^{793}\) and Potatoes NZ\(^{794}\) seek that the activity status of Rule 5.42CB is amended from restricted discretionary to controlled. HortNZ states that a controlled activity provides more certainty to the industry and will be most efficient and effective for existing growing operations.

8.155. Potatoes NZ also seeks amendments to conditions (2) and (3) of Rule 5.42CB as follows:

2. *The aggregated area of land used for the commercial vegetable growing operation is no greater than the baseline commercial vegetable growing area within the Nutrient Allocation Zone; and*

3. *All land that forms part of the commercial vegetable growing operation is located within the same sub-region and Nutrient Allocation Zone.*

8.156. I do not consider that a controlled activity status is appropriate as this would restrict the ability for Environment Canterbury to decline a consent, noting that commercial vegetable growing is a complex activity due to the changing land areas and crops being grown and could result in unacceptable adverse effects.

8.157. In response to Potatoes NZ’s requested changes, I consider the proposed amendments do not align with the purpose of the two conditions. The baseline commercial vegetable growing area is maximum growing area during the baseline period therefore condition (2) is intended to control the overall area. Condition (3) is intended to manage potential effects of growing areas being concentrated in particular locations that would negatively affect water quality outcomes. As described above, this is directly related to how water quality outcomes and targets have been set and is specific to sub-region sections of the CLWRP. Potatoes NZ’s request would not take this into account and could worsen water quality in some areas.

8.158. Ravensdown seeks an amendment to matter of discretion (6) of Rule 5.42CB to refer to any ‘relevant nutrient limits’ rather than ‘nutrient loads’. Ravensdown states that not all relevant limits contained in Sections 6 to 15 are nutrient load limits.

8.159. I agree with Ravensdown as Sections 6 to 15 refer to nutrient loads, limits, targets and reductions. Matter of discretion (6) is intended to ensure that where there are limits or loads in place, the consent application and consent conditions address how those limits or loads will be met. I recommend that the matter of discretion is amended to include reference to nutrient limits.

*Recommendation*

8.160. That Rule 5.42CB is amended as per Appendix E.
Rule 5.42CC

Submissions and analysis

8.161. Potatoes NZ\textsuperscript{795} seeks that Rule 5.42CC is amended to a restricted discretionary rule that applies to commercial vegetable growing operations that form a farming enterprise.

8.162. Balle Bros Group also seeks that the status of Rule 5.42CC is amended to restricted discretionary and propose the following matters of discretion:

1. The timing of any actions or good management practices proposed to achieve the objectives and targets described in Schedule 7; and
2. Methods to avoid or mitigate adverse effects of the activity on surface and groundwater quality and sources of drinking water; and
3. The commencement date for the first audit of the Farm Environment Plan and methods to address any non-compliance identified as a result of a Farm Environment Plan audit, including the timing of any subsequent audits; and
4. Modelled nutrient losses (using a model deemed suitable specifically for CVP) that demonstrates that the Nitrogen Loss rate for new or expanded area of operation will not exceed the lawful nitrogen loss rate applicable to the proposed location. Where no suitable model is available nutrient losses are to be mitigated specifically within the FEP through good to best management practices.
5. Methods that demonstrate how any nutrient loss reductions required by Sections 6 to 15 of the Plan will be achieved; and
6. Reporting of progress made towards any nutrient loss reductions required by Sections 6 to 15 of the Plan, and any actions implemented to remedy issues identified in any audit of the Farm Environment Plan; and
7. Methods to prevent an exceedance of any relevant nutrient load limit set out in Sections 6 to 15 of the Plan if the region-wide rules continue to apply in the sub-region.

8.163. Rule 5.42CC provides a consent pathway for commercial vegetable growing operations that either exceed the baseline commercial vegetable growing area or are split across sub-regions or nutrient allocation zones. It is likely that for these operations there are different water quality outcomes, limits and targets set and therefore obtaining resource consent is likely to be more complex. Additionally, where operations span these geographic areas, there are likely to more location specific matters to address, for example cultural sites applying to some of the growing area and not others. It is this complexity that make it difficult to form matters of discretion that ensure all actual and potential effects that should be addressed are listed. I therefore do not recommend amending the activity status as sought by these submitters.

Recommendation

8.164. That Rule 5.42CC is retained as notified.

\textsuperscript{795} PC7-404.13
Rule 5.42CD

Submissions and analysis

8.165. Eight submitters\(^{796}\) seek that Rule 5.42CD is deleted in its entirety while three submitters seek it is retained as proposed.

8.166. Balle Bros Group\(^{797}\) and Potatoes NZ\(^{798}\) seek that the activity status of Rule 5.42CD is amended to discretionary. Balle Bros Group states that in the absence of a suitable and accurate modelling tool for commercial vegetable production there may be instances where nutrient losses cannot be accurately be defined. Potatoes NZ does not provide any clear reasons for the change in activity status.

8.167. Forest & Bird\(^{799}\) seeks that Rule 5.42CD is retained as notified subject to requested relief to Schedule 7.

8.168. Rule 5.42CD provides the consent pathway for Rules 5.42CD and 5.42CC where a FEP has not been prepared in accordance with Part A of Schedule 7 and submitted with the resource consent application. FEPs are a fundamental component of the framework set by the CLWRP to ensure farming activities operate in accordance with GMP and non-complying activity status is consistent with the region-wide and sub-region farming rules where a FEP has not been prepared. The submitters do not provide any compelling reasons to depart from the current rule framework.

Recommendation

8.169. That Rule 5.42CD is retained as notified.

Rule 5.42CE

Submissions and analysis

8.170. Four submitters\(^{800}\) seek that Rule 5.42CE is retained as notified and six submitters\(^{801}\) seek it is deleted.

8.171. HortNZ\(^{802}\) opposes Rule 5.42CE and seek it is deleted and that consequential amendments are made to Rule 5.42CD to provide a drop out rule for non-compliances with Rule 5.42CC. HortNZ states that this rule will have a direct impact on the food security of Canterbury and New Zealand and this rule does not give consideration to the need to expand growing to meet the demands of population growth.

\(^{796}\) For example; BCIL (PC7-153.19), S Kikstra (PC7-4.4), Rhys Farm Ltd (PC-297.4), Acton Farmers Irrigation Cooperative (PC7-154.15), Greenstreet Irrigation Society (PC7-312.30), Rhodes Hill Ltd and Belmont Farm Ltd (PC7-332.11), Rangitata South Irrigation (PC7-235.19), Ashburton River Irrigators (PC7-343.26)

\(^{797}\) PC7-185.8

\(^{798}\) PC7-404.14

\(^{799}\) PC7-472.26

\(^{800}\) For example; Ravensdown (PC7-114.15), Timaru DC (PC7-292.14), H Iles (PC7-310.16), McFarlane Agriculture Ltd & McFlynn Potatoes Ltd (PC7-278.34)

\(^{801}\) For example; Balle Bros Group (PC7-185.9), S Kikstra (PC7-4.5), Beef + Lamb (PC7-214.44), Rhys Farm Ltd (PC7-297.5), Greenstreet Irrigation Society (PC7-312.31), HortNZ (PC7-356.39)

\(^{802}\) PC7-356.39
8.172. Forest & Bird\textsuperscript{803} seeks Rule 5.42CE is retained subject to requested relief to Schedule 7.

8.173. Potatoes NZ\textsuperscript{804} seeks that the activity status is changed to non-complying. Potatoes NZ has also then proposed a new Rule 5.42CF that provides a prohibited activity rule for discharges of nutrients that do not comply with Rule 5.42CC or Rule 5.42CD.

8.174. Federated Farmers\textsuperscript{805} seeks that the activity status is non-complying and state that there needs to be provisions in PC7 for increased production even if this does lead to some increase in nitrogen loss.

8.175. Pye Group\textsuperscript{806} opposes Rule 5.42CE and seek to clarity on how the nitrogen losses from new or expanded commercial vegetable growing operations will be monitored or assessed. Specifically, Pye Group queries when a nutrient budget would be required, before or after vegetables have been sown or harvested.

8.176. Rule 5.42CE sets the prohibited activity status where the nitrogen losses from a new or expanded operation exceeds the nitrogen loss rate for the proposed new area. This rule is crucial to ensuring that any expansion to the growing area in vegetable production does not inhibit the improvements in water quality the CLWRP has been developed to achieve. Without a prohibited activity rule, vegetable production could expand unfettered and result in increasing nitrogen concentration trends in water, or diminish the gains achieved by other farming activities.

\textit{Recommendation}

8.177. That Rule 5.42CE is retained as notified.

\textbf{Miscellaneous}

8.178. This section of the report summarises and analyses all remaining submission points received on commercial vegetable growing provisions.

\textit{Submissions and Analysis}

8.179. HortNZ\textsuperscript{807} seeks all references to ‘Commercial Vegetable Growing’ are amended ‘Commercial Vegetable Production’ rather than ‘Commercial Vegetable Growing’. This is to ensure consistency in terminology nationally.

8.180. Other regional plans including Waikato Regional Plan Change 1 and the proposed National Environment Standards for Freshwater\textsuperscript{808} refer to commercial vegetable production. Due to the recommended changes to the definition of ‘commercial vegetable growing operation’ to refer to the activity of vegetable growing rather than the entity, I do not recommend amending the terminology in the CLWRP.

\textsuperscript{803} PC7-472.50  
\textsuperscript{804} PC7-404.15  
\textsuperscript{805} PC7-430.27  
\textsuperscript{806} PC7-352.24  
\textsuperscript{807} PC7-356.67  
\textsuperscript{808} We acknowledge that the proposed National Environment Standards for Freshwater are potential regulations that hold no legal weight at this stage.
8.181. Ngā Rūnanga\textsuperscript{809} seeks to add new conditions to Rule 5.42CA and Rule 5.42CB. They seek a condition is included that requires adherence to particular overlays or requirements established in Sections 6 to 15, for example the Cultural Landscapes Management Area in Section 11.

8.182. I do not consider that the amendments as requested by Ngā Rūnanga are necessary. The management of farming activities in particular overlays is addressed through the policies of Sections 6 to 15 and Schedule 7. For example, Policy 11.4.4 and Section 7 of Schedule 7 guide activities in the Cultural Landscape/Values Management Area. The proposed new requirements in the Waimakariri and Orari-Temuka-Opihi-Pareora Zones are also addressed in this manner.

8.183. Pye Group\textsuperscript{810} opposes Rule 5.42CA and seek that all small-scale farming operations are required to obtain consent or have a management plan requiring ongoing monitoring of farming practices. Pye Group seeks:

- that a different framework is in place for larger scale vegetable production which are part of a mixed farm system as each operation varies in land use intensity and nutrient inputs.
- The framework considers areas that are more sensitive to nutrient losses.

8.184. Rule 5.42CA is assessed above where minor changes to the wording are suggested but a permitted activity rule is recommended to be retained. With regards to Pye Group’s request that the regulatory framework considers areas that are more sensitive to nutrient losses, this would require identifying sensitive areas. It is not entirely clear what the submitter means by sensitive, but this overall approach differs from the framework already set by the CLWRP where farming can occur in any location subject to nutrient loss rates. I consider it is unnecessary to deviate from the proposed provisions.

8.185. Several submitters\textsuperscript{811} seek amendments to PC7 to:

- Recognise the value of growing food for future domestic food supply and security.
- Provide a tailored approach for commercial vegetable production if land for high value is to be used for food production whilst achieving water quality and environmental benefits.
- Recognise the effects of climate change in maintaining the status quo of land use activity mix.
- Avoid effects limiting the ability for growers to undertake new leases in order to meet future food demand.
- Provide the ability for a group of growers to manage environmental issues collectively to improve the effectiveness of the response to water quality issues. Seek PC7 to enable collaborative or collective approaches as demonstrated by the irrigation schemes.

8.186. The provisions are intended to provide a simpler pathway for commercial vegetable growers to obtain resource consent to continue their operations. For some growers, nutrient losses are managed through the area cap without the specific requirement for ongoing nutrient budgeting. These benefits are in recognition of the value of vegetable growing to the region.

\textsuperscript{809} PC7-423.33, PC7-423.34

\textsuperscript{810} PC7-352.18

\textsuperscript{811} For example; Aberdeen Farm Ltd (PC7-434.5, PC7-434.6), Alex McDonald Ltd (PC7-6.1, PC7-6.2, PC7-6.6), Alps Seeds Ltd (PC7-327.1, PC7-327.2, PC7-327.6), Barnes Family Farms Ltd (PC7-94.4, PC7-94.7)
With regards to recognising the effects of climate change, it is not clear entirely what submitters seek, or how these effects should be considered.

8.187. In response to the request for the ability to manage environmental issues collectively, while PC7 does not specifically provide guidance on this, I consider there is no restriction in being able to apply under the proposed provisions to do so. At this stage I am not aware of how a collective approach would work or if there is an organisation or body willing to manage nutrient losses for a number of growers. Further policy guidance could be beneficial if collective management is a tangible possibility.

8.188. Arowhenua and Te Rūnanga seeks new matters of discretion are included in Rule 5.42CB that provide for the consideration of adverse effects on rock art sites and mātaitai reserves.

8.189. The proposed matters of discretion only relate to Section 14 of the CLWRP and have been assessed in Part B of this report.

8.190. Ashburton Lyndhurst Irrigation supports the advice note under the Irrigation Scheme rule as seek it is retained as notified.

If a commercial vegetable growing operation is irrigated with water from an irrigation scheme or principal water supplier that does not hold a discharge permit under Rule 5.62 or is not a permitted activity under Rule 5.41, then it is assessed under Rules 5.42CA to 5.42CE.

8.191. No changes are suggested to this advice note and it is recommended it is retained as notified.

8.192. WWHT seeks a number of amendments to PC7 that require commercial vegetable growers to:

- Have detailed land drainage plans capable of mapping overland flow paths and implementing flow barriers to avoid untreated contaminated stormwater from entering waterways.
- Set FEP audit achievement targets, such as a minimum B rating within three years and all FEPs at A rating within five years.
- Protect and restore recognised(mapped wetlands and establish a minimum 5 m riparian reserve along all waterways on a property.

8.193. In addition, WWHT seeks many other amendments to Schedule 7 more generally that collectively specify management methods for sediment, wetlands and biodiversity. I consider that some of the suggestions from WWHT relate to the implementation of the existing provisions rather than necessitating amendments to Schedule 7. In relation to drainage, sediment control, wetlands and biodiversity, I consider that the existing Schedule 7 requirements already cover these topics through the various Management Areas, particularly Nutrients and Waterbodies. I consider that the existing mapping requirements within Schedule 7, particularly around mapping critical source areas, will ensure overland flow paths are identified, with the Management Areas again looking at how associated losses are minimised. I consider the setting of specific requirements around audit grades and riparian planting goes beyond the scope of the general guidance provided in Schedule 7. FEPs are such that the management of aspects such as riparian margins can be tailored to each property, with an incentive to achieve good audit grades, as they require less frequent auditing.

---

812 PC7-424.70, PC7-424.143
813 PC7-390.3
814 PC7-88.65, PC7-88.67, PC7-88.68, PC7-88.70, PC7-88.71, PC7-88.73, PC7-88.33, PC7-88.47, PC7-88.55, PC7-88.72, PC7-88.75, PC7-88.76, PC7-88.78, PC7-88.79
8.194. Ellesmere Sustainable Agriculture Incorporated seeks that either Rules 5.42CB to 5.42CE are deleted or allow growers to choose which definition of farm type (farm, farm enterprise or commercial vegetable growing operation) applies to their farm and that flexible nutrient limits are equitable across all farm types.

8.195. The intention of the rules is to provide a clear pathway for commercial vegetable growing operations to authorise their operations. The recommendations on the definition of ‘commercial vegetable growing operation’ provide greater clarity on the type of operation the rules apply to. It is not clear what Ellesmere Sustainable Agriculture Incorporated mean by flexible nutrient limits, however the changes to the provisions as recommended ensures that for those mixed farming systems captured by the rules are managed cohesively.

8.196. A Lim states that a possible solution to maintain or improve water quality could be to distinguish between local supply and export supply. Local supply is relatively static and to avoid growers moving into one zone, “local supply” may be defined as within the South Island.

8.197. I do not consider that it is necessary to restrict the applicability of the PC7 provisions to the local market. I consider that this will not provide any greater benefit to achieve water quality outcomes as it would be very difficult to implement, and it is unlikely the majority of growers only supply produce to the South Island market. This is also a fundamentally different approach to the CLWRP which is an effects-based framework managing the outputs of activities. Dictating where produce can be sold via the provisions is opposite to this approach.

Recommendation

8.198. That the provisions are retained as notified.

---

815 PC7-207.19, PC7-207.13
816 PC7-478.3
9. **Schedule 6 (Bathing Sites)**

**Introduction and Provisions**

9.1. This section of the report addresses submissions relating to the freshwater bathing areas identified in Schedule 6 of the CLWRP.

9.2. Schedule 6 of the CLWRP currently identifies 28 areas on rivers and lakes commonly used for freshwater bathing, described narratively and by (point) map references. The purpose of Schedule 6 is to reduce the risk of poor water quality at commonly used bathing sites by way of restrictions on fine sediment removal from rivers, and the exclusion of farmed cattle, deer and pigs from waterbodies.

9.3. Several amendments to Schedule 6 are proposed including: the addition of 64 new sites; updates to the map references of all existing sites into map coordinate system NZTM2000; and minor amendments to the site descriptions for some existing sites. Amendments to Schedule 6 and Rule 5.71 are also proposed to clarify the area of lake bed where stock shall be excluded. The objective of the amendments is to better protect these areas from activities that contaminate and degrade water quality.

9.4. The Section 32 Report supporting technical memorandum ‘Recommendation of update of CLWRP Schedule 6: Areas on rivers or lakes commonly used for freshwater bathing’ describes that the new freshwater bathing sites are based on Environment Canterbury’s recreational water quality monitoring programme, the River Values Assessment System report and Zone Committee feedback.

9.5. Due to the limited number of submissions seeking amendments to PC7 Schedule 6, the following section of this report combines the summary of submissions with an analysis of these submissions.

**Submissions and Analysis**

9.6. Several submissions on Schedule 6 seek that it be retained as notified.

9.7. Timaru DC states that it neither supports nor opposes the amendments to Schedule 6 as the sites are currently all outside of its community water supply surface take areas and will not impact on its continued ability to take the water for community water supplies. However, the submitter indicates that it would oppose any site amendments to the PC7 version of Schedule 6 should they be located upstream of any of its community water supply take locations.

**Request for site additions**

9.8. Ngā Rūnanga seeks the addition of Waiwera (Lake Forsyth) and Te Waihora to Schedule 6, as they state that these are sites where mahinga kai practices and recreational activities have occurred and, with appropriate management, could occur again.

---

817 The author of this section is Andrea Richardson.
818 For example; Delvin, R (PC7-56.3), CDHB (PC7-347.21), Styx Living Laboratory Trust (PC7-205.9)
819 PC7-292.126
820 PC7-423.74, PC7-423.84
9.9. I acknowledge that the outstanding cultural significance of Te Roto ō Wairewa/Lake Forsyth, and Te Waihora/Lake Ellesmere is recognised in the Ngāi Tahu Claims Settlement Act 1998, including by a Statutory Acknowledgement for Wairewa. Given that PC7 introduces a new site ‘Lake Ellesmere/Te Waihora at Lakeside’ into Schedule 6, I am uncertain if Ngā Rūnanga still seek amendments to Schedule 6 with respect to this waterbody.

9.10. Regarding the submission from Ngā Rūnanga regarding Te Roto ō Wairewa (Lake Forsyth), we note that the lake is not suitable for primary contact recreation activities as prolonged and very concentrated blooms of planktonic cyanobacteria occur each summer. This poses a potentially severe human health risk. While it is recognised that recreational activities once occurred in Te Roto ō Wairewa (Lake Forsyth), I consider it should not be promoted in any way as a primary contact recreation site in its current state. 821

9.11. I note that Te Roto ō Wairewa (Lake Forsyth) is already subject to strict stock exclusion provisions 822 in Section 10 of the CLWRP, which will deliver an equivalent or greater level of protection for water quality than would the inclusion of the lake in Schedule 6. Given this, and the technical advice, I do not recommend the inclusion of Te Roto ō Wairewa/Lake Forsyth into Schedule 6.

9.12. Te Ngāi Tūāhuriri Runanga 823 requests that Schedule 6 is amended to add the following sites citing their significance to the Ngāi Tūāhuriri hapū and continued extensive use by whānau:
   a. “Three Streams” confluence of Cust Main Drain, Kaiapoi-Silverstream and Mill Creek;
   b. Kaiapoi/Silverstream River just above Butchers Road Foot Bridge;
   c. Cust Main Drain at Threlkelds Road; and
   d. Cust Main Drain at Plaskett Road.

9.13. In response to the submission from Te Ngāi Tūāhuriri Runanga, I note that no formal information is available on the use of these four sites for primary contact recreation. The sites were not considered for (nor excluded from) the Waimakariri ZIPA. No ongoing water quality monitoring is undertaken at any of the sites.

9.14. The four sites are all within the PC7 Ashley-Waimakariri Plains Area which is subject to PC7 Policy 8.4.31 that proposes to exclude all farmed cattle, deer and pigs. This means that the addition of these sites into Schedule 6 may duplicate the PC7 stock exclusion restrictions. However, as Policy 8.4.31 is not an operative policy (meaning the stock exclusion restrictions for these sites could potentially be deleted through the PC7 planning process) and in recognition of the sites’ importance and use by Te Ngāi Tūāhuriri Rūnanga, I recommend that all four sites be included in PC7 Schedule 6.

9.15. Orari River Protection Group 824 seeks the exclusion of stock from swimming areas in the Orari Gorge and other rivers in Canterbury to protect water quality for swimming and recreation. They oppose the amendments to the existing Schedule 6 site “Orari Gorge”, and describes a number of swimming sites in the Orari River that they seek to be included in Schedule 6. In particular the submitter seeks to include a swimming site at the St Andrews Stream confluence, “one on the north bank of the river gorge accessed from North Boundary Road”, and “several further sites accessed from Tripp Settlement Road through the Orari Gorge Station”.

821 This paragraph was prepared by Jarred Arthur
822 Policies 10.4.1; 10.4.2; 10.4.5
823 PC7-399.2; PC7-399.90--92
824 PC7-551.10
9.16.  In response to the Orari River Protection Group, the OTOP ZIPA (Recommendation 4.8.5) recommends the inclusion of ‘Orari River at Orari Gorge’ swimming site into Schedule 6 of the CLWRP.  PC7 does not propose to delete the existing Orari River Gorge bathing site from Schedule 6.  Rather, the current Orari Gorge site is proposed to be renamed with an updated coordinate format (NZTM2000) for improved clarity on its location.  This clarification should resolve the submitter’s concerns.

9.17.  It would provide water quality benefits to introduce the Orari River site at St Andrews Stream confluence into PC7 Schedule 6 on the assumption that it is a commonly used freshwater bathing area.  Based on an assessment of the GIS database, I recommend it is recorded as “Orari River at St Andrews Stream confluence (1454016 mE, 5135121 mN)”.  The submitter does not provide enough information on the precise locations of the other Orari River sites sought in their submission to assess if these should be recommended for inclusion in PC7 Schedule 6.

Request for site deletions

9.18.  McIntyre Williamson Partnership825 seeks the deletion of two new Schedule 6 sites in the Waitaki catchment: Wairepo Arm and Kellands Pond.  It reasons that the sites are not commonly used for bathing and stock exclusion is already achieved by existing permanent fencing.  Benmore Irrigation Company826 also considers that the Wairepo Arm site should be deleted, citing low swimming numbers and poor water quality.

9.19.  I note that the inclusion of both the ‘Wairepo Arm’ and ‘Kellands Pond’ bathing sites in PC7 Schedule 6 is based on recommendations from the Upper Waitaki Zone Committee in 2017.  ZC feedback is one of three key information sources used to determine the PC7 Schedule 6 sites.  Public access to the sites is readily available given their proximity to State Highway 8 and the presence of gravel laybys and tracks.  However, they are not seasonally monitored by Environment Canterbury for recreational water quality, and they were not identified as swimming sites in the River Values Assessment System report827.  Their proximity to other high value bathing locations such as ‘Lake Ruataniwha at camping ground’ may mean that they are comparatively less favourable for swimming.  This may particularly be the case if there is validity in Benmore Irrigation Company’s claim regarding the presence of water fowl and duck itch in the Wairepo Arm.828

9.20.  I note that the inclusion of both sites would be more protective of water quality at these sites associated with CLWRP provisions for stock exclusion and fine sediment removal, although will have no influence on the presence of water fowl.  Even if the sites are already fenced off from stock, their inclusion in Schedule 6 will provide long-term certainty of this requirement.  Although recognising the limited information on water quality and swimming numbers, I recommend retaining these new sites in Schedule 6.

9.21.  Meridian requests that two new Schedule 6 sites, ‘Loch Cameron’ and ‘Pond at Old Iron Bridge Road’, are deleted as the areas are located on what they refer to as ‘core land’ owned by

---

825 PC7-288.1
826 PC7-552.1
828 This paragraph was prepared by Jarred Arthur
Meridian. The submitter explains that the purpose of ‘core land’ is for their continued maintenance and operation of the Waitaki Power Scheme.

9.22. As background to the Meridian submission, both ‘Loch Cameron’ and ‘Pond at Old Iron Bridge Road’ were included in Schedule 6 on the basis of informal recommendations made by the Upper Waitaki Zone Committee. ‘Loch Cameron’ was also documented in the River Values Assessment System report as having a ‘moderate level of use’ (10-20 swimmers) on a peak day. I am not aware of any records regarding formal information on how frequently the site ‘Pond at Old Iron Bridge Road’ is used for bathing but understand that at least occasional swimming occurs here. Public access to both sites is good, and a picnic area is present (and signposted) at ‘Loch Cameron’. Neither site is monitored as part of Environment Canterbury’s recreational water quality monitoring programme.

9.23. In response to Meridian’s requests for site deletions, the provisions that refer to Schedule 6 - stock exclusion and fine sediment removal for habitat restoration, are unlikely to be ‘renewable electricity generation activities’ as defined in the National Policy Statement for Renewable Electricity Generation 2011 (NPSREG). Rule 5.125A of the CLWRP provides for existing discharges associated with the Waitaki Power Scheme as a controlled activity and does not refer to Schedule 6. On this basis, I recommend that the Schedule 6 sites are retained as notified.

9.24. Genesis requests that PC7 does not constrain the operations of the Tekapo Power Scheme or enable activities that could have actual or potential adverse effects on its operation. I have reviewed the GIS database and do not believe there are any Schedule 6 sites within the waterbodies of the Tekapo Power Scheme.

9.25. Todd Property Pegasus Town requests that the Lake Pegasus site is deleted from Schedule 6, stating that the lake is not designed as a freshwater bathing site and the resource consent for the lake specifies it is suitable for secondary contact recreation.

9.26. In response to the submission from Todd Property Pegasus Town, I note that despite being consented as use for secondary contact recreation, Lake Pegasus is known to be used for primary contact recreation activities including organised sports events. It is monitored seasonally for recreational water quality for this reason. Microbial water quality at the site is good with a suitability for recreation grade of ‘very good’, however the lake experiences seasonal blooms of planktonic cyanobacteria.

9.27. I note that the water quality benefits of retaining Lake Pegasus in Schedule 6 will likely only be restricted to fine sediment removal activities given that the lake is in an urban setting.

---

829 This paragraph was prepared by Jarred Arthur
830 Rule 5.71
831 Rule 5.146A is the region-wide rule for fine sediment removal for the sole purpose of habitat restoration.
832 NPSREG defines renewable electricity generation activities as “means the construction, operation and maintenance of structures associated with renewable electricity generation. This includes small and community-scale distributed renewable generation activities and the system of electricity conveyance required to convey electricity to the distribution network and/or the national grid and electricity storage technologies associated with renewable electricity.”
833 PC7-422.2, PC7-422.3
834 This paragraph was prepared by Jarred Arthur
835 PC7-427.1
836 This paragraph was prepared by Jarred Arthur
837 Rule 5.146A is the region-wide rule for fine sediment removal for the sole purpose of habitat restoration.
(i.e. stock access is not relevant). It is also recognised that the public may confuse ‘Schedule 6 freshwater bathing areas’ with NPSFM primary contact recreation sites. However, based on the preceding discussion, I recommend retaining Lake Pegasus in Schedule 6 as notified.

Recommendation

9.28. Add the following sites into PC7 Schedule 6, and otherwise retain as notified:

a. “Three Streams” confluence of Cust Main Drain, Kaiapoi River/Silverstream and Mill Creek (1570391 mE, 5197602 mN)

b. Kaiapoi River/Silverstream at Butchers Road Foot Bridge (1570116 mE, 5196664 mN)

c. Cust Main Drain at Plaskett Road (1564583 mE, 5200617 mN)

d. Cust Main Drain at Threlkelds Road (1568191 mE, 5198987 mN)

e. Orari River at St Andrews Stream confluence (1454016 mE, 5135121 mN)
10. **Schedule 17 (Salmon Spawning Sites)**

### Introduction and Provisions

10.1. This section of the report addresses submissions on the salmon spawning sites identified in Schedule 17 of the CLWRP and in the Planning Maps.

10.2. The Section 32 Report supporting technical memorandum ‘Proposed amendments to CLWRP Schedule 17: Salmon Spawning Sites’ describes the habitats where salmon spawn as follows:

> While New Zealand’s Chinook salmon are migratory and spend much of their adult life at sea, sockeye salmon are landlocked and occur only as freshwater residents. Both species lay their eggs in redds excavated by spawning fish in the clean, loose gravels of streams, rivers and occasionally lake margins. Many salmon spawning sites are situated in smaller high-country spring-fed waterways, but spawning activity also occurs in the mainstems of larger rivers and in high quality lowland freshwater habitats. The protection of habitats where salmon spawn is critical to ensuring the maintenance of healthy, productive salmon populations and the sports fisheries they support.

10.3. Schedule 17 currently identifies 32 salmon spawning sites in rivers and streams that are deemed to be significant to Canterbury’s salmon fishery, described narratively and by map references for the upstream and downstream extents of these sites. The sites are also shown in the CLWRP Planning Maps.

10.4. PC7 proposes several amendments to Schedule 17 including the addition of 31 new sites, updates to the map references of all existing sites into map coordinate system NZTM2000, and amendments to the site descriptions for existing sites. PC7 also revises the CLWRP Planning Map layer of Schedule 17 sites to show the proposed amendments. The new salmon spawning sites introduced by PC7 were identified using a criteria-based ‘significance’ assessment developed by Unwin (2006). The Unwin (2006) criteria was also used to identify the existing Schedule 17 sites, and is summarised in the technical memorandum ‘Proposed amendments to CLWRP Schedule 17: Salmon Spawning Sites’.

10.5. Protection of the salmon spawning sites listed in Schedule 17 is implemented through a range of provisions in the CLWRP, including specific policy direction (Policy 4.31) that seeks to exclude stock from these areas, and a number of rules with conditions that either prohibit or require resource consent for various activities if they occur in or adjacent to these sites.

10.6. Eleven of the 31 new Schedule 17 sites are within the Waimakariri River catchment; remain subject to the provisions of the WRRP for the management of activities with the potential to affect these sites. These sites have been added into Schedule 17 of the CLWRP in anticipation of a future plan change to revoke the WRRP in its entirety, which would require the introduction of freshwater outcomes, limits and targets (for both water quality and quantity) into the CLWRP for the entire Waimakariri River catchment.

---

838 The planning author for this section is Andrea Richardson and the technical author is Jarred Arthur

839 Rules include stock exclusion (Rule 5.71), works related to structures and gravel extractions (Rules 5.136 – 5.141, 5.148, 5.151 and 5.152), and vegetation planting and clearance (Rules 5.163 and 5.167).

840 Winding Creek; Poulter River; Poulter Spring Creek 1; Poulter Spring Creek 2 and 3; Thompson Stream; Cass Hill Stream (Bullock Creek); One Tree Swamp; Cora-Lynn Stream; Pūkio Stream; Cox River/Poulter River East Branch; Otukaikino Creek and tributaries.

841 The Waimakariri River Catchment boundary is defined in Map 2 of PC2 to the WRRP.
Submissions

10.7. All but three of the submissions on Schedule 17 seek that it be retained as notified (or are neutral as discussed below). North Canterbury Fish & Game and Central South Island Fish & Game support the PC7 amendments to Schedule 17. They comment that the proposed site additions fill in several gaps that existed in the schedule and will provide important protection for the salmon sports fishery which is currently under significant environmental pressure.

10.8. Timaru DC state that they neither support nor oppose to Schedule 17 as the sites are currently all outside of their community water supply surface take areas and will not impact on their continued ability to take the water for community water supplies. However, they indicate that they would oppose any amendments to the PC7 version of Schedule 17 sites should they fall within any of their community water supply take locations.

10.9. Ngā Rūnanga is also neutral on the amendments to Schedule 17. The submitter comments that some Rūnanga are strongly opposed to the protection of a species they see as a pest but acknowledge that protecting salmon spawning habitat may have benefits to native species that share this habitat, for example tuna, kōaro, inaka and smelt. Ngā Rūnanga does however seek assurances that any changes to Schedule 17 will not increase the impacts of salmonids on native fish.

10.10. M Hall seeks that the provisions recognise that salmon may spawn at different locations to those listed in Schedule 17 depending on stream conditions and other factors. The submitter considers that trout spawn in a wider range of waters and this habitat should also be protected as required by the RMA.

10.11. Central South Island Fish & Game requests that plantation forestry activities managed under Rule 5.189 require consent if undertaken in a salmon spawning site listed in Schedule 17.

10.12. Genesis Energy and Meridian seek amendments to PC7 to ensure the provisions to not constrain the activities required to maintain and operate the Waitaki Power Scheme (which includes the Tekapo Power Scheme). Genesis Energy has not submitted on Schedule 17 or the Planning Maps of these sites, but more broadly on the whole plan change, seeking amendments to ensure it does not constrain the operations of the Tekapo Power Scheme, or enable activities that could have actual or potential adverse effects on its operation. It explains that the Tekapo Power Scheme sits at the head of the Waitaki Valley and comprises the Tekapo A and Tekapo B power stations, Lake Tekapo and its associated inflows, and the Tekapo Canal.

10.13. Meridian requests two new Schedule 17 sites, Lower Ohau River and Upper Ohau River, be amended to remove the areas that extend over what they refer to as ‘core land’ which is

---

842 I note a minor error in the SODR for submitter R McNab (PC7-366.15) – this submitter did not submit on this Schedule 17 topic and this submission point should be deleted.
843 PC7-95.53
844 PC7-351.93
845 PC7-292.128
846 PC7-444.1
847 PC7-351.98
848 PC7-422.2, PC7-422.3
849 PC7-346.23, PC7-346.24, PC7-346.27, PC7-346.28, PC7-346.29
owned by Meridian and required for its continued maintenance and operation of the Waitaki Power Scheme. The submitter seeks the following amendments:

<table>
<thead>
<tr>
<th>River Catchment</th>
<th>River, stream or reach name</th>
<th>Upstream Location Description</th>
<th>Upstream Map Reference (NZTM2000 or Topo50 contour line)</th>
<th>Downstream Location Description</th>
<th>Downstream Map Reference (NZTM2000 or Topo50 contour line)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waitaki</td>
<td>Lower Ohau River</td>
<td>Below Ruataniwha Dam outside Meridian Core Land</td>
<td>Approximately 1368000 1368095 mE, 5092200 5092016 mN</td>
<td>Lake Benmore</td>
<td>1376900 mE, 5086000 mN</td>
</tr>
<tr>
<td></td>
<td>Upper Ohau River</td>
<td>Below the Lake Ohau Weir outside Meridian Core Land</td>
<td>Approximately 1355800 1356198 mE, 5092000 5091984 mN</td>
<td>Lake Ruataniwha Upper Ohau River outside Meridian Core Land</td>
<td>Approximately 1363255 1362678 mE, 5093635 5093654 mN</td>
</tr>
</tbody>
</table>

10.14. Isaac Conservation and Wildlife Trust\textsuperscript{850} requests that the salmon spawning sites within the northern and eastern parts of their property (Lot 2 DP 318667 and Lot 1 DP 83039) be deleted from Map B-C05. It states that the reaches on their land are not conducive to salmon spawning because they are ephemeral and dry for the majority of the year, with permanently grassed beds.

**Analysis**

10.15. In response to Ngā Rūnanga, the supporting technical memorandum for the Section 32 Report\textsuperscript{851} indicates that if indigenous fish share the same habitat as a salmon spawning site, the protection of the Schedule 17 sites by way of a range of provisions within the CLWRP is also likely to indirectly protect the indigenous fish habitat. The more areas of riverbed that are protected from activities that may contaminate or disturb it (such as stock access), the more areas of indigenous fish habitat that will be protected.\textsuperscript{852}

10.16. In response to M Hall, I consider that listing salmon spawning sites in Schedule 17 (and the associated mapping) provides an appropriate level of certainty for plan users to determine whether the activity is permitted or otherwise. PC7 has neither mapped the locations/river reaches of the trout habitat nor assessed the cultural, economic, social and environmental implications of any restrictions on activities in these areas. On this basis, and if indeed this change is within the scope of PC7, I recommend that this submission be rejected.

10.17. The submission Central South Island Fish & Game is addressed in the PC7 Part A topic ‘NESPF’ in the Section 42A Report.

\textsuperscript{850} PC7-371.1
\textsuperscript{851} Proposed amendments to CLWRP Schedule 17: Salmon Spawning Sites, pages 25-26
\textsuperscript{852} For this PC7 Part A topic, technical advice has been provided by Jarred Arthur, Environment Canterbury Scientist
10.18. In response to Genesis, I note that there are no Schedule 17 salmon spawning sites in the waterbodies within the Tekapo Power Scheme, and therefore no amendments to the schedule are considered required to address the submitters’ concerns.

10.19. In response to Meridian, I recommend amending the Lower and Upper Ohau River sites in Schedule 17 and the associated map layer in Planning Maps B-094 and B-095, to recognise and provide for the national significance of renewable electricity generation activities, as required by the NPSREG. In forming this recommendation, I have had particular regard to the protection of the habitat of salmon as required by s 7(h) of RMA, but consider the NPSREG to be more directive. In particular, Policies C1 and C2 requires decision makers to acknowledge the practical constraints associated with the development, operation, maintenance and upgrading of new and existing renewable electricity generation activities. However, I consider that the phrases/terms ‘approximately’ and “Meridian core land” are not necessary to satisfy the submitters concerns, as the map references provided by the submitter exclude this ‘core land’.

10.20. The submission from Isaac Conservation and Wildlife Trust refers to some upper reaches of the ‘Otukaikino River and tributaries’ Schedule 17 spawning site in the PC7 Planning Maps B-058 and B-059. The Otukaikino River is spring-fed, but likely to be heavily influenced by flows in the Waimakariri River. The water table fluctuates with seasonally changing flows in the river and therefore some reaches of the upper Otukaikino catchment may intermittently dry. These reaches were included in PC7 Schedule 17 at the request of North Canterbury Fish and Game who recommended that the majority of the Otukaikino River catchment was a salmon spawning site.

10.21. High-resolution aerial photographs of the PC7 Schedule 17 site ‘Otukaikino River and tributaries’ within the two land parcels specified in the Isaac Conservation Wildlife Trust submission were reviewed by Environment Canterbury scientist Jarred Arthur. This was to assess whether any bed habitat would not be suitable for salmon spawning. As a result of this assessment, it is recommended to delete areas of waterway with visible grassed beds and an absence of exposed gravels for salmon to lay their eggs from the notified PC7 Schedule 17 planning map layer in Map B-059. The total length of waterway recommended for deletion is approximately 4 km. It is not recommended to remove any reaches of the ‘Otukaikino River and tributaries’ site on Isaac Conservation Wildlife Trust land that contain visible surface water or where the bed is not visible due to overhead canopy cover.

10.22. In response to Timaru DC, as there are no submissions seeking additional sites, I consider that its concerns regarding amendments impacting on community water supply takes do not apply.

Recommendation

10.23. Schedule 17 site descriptions of ‘Lower Ohau River; and ‘Upper Ohau River’ is amended, as well as the associated Planning Maps B-094 and B-095.853

10.24. Planning Maps B-059 and B-C05 are amended for the salmon spawning site ‘Otukaikino River and tributaries’.854

---
853 Meridian (PC7-346.23, PC7-346.24, PC7-346.27, PC7-346.28, PC7-346.29)
854 Isaac Conservation Wildlife Trust (PC7-371.1)
11. **Minor Changes**

**Introduction**

11.1. This part of the Section 42A Report discusses the submissions made on Part A of PC7 relating to minor changes to the CLWRP. The minor changes relate to definitions, policies, region-wide rules, schedules and planning maps. The changes are necessary to address plan implementation issues, to ensure that similar activities are treated consistently across the plan, and to align the current CLWRP provisions with recent RMA changes.

11.2. The proposed provisions relate to the following topics:

- CERA and Hurunui Waiau River Regional Plan;
- Deposition of material over aquifers;
- Description of highest groundwater level;
- Water allocation zone boundary;
- Aquifer systems;
- Allocations between surface and groundwater allocation blocks;
- New drop-out rules;
- Changes related to s14(3)(b) of the RMA;
- Irrigation schemes;
- Submission of water quality data;
- Reference to Regional Pest Management Plan; and
- River engineering.

**CERA and Hurunui Waiau River Regional Plan**

**Provisions**

11.3. The relevant provisions are:

- Amendments to Section 1.3.1: Key Partnerships, Canterbury Earthquake Recovery Authority; and
- Amendments to condition (2) of Rule 5.63 to update the reference to the applicable rules in the Hurunui Waiau River Regional Plan. PC7 deletes reference to individual rules and instead references the relevant section of the plan “Section 3.3: Cumulative Effects of Land Use on Water Quality”.

**Submissions and Analysis**

11.4. There are no submissions on Section 1.3.1: Key Partnerships, Canterbury Earthquake Recovery Authority.

11.5. Beef + Lamb states its provisional support of condition (2) of Rule 5.63, noting that Plan Change 1 to the Hurunui Waiau River Regional Plan proposes amendments to Section 3.3 and this plan change process is still underway. There are no other submissions on condition (2) of Rule 5.63.

---

855 The author of this section is Andrea Richardson.

856 PC7-214.45
11.6. I consider that any amendments to Section 3.3 of the Hurunui Waiau River Regional Plan made through Plan Change 1 will not impact on the appropriateness of PC7 condition (2) of Rule 5.63 because the PC7 amendment widens the applicable land use rules to a whole sub-section of that regional plan rather than a list of rules.

**Recommendation**

11.7. Retain the provisions as notified.

**Deposition of material over aquifers**

**Provisions**

11.8. PC7 Part A amends existing CLWRP Rules 5.177 and 5.178 which provide for the deposition of more than 50 m$^3$ of material in any consecutive 12 month period onto land which is excavated to a depth in excess of 5 m below the natural land surface, and is located over an unconfined or semi-confined aquifer where the seasonal high water table is less than 5 m below the deepest point in the excavation. The activity is classified as controlled if all conditions of Rule 5.177 are met, and otherwise as restricted discretionary under Rule 5.178.

11.9. PC7 adds a discharge activity to Rules 5.177 and 5.178 to cover any discharge of contaminants that may arise from the deposition of material as follows: “and the associated discharge of contaminants onto or into land where it may enter water”. At present, a separate discharge consent is required for new deposition activities under general “catch-all” Rule 5.6. The amendment is intended to provide clarity for plan users that the deposition of materials requires both a land use consent and a discharge permit.

11.10. PC7 introduces additional environmental protections for the activities covered under Rules 5.177 and 5.178 by requiring a buffer of at least one metre between any deposited material and the highest groundwater level at the site$^857$ and restricting the deposition of concrete slurry, coal tar or hydro-excavated waste$^858$. In addition, Rule 5.177 now requires a site rehabilitation plan to be submitted with the application for resource consent to address any adverse effects of the deposited material$^859$. PC7 proposes to amend Rule 5.177 as follows:

**Rule 5.177 The use of land for the deposition of more than 50 m$^3$ of material in any consecutive 12 month period onto land which is excavated to a depth in excess of 5 m below the natural land surface and is located over an unconfined or semi-confined aquifer, where the seasonal high water table highest groundwater level is less than 5 m below the deepest point in the excavation, and the associated discharge of contaminants onto or into land where it may enter water, is a controlled activity, provided the following conditions are met:**

1. The material is only cleanfill; and
2. The volume of vegetative matter in any cubic metre of material deposited does not exceed 3%; and
3. The material is not deposited into groundwater placed in the land at least 1 m above the highest groundwater level at the site; and

---

$^857$ PC7 condition (3) of Rule 5.177  
$^858$ PC7 condition (4) of Rule 5.177  
$^859$ PC7 condition (7) of Rule 5.177, matter (3) of Rule 5.177, and matters (4) and (5) of Rule 5.178.
4. Any cured asphalt deposited is placed in the land at least 1 m above the highest groundwater level expected at the site. The material is not concrete slurry, coal tar or hydro-excavated waste; and
5. The material is not deposited onto or into land that is listed as an archaeological site; and
6. A management plan has been prepared in accordance with Section 8.1 and Appendix B of “A Guide to the Management of Cleanfills”, Ministry for the Environment, January 2002; and
7. A site rehabilitation plan has been prepared for the site and is submitted with the application for resource consent.

The CRC reserves control over the following matters:
1. The potential for adverse effects on the quality of water in aquifers, rivers, lakes, wetlands and mitigation measures; and
2. The content and adequacy of the management plan prepared in accordance with Section 8.1 and Appendix B of “A Guide to the Management of Cleanfills”, Ministry for the Environment, January 2002; and
3. The content and adequacy of the site rehabilitation plan to address any adverse effects after the deposition of material is completed.

11.11. PC7 introduces three new matters into restricted discretionary Rule 5.178 as follows:
   - Methods for reinstatement of the site following completion of the activity;
   - The content and adequacy of the site rehabilitation plan if submitted with the application for resource consent; and
   - Any adverse effects on Ngāi Tahu values or on sites of significance to Ngāi Tahu, including wāhi tapu and wāhi taonga.

11.12. The technical memorandum that supports the Section 32 Report for this topic ‘Effects of cleanfill deposition on groundwater quality’ provides the rationale for the PC7 changes to Rules 5.177 and 5.178. As background, one of the existing conditions of Rule 5.177 is that the deposited material is only “cleanfill”. The CLWRP definition of “cleanfill” replicates the definition of “cleanfill material” in the MfE document “A Guide to the Management of Cleanfills”. PC7 does not amend this definition.

11.13. The submissions relating to the addition of restricted discretionary matter (6) in Rule 5.178 is covered in the PC7 Part A section “Ngāi Tahu Values”. The submissions on Rules 5.177 and 5.178 relating to the replacement of the term “seasonal high water table” with “highest groundwater level” are covered in the following Minor Changes sub-section “Description of highest groundwater level”.

Submissions

11.14. Five submissions were received on PC7 Rule 5.177, and six on PC7 Rule 5.178.

11.15. Road Metals Company supports the PC7 inclusion of the associated discharge of contaminants in Rules 5.177 and 5.178, but opposes all other amendments to these rules, stating that they fail to meet Part 2 of the RMA and are not effects based. No further details

---

862 PC7-480.3, PC7-480.4
are provided. The submitter also states that the PC7 requirement for a site rehabilitation plan in Rules 5.177 and 5.178 is not an appropriate requirement of the CLWRP.

11.16. Twelfth Knight Consulting\(^{863}\) considers that the CLWRP definition of “cleanfill” should be amended to specify a list of materials that comprise cleanfill materials to make it easier for the industry to understand and administer rather than a “somewhat woolly” definition. The submitter states that the definition approach often leaves an accept or decline decision on the shoulders of people not technically qualified to do so. With regard to the amount of vegetative matter in the deposited material, Twelfth Knight Consulting considers that existing condition (2) of Rule 5.177 (unchanged by PC7) should be reduced from 3% per cubic metre of deposited material to 2.5% per truck load, stating that this was what was discussed when drafting the Christchurch City Cleanfill Bylaw and is roughly equivalent to one barrow full per truck load.

11.17. Twelfth Knight Consulting\(^ {864}\) appears to support the PC7 deletion of reference to “cured asphalt” from condition (4) of Rule 5.177 and states that the word “cured” in the term “cured asphalt” should be omitted as it is superfluous and leads to confusion. The submitter also supports the introduction of restrictions on concrete slurry and hydro-excavated waste as per condition (4) of Rule 5.177 and also recommends the exclusion of plasterboard, stating their general agreement with the reasoning provided in the Section 32 Report supporting memorandum on this topic. With regard to the introduction of restrictions on coal tar (condition (4) of Rule 5.177), the submitter recommends leaching tests are conducted before a decision is made on the acceptability or otherwise of the deposition of these materials into cleanfill deposition sites.

11.18. With regard to the effects of the deposited material on groundwater quality, Twelfth Knight Consulting agrees with the conclusions regarding exceedances in the technical memorandum ‘Effects of cleanfill deposition on groundwater quality’\(^ {865}\), except for setting the exceedance threshold for aesthetic qualities at the Drinking-water Standards for New Zealand (NZDWS). The submitter states if a consumer has historically accessed soft water and the material deposition results in hard water, the consumer should not be expected to tolerate this just because it still falls within the NZDWS as hard water causes issues in addition to taste, including furring of hot water cylinder elements and marks on glassware.

11.19. Twelfth Knight Consulting\(^ {866}\) agrees with the technical memorandum ‘Effects of cleanfill deposition on groundwater quality’ regarding future land use over cleanfill sites, and states that irrigation of cleanfill sites, other than for the establishment of initial grass cover, should be prohibited.

11.20. Fulton Hogan Ltd\(^ {867}\) opposes the requirement for a site rehabilitation plan in Rules 5.177 and 5.178, stating that they are unclear what effects are being addressed by this requirement, that it introduces extra expense for no obvious environmental benefit, and may conflict with the requirements of District Plan land use rules. Regarding restricted discretionary matter (4) of Rule 5.178 “Methods for reinstatement of the site following completion of the activity”, the submitter states that if there is a clear water quality driver for the requirement for site reinstatement, this is adequately addressed through existing matter (1) of Rule 5.178 “The

\(^{863}\) PC7-507.6, PC7-507.4

\(^{864}\) PC7-507.3, PC7-507.7, PC7-507.9


\(^{866}\) PC7-507.5

\(^{867}\) PC7-428.9, PC7-428.12, PC7-428.10, PC7-428.13
potential for adverse effects on the quality of water in aquifers, rivers, lakes, wetlands and mitigation measures”. Fulton Hogan also considers that site reinstatement may not be necessary or appropriate in order to manage effects, and the introduction of matters of discretion regarding site reinstatement elevates this mitigation measure without strong justification.

Analysis

Effects on groundwater quality

11.21. As background to why deposited cleanfill has the potential to increase the vulnerability of groundwater quality, deposited cleanfill generally replaces the excavated natural materials, such as soil and sediments, which act as natural filtration media to retard and attenuate the breakthrough of bacteria and other contaminants to groundwater. Microbial removal rates are typically inversely correlated with infiltration rates and transport velocity\(^868\), so any increase in infiltration rate or permeability through the deposited material will increase the risk that bacteria from the surface can reach groundwater. Even compacted fill containing clayey material may be susceptible to swelling and cracking which can create preferred pathways for rapid infiltration.\(^869\)

11.22. Another important factor in increased vulnerability is the reduction in depth to the water table, i.e. a reduction in the thickness of the soil and unsaturated zone (vadose zone) which arises because insufficient cleanfill is available to fill the excavation to the original ground surface. Microbial removal through the soil and vadose zone by processes such as filtration, predation, desiccation and die-off, plays a vital role in the protection of groundwater. Any reduction in the thickness of these unsaturated layers can increase the risk that bacteria will not be sufficiently removed before they reach groundwater.\(^870\)

11.23. I consider that it would be helpful if Road Metals Company provided more specific information to explain why they oppose the PC7 amendments to Rules 5.177 and 5.178 (other than the introduction of discharge activities). I note that PC7 provisions give effect to the RMA and are ‘effects based’, in particular they address effects on groundwater quality.

11.24. In response to the submission from Twelfth Knight Consulting on assessing the impacts on water quality using the aesthetic qualities in the NZDWS, I agree that many consumers in Canterbury find these aesthetic effects objectionable, especially when there is a change from soft to hard water. Most of the alluvial aquifers in Canterbury contain minerals with low calcium and magnesium content and groundwaters from these aquifers are naturally soft and can be slightly corrosive. This is the taste and behaviour of water to which most Cantabrians are accustomed.\(^871\)

11.25. I note that the assessment of effects on water quality will be undertaken on a consent by consent basis under matter (1) of Rules 5.177 and 5.178: “The potential for adverse effects on the quality of water in aquifers, rivers, lakes, wetlands and mitigation measures”. Therefore, while the submitter makes a valid point, I do not consider that it requires consideration of amendments to PC7 Rules 5.177 and 5.178.

---

\(^{868}\) Pang, L. 2009: Microbial removal rates in subsurface media estimated from published studies of field experiments and large intact soil cores, Journal of Environmental Quality, 38:1531-1559.

\(^{869}\) This paragraph is written by Lisa Scott, Environment Canterbury Groundwater Scientist.

\(^{870}\) This paragraph is written by Lisa Scott, Environment Canterbury Groundwater Scientist.

\(^{871}\) This paragraph is written by Lisa Scott, Environment Canterbury Groundwater Scientist.
11.26. In response to the request by Twelfth Knight Consulting for a specific list of materials that meet the definition of “cleanfill material”, I note that the CLWRP definition of “cleanfill” replicates the definition of “cleanfill material” in the MfE document “A Guide to the Management of Cleanfills”\(^\text{872}\) and has not been amended by PC7. More specific material exclusions are provided in Rule 5.177 (existing condition (2) and PC7 condition (4)). The CLWRP definition of “cleanfill” does not explicitly exclude concrete slurries, coal tar and hydro-excavated waste, and as described in the supporting technical memorandum ‘Effects of cleanfill deposition on groundwater quality’, these materials can leach and impact groundwater quality. Therefore, I do not consider that a specific list of acceptable cleanfill materials is required in the provisions of the CLWRP. This is not to say that conditions of a resource consent granted under Rules 5.177 or 5.178 should not provide more specificity of acceptable cleanfill materials.

11.27. In response to Twelfth Knight Consulting regarding the measure of vegetative matter in Rule 5.177, the current permitted activity threshold for vegetative material in Rule 5.177 is intended to limit the volume of biodegradable matter that can produce leachate, but still allow for a small amount of plant material that cannot reasonably be removed from soils. There is no data to support whether 2.5% or 3% is acceptable, but the difference is likely to be insignificant in terms of overall effect. Regarding the word ‘cured’ in the term ‘cured asphalt’ in Rule 5.177, I note that where the technical memorandum ‘Effects of cleanfill deposition on groundwater quality’ refers to ‘cured asphalt’, it means material excavated from old roads or other paving that is both hard and weathered. This is to distinguish that material from softer, fresh asphalt from road paving or excess bitumen with volatile components present.\(^\text{873}\)

11.28. Given the above, I am not convinced that there is an issue that needs to be resolved in terms of groundwater quality. The suggested measure per truck load is not appropriate for these rules which manage the deposition of material into the ground. As the submitter supports the deletion condition (4) of Rule 5.177 which references ‘cured asphalt’, no change is required to Rule 5.177 address this submission.

11.29. In response to the submission by Twelfth Knight Consulting on testing of coal tar, coal tar is very toxic to environmental organisms (including humans), whereas aged coal tar bound to other waste (e.g. roading waste) is stable. Field screening methods such as the coffee/tea test have been reliably used to identify coal tar but the best method for evaluating the concentration of chemical constituents in coal tar is through laboratory analytical testing. Leachability tests such as the Leaching Environmental Assessment Framework, Synthetic Precipitation Leaching Procedure and Toxicity Characteristic Leaching Procedure may not accurately indicate the leaching potential of coal tar constituents from coal tar containing waste materials. The current indication is that coal tar leaching potential would be low. However, since coal tar is a hazardous substance, it should not be disposed to a cleanfill.\(^\text{874}\)

11.30. Based on the technical information, no changes are recommended to specify the testing method for coal tar.


\(^{873}\) This paragraph is written by Lisa Scott, Environment Canterbury Groundwater Scientist.

\(^{874}\) This paragraph is written by Rowan Freeman, Senior Environmental Consultant at Golder Associates.
Site rehabilitation plans

11.31. In response to the submission from Fulton Hogan on the requirement for a site rehabilitation plan in PC7 Rules 5.177 and 5.178, I consider that site rehabilitation planning is important to identify and reduce potential long-term risks to groundwater quality in underlying aquifers due to the ongoing use of land after quarrying and filling. As a minimum for the protection of groundwater, it is recommended that a site rehabilitation plan includes:

- The rehabilitation objectives for the site including how protection of groundwater has been taken into account.
- A description of the proposed rehabilitation works including:
  - The proposed final landform;
  - Whether material other than cleanfill will be used in the rehabilitation;
  - The type of land uses that the rehabilitated site could support following rehabilitation;
  - The patterns of surface drainage and subsoil drains;
  - Any landscaping and planting; and
  - A program and reasonable timescales for progressive rehabilitation.

11.32. I note that these rehabilitation plan requirements are consistent with the Christchurch District Plan, with the additional consideration in the rehabilitation objectives of groundwater protection. Most of the quarries in Christchurch would be required to have such a plan for CCC resource consent, but the benefits for managing long term effects on groundwater quality would apply throughout the Canterbury region if all quarries and deposition sites were required to have one. CCC’s Quarry Rehabilitation Plan Guidance provides considerations for the rehabilitation of quarry and cleanfill deposition sites and presents a methodology for preparing a site rehabilitation plan. Planting is relevant to groundwater quality as plant cover affects both recharge (interception/ evapotranspiration) and nutrient uptake. Vegetation is part of the "treatment" that can improve water quality in comparison to untreated discharges directly to gravel.

11.33. Existing Rule 5.177 requires the preparation of a management plan in accordance with the MfE document “A Guide to the Management of Cleanfills”. The difference between a ‘management plan’ and a ‘site rehabilitation plan’ required by Rules 5.177 and 5.178 is that the former is mainly concerned with the operational phase of the deposition of cleanfill, whereas a site rehabilitation plan will provide detail on the proposed actions to reinstate the site for other uses after the deposition is complete and where the deposition material includes but is not limited to cleanfill. Both are important considerations for reducing the long-term risk of groundwater contamination.

11.34. “A Guide to the Management of Cleanfills” provides details on the contents of a management plan including resource consent requirements; site management; cleanfill design; waste acceptance criteria; waste acceptance controls and procedures; daily operating procedures;

---

875 The technical advice on site rehabilitation plans is provided by Lisa Scott, Environment Canterbury Groundwater Scientist
876 Christchurch District Plan Rule 17.8.3.14 Quarry site rehabilitation - Quarrying activity
environmental controls and monitoring; emergency procedures and reporting requirements. However, the MfE document provides only very brief comments on Site Closure and Aftercare\(^{879}\) and no guidance on how to prepare a site rehabilitation plan or the necessity of reinstating protection over groundwater.

11.35. In terms of effects to groundwater quality, site rehabilitation should include the reinstatement of soil and vegetation, or other appropriate cover to ensure that future discharges on the site do not occur untreated directly in to exposed gravels above groundwater and especially not below the groundwater table. When identifying potential future land uses, consideration should be given to how any reduced thickness of the unsaturated zone may have decreased the natural attenuation capacity for contaminants discharged to land above unconfined groundwater. Avoiding the application of additional water (e.g. via irrigation), excess nutrients and faecal pathogens (e.g. from intensive livestock operations or wastewater) or high loading of other contaminants (e.g. pesticides, metals, hydrocarbons in stormwater) directly through the cleanfill would be appropriate to mitigate the risk.

11.36. Because cleanfill generally poses a risk of minor effects on groundwater quality, I do not consider that long-term water quality testing should be universally required. In some circumstances ongoing water quality testing would be appropriate, for example:

- where the site falls within a protection zone e.g. a Community Drinking-water Supply Protection Zone or the Christchurch Groundwater Protection Zone, or
- where sensitive receptors such as existing domestic supply wells, springs or spring-fed waterways are very close to the downgradient site boundary, or
- where uncontrolled fill has historically been deposited at the site before the deposition of cleanfill, or
- where the volume of fill proposed is very large.

11.37. The testing regime for such situations should be developed on a case-by-case basis to reflect the risks posed by a particular site.

11.38. In consideration of the above technical advice, I do not consider that the provisions need to be amended to address the concerns raised by Fulton Hogan.

**Recommendation**


**Description of highest groundwater level**

**Provisions**

11.40. The relevant provisions are a new definition of “Highest groundwater level”, deletion of the existing definition “Seasonal High Water Table”, and amendments to CLWRP rules to substitute the existing term with the PC7 term: Rules 5.8A, 5.12, 5.14, 5.24, 5.27, 5.96, 5.175, 5.177 and 5.178. PC7 defines “Highest groundwater level” as:

\[\textit{means the single highest elevation to which groundwater has historically risen that can be reasonably inferred for the site, based on all available hydrogeological and topographic information.}\]

\(^{879}\) Section 8.8
11.41. As outlined in the supporting technical memorandum ‘Effects of cleanfill deposition on groundwater quality’\textsuperscript{880}, groundwater levels fluctuate over time, responding to inputs (rainfall, river losses, irrigation) and outputs (pumping) from the system. The intention of using a high water level benchmark is to estimate the highest level to which groundwater could rise at a particular site so that activities can be managed to minimise the risk to groundwater.

11.42. The existing definition “Seasonal High Water Table” requires the determination of the highest elevation the water table has reached between the months of June and August, inclusive. However, the highest groundwater level recorded or that could be inferred for a site may not have occurred during these months, therefore the existing provisions of the CLWRP may not provide sufficient protection of groundwater by allowing activities such as discharges to occur where there is no separation to the water table.

Submissions

11.43. Sixteen submissions were received on the new definition “Highest groundwater level” and the amendments to the CLWRP provisions as a consequence of this definition. Of these, nine submissions are in support of the definition as notified, including from BCIL\textsuperscript{881} and Twelfth Knight Consulting\textsuperscript{882}. The reason provided by most submitters in support is that the new definition is appropriate to the outcomes sought by managed aquifer recharge to lift groundwater levels.

11.44. CCC\textsuperscript{883} states that the new definition of “highest groundwater level” is supported by evidence presented to the Christchurch District Plan Review rural hearing which concluded that ‘seasonal high water table level’ was less appropriate, and provides consistency with the term used in the Christchurch District Plan quarrying provisions. The submitter also comments that the definition rightly affords a greater degree of protection to groundwater recognising that maximum groundwater levels have historically occurred outside of the ‘seasonal period’ of July to August.

11.45. Federated Farmers\textsuperscript{884} opposes the PC7 definition (and associated provisions amended as a consequence) and seek that the existing CLWRP definition “Seasonal High Water Table” is retained, citing concerns that there is insufficient explanation about the problem that is being addressed and the justification for the new definition.

11.46. All other submitters seek amendments to the proposed definition of “highest groundwater level”.

11.47. Fulton Hogan\textsuperscript{885}, Road Metals Company\textsuperscript{886} and Aggregate and Quarry Association\textsuperscript{887} consider that in determining the highest groundwater level, consideration should only be given to “all relevant” rather than “all available” hydrogeological and topographic information, and that where the applicant has obtained site specific monitoring data over regular intervals for a period of five years or more, priority should be given to this data to avoid historic


\textsuperscript{881} PC7-153.7

\textsuperscript{882} PC7-507.1

\textsuperscript{883} PC7-337.81, PC7-337.82

\textsuperscript{884} PC7-430.3

\textsuperscript{885} PC7-428.1

\textsuperscript{886} PC7-480.1

\textsuperscript{887} PC7-458.1
abnormalities or spikes in groundwater level that may set an unreasonably high groundwater level. Fulton Hogan states that failure to make these amendments could result in significant economic impacts for operations such as quarries through loss of resource and would not achieve Part 2 of the RMA.

11.48. Beef + Lamb\textsuperscript{888} and Te Moana Dairy\textsuperscript{889} consider that the definition of “highest groundwater level” should be an average of the highest levels over the ten year period preceding the time the activity is established rather than the single highest groundwater level over an undefined time period, as proposed. The submitters raise concerns that the new definition gives Environment Canterbury an unreasonable degree of discretion to set the groundwater level based on the groundwater level at any point in history (which could include European settler recorded history), on a case by case basis. In addition, they consider the new definition does not give effect to the reasoning provided in the Section 32 Report and has the potential to give rise to absurd and perverse outcomes through implementation of rules that reference this term.

11.49. NZDFA\textsuperscript{890} seeks that the definition of “highest groundwater level” is amended to reflect the present-day hydrogeological situation, stating that some areas have been heavily modified (such as drained wetlands) and the hydrogeology has changed, and questions how the council will decide if a consent is required for a new offal pit or rubbish pit if groundwater levels were historically high but present levels are lower due to previous drainage works or shifting aquifers. The submitter is also concerned that existing offal and rubbish pits will be affected by the new definition and may need to be re-sited or remediated if the “highest groundwater level” is higher than the “seasonal high water table”.

11.50. Twelfth Knight Consulting\textsuperscript{891} considers that Environment Canterbury produces a map that indicates what these levels are to prevent re-litigation of the issue each time a consent application is made. Similarly, NZDFA\textsuperscript{892} seeks that historical hydrogeological and topographical information is provided to all land owners, free of charge, due to concerns that access to historical and technical (hydrological) information on the “highest groundwater level” is problematic for many farms and the “seasonal high water table” is much more readily determined.

Analysis\textsuperscript{893}

11.51. In response to Federated Farmers, we note that the issue sought to be addressed by these provisions is to remove ambiguity for plan users associated with the definition “seasonal high water table” and improve effectiveness of managing activities that pose a risk to groundwater. As outlined in the Section 32 Report supporting memorandum “Effects of cleanfill deposition on groundwater quality”:

the seasonally wet times of year (June - August) referenced in the definition are not always the time of highest groundwater levels. Many monitoring wells in Canterbury have their highest recorded groundwater levels outside the stipulated period. This means that the seasonal high water table is not the best estimate of how high groundwater levels may rise. Strict application

\textsuperscript{888} PC7-214.3
\textsuperscript{889} PC7-174.5
\textsuperscript{890} PC7-296.10
\textsuperscript{891} PC7-507.2
\textsuperscript{892} PC7-296.10
\textsuperscript{893} This section of the report was prepared by Andrea Richardson (Planner) and Lisa Scott (Environment Canterbury Groundwater Scientist).
of the definition where higher levels have been recorded outside the winter period, could increase the risk that groundwater will rise into excavations or deposition sites.

There is also a lesser risk that plan users will interpret the definition as applying only to the period from June to August in the one year prior to the activity being established. If that happens to be a dry winter, the highest potential level to which the groundwater may rise could be more severely underestimated.

11.52. In response to Fulton Hogan and others regarding the range of data to be used in determining the highest groundwater level, we accept the argument for altering “available” to “relevant” with respect to the hydrogeological and topographic information so that obviously erroneous records should not be included. Site-specific data are generally more suitable than projecting levels from a monitoring well many kilometres away. However, we disagree regarding the proposed minimum of five years of record from a site, because it is not sufficiently robust to ensure the ongoing desired vertical separation to groundwater that the rules which use this definition are trying to achieve.

11.53. Quarries and cleanfill deposition sites are generally long-term operations and after deposition fill will remain at the depth it was placed indefinitely. If that depth was controlled by the highest level of groundwater recorded in the past five years, for example (which has been a relatively dry climate period), the probability that groundwater could rise above that level over the next few years is high. By using the full length of record from long-term monitoring sites that have been in operation for decades, the probable maximum range of water levels can be defined better and the risk of intercepting groundwater or placing fill below the water table can be minimised.

11.54. In response to Twelfth Knight Consulting and NZDFA, we note that the GIS database “Canterbury Maps” contains groundwater level data from existing bores, which is likely to be more useful for plan users than a groundwater level map in terms of the ability to access the most up to date groundwater levels at a zoomed in scale, and then download and analyse this data.

Recommendation

11.55. Retain the new definition of “highest groundwater level”, but to change the phrase “all available” to “all relevant” hydrogeological and topographic information, as per Appendix E.894

11.56. Retain the changes made as a consequence of the new definition i.e. the deletion of the existing definition “Seasonal High Water Table”, and rules amendments to substitute the existing term with the PC7 term: Rules 5.8A, 5.12, 5.14, 5.24, 5.27, 5.96, 5.175, 5.177 and 5.178.

11.57. Amend Rule 5.96 to delete text to avoid duplication with the definition wording.

894 Fulton Hogan (PC7-428.1)
Water allocation zone boundary

Provisions

11.58. PC7 Part A amends the Rakaia-Selwyn and Selwyn-Waimakariri Combined Surface Water and Groundwater Allocation Zone boundaries in the CLWRP planning maps: Maps B-066, B-067, B-076 and B-077.

11.59. The current boundary for the Rakaia-Selwyn and Selwyn-Waimakariri Combined Surface Water and Groundwater Allocation Zone is landward of the edge of Te Waihora/Lake Ellesmere, leaving some wells that are located between the allocation zone boundary and the lake edge outside of any allocation zone. This means that when implementing the CLWRP, water abstractions from wells located in this narrow strip of land around the lake perimeter may not be counted in the Rakaia-Selwyn or Selwyn-Waimakariri Combined Surface Water and Groundwater Allocation Zones. PC7 offsets the water allocation zone boundary by 100 metres in the direction of the lake to include any existing or potential wells in the zones.

11.60. I note that the Section 32 Report and supporting technical memorandum did not fully describe all four Planning Maps that PC7 amends under this topic. However, the PC7 Planning Maps clearly show these amendments and all planning maps are listed in the PC7 provisions preamble “How to read Proposed Plan Change 7 to the Land and Water Regional Plan”.

Submissions and Analysis

11.61. One submission was received on the amendments to the Rakaia-Selwyn and Selwyn-Waimakariri Combined Surface Water and Groundwater Allocation Zone boundaries in PC7 Planning Maps B-066, B-067, B-076 and B-077. Ellesmere Sustainable Agriculture requests that the water allocation zone boundaries changes are deleted until consultation is undertaken with everyone that has existing groundwater or surface water takes within the amended area. The submitter is concerned that there may be some wells and surface water takes that will be significantly affected by this new zone, and in some cases this may result in the viability of the farming operation or the activity being severely impacted.

11.62. I have assessed Environment Canterbury’s GIS database and determined that there are no active water permits to take water from the expanded area of the Rakaia-Selwyn and Selwyn-Waimakariri Combined Surface Water and Groundwater Allocation Zones. The GIS database indicates that there has previously been 30 water permits to take groundwater or surface water within this area, however all are recorded as “terminated – expired”, “terminated-replaced” or “terminated- surrendered”. As there are no active/existing water permits in the expanded area, the PC7 boundary adjustment will not affect any active/existing water take consent holder.

11.63. I note that any present or future water permit should be assigned to an allocation zone, and the purpose of expanding the water allocation zone boundary is to make the consenting process clearer and more straightforward for applicants. If the boundary is not amended and the abstraction of groundwater is outside of any groundwater allocation zone, the activity is assessed as non-complying under Rule 5.129 to implement Policy 4.52. The boundary amendments will not impact on permitted activity water takes. Accordingly, I consider that

---

895 PC7-207.1, PC7-207.2
896 This paragraph was prepared by Fouad Alkhaier, Environment Canterbury Groundwater Scientist.
no changes are required in response to the concerns raised by Ellesmere Sustainable Agriculture.

**Recommendation**

11.64. Retain the Rakaia-Selwyn and Selwyn-Waimakariri Combined Surface Water and Groundwater Allocation Zone boundaries in PC7 Planning Maps B-066, B-067, B-076 and B-077 as notified.

**Aquifer systems**

**Provisions**

11.65. PC7 Part A amends the planning map layer ‘Aquifer systems and sediment’ in the CLWRP planning maps: Maps B-C09, B-C10, B-C12, B-C13 and B-059. This layer, which identifies the coastal confined gravel aquifer and the semi-confined and unconfined aquifer, currently has five unmapped areas within Christchurch City. PC7 maps these unmapped areas to provide clearer implementation of rules referring to aquifer types as depicted on the Planning Maps.

**Submissions and Analysis**

11.66. There are no submissions on this topic.

**Recommendation**

11.67. Retain the map layer ‘Aquifer systems and sediment’ in PC7 Planning Maps B-C09, B-C10, B-C12 and B-C13 as notified.

**Allocations between surface and groundwater allocation blocks**

**Provisions**

11.68. PC7 Part A introduces a new note into Schedules 9 and 13 of the CLWRP that states:

*A reduction in the annual volume allocated from the groundwater block will only be applied where site-specific stream depletion assessments have been carried out.*

11.69. The current wording of Schedule 9: Assessment of Stream Depletion Effect, and Schedule 13: Requirements for implementation of water allocation regimes, does not fully recognise uncertainties in the stream depletion assessment. For existing groundwater takes where no site-specific stream depletion assessment has been undertaken, an estimate of stream depletion is made to ensure that the stream depletion effect is accounted for in the surface water allocation block. Whilst this approach provides a conservative (higher) estimate of stream depletion resulting in a precautionary approach to surface water allocation, the amount of the take allocated to the groundwater allocation may be significantly smaller than a site-specific assessment would result in. This is therefore not a precautionary approach to the allocation of groundwater and may result in over-allocation of groundwater allocation zones.
11.70. The new note in Schedules 9 and 13 provides a precautionary approach to both the allocation of surface water and groundwater by ensuring that the risk of over-allocating the groundwater allocation zones is minimised. Where a conservative assessment of stream depletion is undertaken (i.e. the parameters used are not from a site-specific assessment), if there is a stream depletion effect that requires allocation to the surface water allocation block, no discount will be applied to the groundwater allocation for that take. For example, if a take is classified as moderately stream depleting in accordance with Schedule 9, 50% of the annual volume will be counted against the surface water allocation but 100% of the annual volume will be counted against the groundwater allocation.

11.71. The required site-specific information will be obtained as groundwater permits are renewed as the requirement for site-specific assessments is now required by Environment Canterbury as part of the assessment of environmental effects that forms part of any application for replacement water abstraction permits.

11.72. Further details are provided in the Section 32 Report supporting technical memorandum for this topic: “LWRP Stream depletion discounts to a groundwater allocation block.”

**Submissions and Analysis**

11.73. Four submissions were received on Schedule 9 and two submissions on Schedule 13.

11.74. Two of the submissions on Schedule 9 seek changes associated with Part B of PC7 (OTOP). Rathkeale Farming Partnership\(^{897}\) and P Brosnahan\(^{898}\) oppose the “150 day stream depletion methodology” set out in Schedule 9 and request that stream depletion is determined over a 30 day pumping rate as set out in the Opihi River Regional Plan. The submitters reason that South Canterbury is unique with Opuha Dam augmentation, and irrigators will face severe and unsustainable water restrictions.

11.75. I note that the matters raised within the submission appear to be more relevant to provisions introduced in Part C of PC7 regarding the transition from the ORRP to the CLWRP via PC7. As such, these submission points are not discussed further within this section and are instead addressed in Part 4, Section 9 of this report.

11.76. The remaining submissions are from OWL\(^{899}\) and M A Orchards et al\(^{900}\), who seek the deletion of the note from both Schedules. The submitters consider that requiring the stream depleting component of the water take to be counted against both the groundwater and surface water allocations is unnecessarily conservative and has the effect of mis-representing the allocation status of both water allocation zones.

11.77. In response to OWL and M A Orchards et al, I consider that a precautionary approach to water allocation, for both surface water and groundwater, allows for the fullest utilisation of the allocation block but minimises the chances of over allocation until such a time that a stream depletion assessment can be made using site-specific information. Adopting a precautionary

---

\(^{897}\) PC7-181.2  
\(^{898}\) PC7-248.1  
\(^{899}\) PC7-381.115, PC7-381.116;  
\(^{900}\) M A Orchards et al (PC7-488.7, PC7-488.8)
approach, as set out in the new note, is appropriate to ensure the CLWRP implements the water quantity policies in the NPSFM, in particular Policy B5:

*By every regional council ensuring that no decision will likely result in future over-allocation – including managing fresh water so that the aggregate of all amounts of fresh water in a freshwater management unit that are authorised to be taken, used, dammed or diverted does not over-allocate the water in the freshwater management unit.*

**Recommendation**

11.78. Retain the new note in Schedules 9 and 13 as notified.

**New drop-out rules**

**Provisions**

11.79. Existing restricted discretionary Rules 5.26, 5.28, 5.40 and 5.67 each have one condition, that the activities are the subject of a Farm Environment Plan that has been prepared in accordance with Schedule 7 Part A of the CLWRP. PC7 Part A introduces four new ‘drop-out’ rules into the CLWRP - Rules 5.26A, 5.28A, 5.40A and 5.67A to provide a clear rule pathway if the condition for these rules is not met. The new rules are as follows:

- PC7 Rule 5.26A is a new discretionary activity rule for the use of land for an offal pit and the associated discharges where the condition of Rule 5.26 is not met;
- PC7 Rule 5.28A is a new discretionary activity rule for the use of land for an on-site refuse disposal pit and the associated discharges where the condition of Rule 5.28 is not met;
- PC7 Rule 5.40A is a new non-complying activity rule for the use of land for a silage pit or the stockpiling of other decaying organic matter (including compost) and any associated discharges where the condition of Rule 5.40 is not met; and
- PC7 Rule 5.67A is a new non-complying activity rule for the discharge of fertiliser where the condition of Rule 5.67 is not met.

**Submissions and Analysis**

**Rule 5.26A Offal Pits and Rule 5.28A On-site Refuse Disposal Pits**

11.80. HortNZ\(^{901}\) supports PC7 Rules 5.26A and 5.28A, citing that the rules are appropriate to ensure that potential contamination of freshwater is appropriately managed. Federated Farmers\(^{902}\) also considers that the discretionary classification of both rules is reasonable. Ravensdown\(^{903}\) supports PC7 Rule 5.26A and in particular the discretionary status.

11.81. DOC\(^{904}\) requests that the activity status of Rule 5.26A and Rule 5.28A is changed from discretionary to a non-complying activity, reasoning that the activity status for these rules should be consistent with Rule 5.40 which manages a similar type of discharge.

\(^{901}\) PC7-356.28, PC7-356.25
\(^{902}\) PC7-430.19, PC7-430.20
\(^{903}\) PC7-114.7
\(^{904}\) PC7-160.10, PC7-160.11
11.82. I do not agree with DOC that a non-complying activity classification is more appropriate for discharges from offal pits and on-site refuse disposal pits given that the default content of a Farm Environment Plan (Part B of Schedule 7) is much less targeted on managing these types of discharges compared with other discharges associated with farming. As the requirements for FEPS are not as specific for offal pits and refuse pits, discretionary is an appropriate activity status in line with existing minor contaminant discharge Rule 5.100: “Any discharge that is not permitted by either Rule 5.98 or 5.99 and is not classified by any other rule in the Plan.”

11.83. Beef + Lamb\textsuperscript{906} seeks the deletion of Rule 5.26A unless its concerns relating to the definition of ‘highest groundwater level’ and PC7 Rule 5.24 are addressed. The submitter is concerned that existing Rules 5.24 and 5.26 and PC7 Rule 5.26A all apply to existing offal pits whether or not they are in use, meaning that a land-user whose existing offal pit complies with the existing CLWRP rules may no longer comply with the PC7 amendments to these rules, and existing offal pits may need to be excavated and moved. The submitter states that relocation of offal pits may not be practicable, safe or possible. The submitter’s general concerns regarding the definition of ‘highest groundwater level’ are discussed in the previous Part 3 Section 11 sub-topic ‘Description of highest groundwater level’ (paragraph 11.40 onwards).

11.84. Beef + Lamb\textsuperscript{906} considers that to address their concerns regarding existing discharges from offal pits, condition (5)(c) of Rule 5.24 should be amended as follows:

\begin{quote}
5. No discharge occurs: …
\begin{itemize}
\item[(c)] unless there is at least 3 m of soil or sand between the point of discharge and the highest groundwater level for new, modified, or upgraded offal pits; or
\item[(cc)] unless there is at least 3 m of soil or sand between the point of discharge and the seasonal high water table level for existing offal pits.
\end{itemize}
\end{quote}

11.85. As background, PC7 proposes to amend condition (5)(c) of Rule 5.24 to change the term ‘seasonal high-water table level’ to ‘highest groundwater level’ to better protect groundwater resources, as discussed in the previous sub-topic ‘Description of highest groundwater level’. PC7 amends Rule 5.26 to introduce a new matter of discretion regarding Ngāi Tahu values.

11.86. I do not agree with Beef + Lamb that the deletion of PC7 Rule 5.26A would resolve their concerns regarding discharges from existing offal pits. This is because the purpose of Rule 5.26A is to clarify for plan users the drop out rule if the condition of restricted discretionary Rule 5.26 is not met.

11.87. I recognise the concerns raised by Beef + Lamb regarding PC7 Rule 5.24 condition (5)(c) in that existing offal pits may no longer have three metres of separation between their base and the ‘highest groundwater level’ if this is shallower than the ‘seasonal high-water table level’. In this situation, the existing pit would likely require resource consent\textsuperscript{907} as the permitted activity threshold is no longer met. However, I do not agree with Beef + Lamb that it is appropriate to have one measure of highest groundwater for new offal pit discharges and another, potentially less protective of groundwater, for existing pits.

11.88. Existing offal pit discharges pose a risk to groundwater resources, particularly if there is less than 3 m of sand or soil between the base and groundwater. Unlined offal pits can leach contaminants whether they are new or existing. Therefore, although the type and

\textsuperscript{905} PC7-214.32, PC7-214.3, PC7-214.30, PC7-214.51

\textsuperscript{906} PC7-214.51

\textsuperscript{907} Section 20A of the RMA provides for certain existing lawful activities.
concentrations of contaminants in the discharge may vary, old offal pits may adversely affect groundwater quality.\textsuperscript{908} Given this, I consider that the discharges need to be appropriately managed through a consent process, and accordingly do not recommend that PC7 Rule 5.24 is amended.

**Rule 5.40A – Silage Pits and Compost; and Rule 5.67A – Fertiliser Use**

11.89. Ravensdown\textsuperscript{909} supports Rules 5.40A and 5.67A including the non-complying status. Other than stating that the activity status provides clarity, the submitter does not expand on why they consider a non-complying activity status for these activities is appropriate. The submission from H Iles\textsuperscript{910} in support of Rule 5.67 does not appear to be on this topic.

11.90. Federated Farmers\textsuperscript{911} considers that Rule 5.40A should be classified as discretionary rather than non-complying to be consistent with Rules 5.26A and 5.28A or alternatively delete the Rule in its entirety.

11.91. Beef + Lamb\textsuperscript{912} considers a non-complying activity status for the activities covered by PC7 Rules 5.40A and 5.67A is excessive and disproportionate to risk and effect, and should be amended to discretionary. The submitter states that existing restricted discretionary Rule 5.40 does not allow a silage pit to be managed by a Schedule 7A Management Plan for Farming Activities, and therefore permitted farming land uses would not be able to apply for restricted discretionary activity resource consents to use land for silage pits and would instead default to a non-complying activity. Beef + Lamb seeks that Rules 5.40 and 5.67 are amended to enable these permitted activity farming plans or alternatively the PC7 drop-out Rules 5.40A and 5.67A are deleted.

11.92. The purpose of Rules 5.40A and 5.67A is to clarify for plan users the drop out rule if the condition of restricted discretionary Rule 5.40 is not met.

11.93. I note that a non-complying activity status aligns with the rule classification for other farming rules in the CLWRP if the rule requirement for a Farm Environment Plan is not met (for example Rule 5.59 that refers to the use of land for farming within a green or light blue NAZ). However, I agree with Beef + Lamb and Federated Farmers that a non-complying activity status for PC7 Rules 5.40A and 5.67A is overly onerous if all other farming activities on the property are permitted and therefore managed under a Schedule 7A Management Plan for Farming Activities. With this in mind, I consider it is appropriate to change the non-complying activity status of PC7 Rules 5.40A and 5.67A to discretionary.

11.94. I do not consider that Rules 5.40A and 5.67A should be deleted, as sought by Beef + Lamb, as although Rules 5.40 and 5.67 currently default to a discretionary activity under the ‘catch-all’ Rule 5.6, the new rules clarify the rule drop out pathway.

**Recommendation**

11.95. Retain the activity status of Rules 5.26A and 5.28A as notified.

\textsuperscript{908} Lisa Scott, Environment Canterbury Scientist.
\textsuperscript{909} PC7-114.8, PC7-114.18
\textsuperscript{910} PC7-310.17
\textsuperscript{911} PC7-430.21
\textsuperscript{912} PC7-214.38, PC7-214.46
11.96. Amend the activity status of Rules 5.40A and 5.67A to discretionary.

11.97. Amend a typographical error in PC7 Rule 5.40 condition (1) to reinstate the word ‘Part’ under clause 16 Schedule 1 of the RMA. Condition (1) should read “…a Farm Environment Plan that has been prepared in accordance with Schedule 7 Part A”, rather than “…a Farm Environment Plan that has been prepared in accordance with Schedule 7 A”.

**Changes relating to s14(3)(b) of the RMA**

**Provisions**

11.98. PC7 Part A replaces the term “an individual’s” with “a person’s” in relation to the take or use of stockwater to provide consistency with changes to section 14(3)(b)(ii) of the RMA by the Resource Legislation Amendment Act 2017. The RMA defines913 ‘person’ as “includes the Crown, a corporation sole, and also a body of persons, whether corporate or unincorporated”, meaning that farmers who operate as companies would meet the RMA definition of ‘person’.

11.99. PC7 amends Policy 4.6, Rules 5.111 and 5.112, and the interpretation note for small and community water takes that precedes these rules.

11.100. PC7 amends Policy 4.6 as follows:

*Policy 4.6 In high naturalness water bodies listed in Sections 6 to 15, the damming, diverting or taking of water is limited to that for a person’s or community’s stockwater needs, an individual or community’s stock or drinking-water needs, and water for the operation and maintenance of existing infrastructure.*

11.101. PC7 amends condition (3) of Rule 5.111 as follows:

*5.111 The take and use of water from a river, lake or an artificial watercourse is a permitted activity, provided the following conditions are met:*

...  
3. Where the take is from a waterbody with a minimum flow that is set in Sections 6 to 15, the take of water for other than an individual’s reasonable domestic use and a person’s reasonable stockwater use ceases when the flow is at or below the minimum flow for that waterbody, as estimated by the Canterbury Regional Council; and ...

11.102. PC7 amends condition (3) of Rule 5.112 as follows:

*5.112 The take and use of water from any river or part of a river, or lake, that is subject to a Water Conservation Order is a restricted discretionary activity, provided the following conditions are met:*

...  
3. The take of water for other than an individual’s reasonable domestic use and a person’s reasonable stockwater use ceases when the flow is at or below the minimum flow for that waterbody, as set out in the relevant Water Conservation Order; and ...

913 Section 2 of the RMA: Interpretation
Submissions and Analysis

Policy 4.6

11.103. Six submissions were received on Policy 4.6, including two in support. Bowden Environmental\(^{914}\) considers that Policy 4.6 should be amended to allow for priority uses for stockwater and drinking water needs, and seeks that the policy specifies that stockwater needs includes “water for stock drinking, dairyshed washdown and animal welfare”, and an individual’s or community’s drinking water needs is expanded to “domestic needs, including drinking water needs”.

11.104. Orari River Protection Group\(^{915}\) seeks that Policy 4.6 prevents further intensification by irrigation or forestry to prevent further deterioration of water quality in high naturalness water bodies.

11.105. Ngā Rūnanga\(^{916}\) considers that drinking water needs should be listed before that of stockwater, and that water for the operation and maintenance of existing infrastructure should not be provided for in high naturalness water bodies.

11.106. The CLWRP does not allocate water to particular end uses. However, Policy 4.5 sets out the prioritisation for the take and use of water for all waterbodies including high naturalness water bodies, and states that community drinking-water supplies and stock water are provided for as a first priority. Second priority is to meet the needs of people and communities for water for irrigation, hydro-electricity generation and other economic activities and to maintain river flows and lake levels needed for recreational activities. Policy 4.6 requires the damming, diverting or taking of water to be protective of the outstanding and significant characteristics of high naturalness water bodies, while recognising first priority water requirements and the operation and maintenance requirements of existing infrastructure.

11.107. In response to the submissions from Bowden Environmental, I do not agree that Policy 4.6 should introduce those additional uses of water as this would mean allocating water to a particular end use other than that required by section 14(3)(b) of the RMA. Further water allocation to particular end uses may occur on a catchment basis in the development of sub-regional Sections 6 to 15 of the CLWRP in accordance with Policies 4.9 and 4.11.

11.108. The reasons provided by Orari River Protection Group seeking amendments to Policy 4.6 refer to water quality and do not clearly relate to the damming, diverting or taking of water. As such, it is not possible to assess the submission and I recommend rejecting the relief sought.

11.109. I agree with Ngā Rūnanga with respect to the appropriateness of listing drinking water needs before that of stockwater, which aligns with the order listed in section 14(3)(b) of the RMA, and I therefore recommend the policy is amended to provide the relief sought by the submitters.

\(^{914}\) PC7-84.1
\(^{915}\) PC7-551.7
\(^{916}\) PC7-423.8, PC7-423.9
Rules 5.111 and 5.112

11.110. The majority of submitters supported PC7 Rules 5.111 and 5.112 as notified, including ‘note 2’ that immediately above Rule 5.111.

11.111. Egg Producer Federation NZ and Poultry Industry Association NZ supports Rules 5.111 and 5.112 but are concerned that the term ‘reasonable’ in terms of water use is not defined and will be open to interpretation. J Richardson also seeks that the term “reasonable” is defined in the plan.

11.112. I note that the term “reasonable” is not a new term in these rules and accordingly the PC7 changes will not introduce or increase any uncertainty. Regardless, Environment Canterbury website has an information guide ‘Domestic and stock water taking and use’ (February 2018) that responds to the question of what is “reasonable” for surface water and groundwater takes.

11.113. Cashmere Stream Care Group indicates its partial support of Rule 5.112, stating that water storage should be mandatory to meet normal animal requirements. I consider that this request does not fit within the functions of regional councils set out in section 30 of the RMA.

Recommendation

11.114. Amend Policy 4.6 to list drinking water needs before that of stockwater as per the tracked changes of PC7.

11.115. Retain Rules 5.111 and 5.112 as notified.

Irrigation schemes

Provisions

11.116. PC7 deletes Rules 5.60 and 5.61 from the CLWRP to avoid duplication with existing Rule 5.41. As a consequence, Rules 11.5.15 and 13.5.21 are proposed to be amended to remove the references to Rules 5.60 and 5.61 and then insert a reference to Rule 5.41. The ‘notes’ located above the region-wide and sub region rules for irrigation schemes are also updated with respect to the rule references.

11.117. PC7 also amends Rule 5.62 which manages nutrient discharges from land administered by an irrigation scheme or a principal water supplier. The rule precludes public or limited notification of a resource consent application, provided the nutrient loss conditions are met. Notification of the application may still occur in certain circumstances, for example if special circumstances exist in relation to the application, or if the activity may affect statutory acknowledgement areas.

---

917 For example; Fox Peak Station (PC7-166.1), Opuha Water (PC7-381.4)
918 PC7-197.2, PC7-197.3
919 PC7-65.9
921 PC7-193.8
922 Ngā Rūnanga (PC7-423.8, PC7-423.9)
11.118. PC7 proposes to move the condition of Rule 5.62 into the rule descriptor to ensure that the entry path into this rule only applies to irrigation schemes or principal water suppliers. This is to close off a loophole that could potentially allow entities that are not schemes, who do not meet condition (1) of Rule 5.62 to be a non-complying activity. This is a more permissive rule framework than the CLWRP farming land use rules in a Red Nutrient Allocation Zone, which generally prohibit increases in nutrient losses. PC7 amends Rule 5.62 as follows:

**Rule 5.62** The discharge of nutrients onto or into land in circumstances that may result in a contaminant entering water that would otherwise contravene s15(1) of the RMA, where the applicant is an irrigation scheme or a principal water supplier or the holder of the discharge permit will be an irrigation scheme or a principal water supplier, is a discretionary activity, provided the following condition is met:

1. The applicant is an irrigation scheme or a principal water supplier, or the holder of the discharge permit will be an irrigation scheme or a principal water supplier.

**Notification**

Pursuant to sections 95A and 95B of the RMA an application for resource consent under this rule will be processed and considered without public or limited notification, provided that:

1. The nutrient loss is equal to or less than that currently authorised through conditions on a water permit to take and use water; or
2. The nutrient loss is equal to or less than the aggregation of the nutrient baseline across properties within the command area, calculated on a surface water catchment basis.

Note: That limited notification to affected order holders in terms of section 95F of the RMA will be necessary, where relevant.

11.119. PC7 Rule 5.64 is proposed to be changed as a consequence of the above change to Rule 5.62:

**Rule 5.64** The discharge of nutrients onto or into land in circumstances that may result in a contaminant entering water that would otherwise contravene s15(1) of the RMA and that does not meet condition 1 of Rules 5.62 or conditions 1 or 2 of Rule 5.63 is a non-complying activity.

11.120. These amendments ensure that the land use and discharge rules that apply to irrigation schemes or principal water suppliers is clear. Specifically, PC7 clarifies that Rule 5.41 permits the use of land for farming where an irrigation scheme or principal water supplier holds a consent that managed nutrient losses, whereas Rule 5.62 provides for the discharge of nutrients onto or into land where the applicant is an irrigation scheme or principal water supplier.

11.121. The amendments to PC7 Rule 5.41, ‘note 2’ above Rule 5.41, and ‘note 3’ above Rule 5.60 relate to the PC7 topic ‘Commercial Vegetable Operations’ and any submissions on these changes are covered in that section of this Section 42A Report.

**Submissions and Analysis**

11.122. All submitters\(^{923}\) on Rules 5.60 and 5.61 support the rule deletions as notified. MHV\(^{924}\) states it supports the amendments as it allows them to hold a resource consent to manage nutrient

---

\(^{923}\) For example; BCIL (PC7-153.20), Federated Farmers (PC7-430.29), Ashburton River Irrigators (PC7-343.28)

\(^{924}\) PC7-218.1 to PC7-218.3
losses from both scheme-irrigated and non-scheme irrigated properties in an integrated manner. It considers that this is especially relevant where a shareholder, for example, may rotate crops between various properties (with only some being irrigated by the MHV Scheme) or where a dairy farming operation is split between a scheme-irrigated dairy platform and a dryland (or non-scheme-irrigated) support property.

11.123. All twelve submissions received on PC7 Rule 5.62 partially opposed the amendments. Five submitters including BCIL\textsuperscript{925} and RSIL\textsuperscript{926} consider that Rule 5.62 should be amended from a Section 15 RMA nutrient discharge activity to a Section 9 RMA farming land use activity due to their common concern that the rule being written as a discharge activity significantly complicates the consenting process for irrigation schemes when all other nutrient management rules are written as farming land use activities.

11.124. In response to submissions on the RMA section (Section 9 or 15) that Rule 5.62 is promulgated under, I note that farming activities that are part of established irrigation schemes and water distribution schemes are classified as a permitted activity (Section 9 RMA use of land for a farming activity) provided that the resource consents held by the scheme deal with nutrient discharges and leaching losses. New irrigation schemes are able to seek scheme-wide nutrient discharge consents as a discretionary activity. These rules address the concerns of submitters on the proposed CLWRP who sought to avoid the costs associated with duplicate consent requirements such as might arise where the resource consents granted for an irrigation scheme had already comprehensively addressed nutrient loss issues.

11.125. Ngā Rūnanga\textsuperscript{927} opposes the existing public and limited notification restrictions in Rule 5.62, stating that because nutrients discharge from irrigation schemes and principal water suppliers are managed across farms, there is the potential for nutrient hot spots and effects on areas of significance to mana whenua. On this basis it considers that providing for mana whenua and the wider community to participate should be an option provided to the Council. Forest & Bird\textsuperscript{928} also seeks that Rule 5.62 is amended to delete the existing public and limited notification restrictions due to concerns about lack of public input.

11.126. I note that the restrictions on notification were included in CLWRP Rule 5.62 as an incentive to encourage irrigation schemes and principal water suppliers to manage nutrient discharges within their command area. From a consenting perspective, the regime is more efficient that one which requires individual land owners individual discharge or land use permits. Removing the notification restrictions will allow for public participation in applications that have more than minor effects, but may also deter irrigation schemes and principal water suppliers from applying for global discharge permits. On this basis, I do not agree that it is appropriate to delete the notification restriction as sought by Ngā Rūnanga and Forest & Bird.

11.127. Four Community Boards in the Waimakariri District\textsuperscript{929} and Waimakariri DC\textsuperscript{930} seek the deletion of the term ‘principal water supplier’ from Rule 5.62. The common concern (which primarily relates to PC7 Waimakariri sub-region Rule 8.5.30) is that the PC7 Part C nitrate reduction targets will apply to Waimakariri DC’s community water supply and stock water race network schemes as they are a Principal Water Supplier. The submitters state that this would require Waimakariri DC to seek a resource consent for any discharge of nutrients onto land that would

\textsuperscript{925} PC7-153.22  
\textsuperscript{926} PC7-235.20  
\textsuperscript{927} PC7-423.38  
\textsuperscript{928} PC7-472.51  
\textsuperscript{929} For example; Oxford-Ohoka Community Board (PC7-148.25), Kaiapoi-Tuahiwi Community Board (PC7-42.27)  
\textsuperscript{930} PC7-3.24
result in a contaminant entering water from the stockwater race network or community water
supply. This submission is covered in PC7 Part C of the Section 42A Report.

11.128. Two submissions\(^{931}\) were received on Rule 5.64, both in support of the provision as notified. Similarly, two submissions were received on Rule 13.5.21, both in support.\(^{932}\)

**Recommendation**

11.129. Retain the PC7 deletion of Rules 5.60 and 5.61 as notified. Also retain the changes to the rule references in the ‘notes’ located above the region-wide and sub region rules for irrigation schemes made as a consequence of these rule deletions.

11.130. Retain the PC7 amendments to Rules 5.62, 5.64, 11.5.15 and 13.5.21 as notified.

**Submission of Water Quality data**

**Provisions**

11.131. PC7 inserts a new policy, Policy 4.103, into Section 4 of the CLWRP:

> **Policy 4.103** Any resource consent granted with a consent condition requiring the collection of water quality samples, shall also include a condition requiring all water quality sample data to be submitted to the Canterbury Regional Council in a format suitable for automated upload to the Council’s water quality database software.

11.132. The supporting technical memorandum ‘Proposed new policy in Land and Water Regional Plan to improve access to water quality data’\(^{933}\) describes the intent of Policy 4.103, the current issue with data submission, and data formats, and is summarised below.

11.133. The purpose of Policy 4.103 is to improve access to water quality data that is submitted by consent holders to Environment Canterbury. If water quality data is provided in an appropriate electronic format it can be analysed by Council which will aid consent monitoring and enforcement, improve spatial coverage for assessing the current state of water quality in catchments, and provide evidence to inform future planning and resource management decisions.

11.134. Many discharge, water take and land use consents currently require groundwater or surface water quality sampling to monitor potential effects on the environment. Samples are collected by consent-holders or their contractors and submitted to accredited laboratories for analysis. The results are then sent to Environment Canterbury in various formats, predominately in a document in which data is not able to be extracted and automatically uploaded e.g. pdf format.

11.135. Data from water quality analysis can be uploaded into Hilltop database software from various data formats, including XML or CSV data files. However other software or methods to automatically upload data that may become available soon, including uploading files via ftp site; data entry via web portal or direct telemetry of continuous data.

\(^{931}\) Ravensdown (PC7-114.17), HortNZ (PC7-356.42)

\(^{932}\) MHV Water (PC7-218.4), Federated Farmers (PC7-430.166)

\(^{933}\) Scott, L. *Proposed new policy in Land and Water Regional Plan to improve access to water quality data*. Environment Canterbury Technical Memorandum, 2 March 2019.
11.136. As the submission points on Policy 4.103 are relatively diverse, the below section combines the submission summary and analysis for succinctness.

**Submissions and Analysis**

11.137. There are 20 submissions on Policy 4.103, with 12 seeking that it be retained as notified and the remainder seeking that it be amended.

11.138. Several submitters\(^{934}\) state that they support Policy 4.103 because the collection and centralised storage of water quality monitoring data is essential for a robust assessment of waterbody health and trends to inform future plan reviews.

11.139. Synlait\(^{935}\) supports the intent of the policy but seeks further details on whether the Council water quality database software is readily available to the public. They seek amendments to the policy to ensure that the water quality data required by the resource consent is made available to the public in a way which is consistent with the reporting requirements of the resource consent.

11.140. Similarly, Ravensdown\(^{936}\) and Ashburton Lyndhurst Irrigation\(^{937}\) raise concerns that it may not always be feasible for consent holders to provide the data in the manner required by this policy and seek amendments to the policy wording recognise this when resource consent conditions are being drafted. Ashburton Lyndhurst Irrigation\(^{938}\) also requests clarity on what is meant by “format suitable for automated upload to the Council’s water quality database software” including whether the software used by the Council is accessible to other users.

11.141. In response to submitters’ concerns on the practicality of providing data in a suitable format, the Section 32 Report supporting technical memorandum on this topic states that Hill Laboratories, who do most of Environment Canterbury’s routine analyses and data provision, have indicated that providing water quality data in a format suitable for automated upload is a service that could easily be included in the analytical fees of samples being processed. Therefore, I consider that an amendment to Policy 4.103 to only require the submission of data ‘where feasible’ is not warranted, and in any event a particular barrier to submission can be addressed through the resource consent process.

11.142. Regarding increased certainty on the required format of the data, I consider that the policy wording needs to be flexible enough to allow for developments in software or methods that enable automatic upload of data. Environment Canterbury staff will advise consent holders of suitable data formats for automatic upload but specifying these formats in Policy 4.103 significantly restricts the ability to make future information technology improvements.

11.143. Federated Farmers\(^{939}\) seeks that Policy 4.103 is amended to emphasize that only the water quality sample data required by a consent condition needs to be submitted.

11.144. I consider the amendment Federated Farmers is seeking is probably unnecessary but may make the policy direction clearer to users of the Plan. The policy wording is recommended to

\(^{934}\) For example; DairyNZ (PC7-357.6), Balance Agri-Nutrients (PC7-441.3), Central South Island Fish & Game (PC7-351.8)

\(^{935}\) PC7-188.1

\(^{936}\) PC7-114.6

\(^{937}\) PC7-390.6

\(^{938}\) PC7-390.6

\(^{939}\) PC7-430.17
be amended to: “...requiring all the water quality sample data required by the consent conditions to be submitted...”.

11.145. C Starbuck\textsuperscript{940} raises concerns about the use of glyphosate in Canterbury and seeks that Policy 4.103 is amended to require testing of glyphosate. This submitter states that recent court cases have proven that glyphosate is highly carcinogenic and extremely toxic to people, animals and the environment.

11.146. The requirement to test for glyphosate requires investigation into the issue, consideration of any plan methods to address the issue, and then assessment of the implications of these methods. As this work has not been undertaken in PC7, and if indeed this change is within the scope of PC7, I recommend that this submission be rejected.

11.147. As One Incorporated\textsuperscript{941} requests that in addition to the submission of data, the policy also requires the collection of water quality data.

11.148. I disagree that the policy should also require sampling of specific contaminants. The appropriateness and specific details of any consent conditions requiring water quality sampling is determined when considering a resource consent application.

11.149. As One Incorporated\textsuperscript{942} also seeks wording amendments so that Policy 4.103 only applies to existing consents to take and use of water and to use land for a farming activity. Its submission indicates that they seek less reliance on modelled outcomes, and more reliance on actual measured data, for the assessment of the actual reductions in nutrient losses and loadings. However, its reason for limiting the types of consent activities that the policy would apply to is unclear.

11.150. I do not agree with the amendment sought by As One Incorporated as it would omit the many consent activities that could require water sampling, particularly discharges to land and water, as listed in the Section 32 Report supporting technical memorandum on this topic.

11.151. CCC\textsuperscript{943} submits that the intent of the policy is supported but that the policy is written in the guise of a rule/method. It considers the policy needs to either be rewritten or relocated into the rules of the plan.

11.152. In response to CCC, I note that a similar approach has been successfully implemented for water use data in Policy 4.54 of the CLWRP and therefore do not consider the submitter’s concerns are warranted. I consider the policy is clear and specific, and fit-for-purpose.

Recommendation

11.153. Amend Policy 4.103, as per Appendix E.
Reference to Regional Pest Management Plan

Introduction and Provisions

11.154. The Canterbury Regional Pest Management Plan 2018-2038 is a key component of Environment Canterbury’s wider biosecurity programme and provides for the efficient and effective management and/or eradication of specified harmful organisms in the Canterbury Region. The Plan commenced on 1 July 2018 and replaces the now revoked Canterbury Regional Pest Management Strategy 2005-2015.

11.155. PC7 Part A amends references in the CLWRP from “Canterbury Regional Pest Management Strategy” to “Canterbury Regional Pest Management Plan”. The relevant provisions are:

- Section 1.3.3: Statutory Planning for Managing Land and Water, and the Role of the Land and Water Regional Plan;
- Section 2.9: Definition of “vegetation clearance”;
- Policy 4.87; and
- Condition (4) of Rule 5.163, clause (c) of Rule 5.170, and condition (5) of 15A.5.27.

11.156. Except for Rule 5.163, the provisions listed above are only amended by PC7 in relation to the Canterbury Regional Pest Management Strategy reference. Rule 5.163 is also amended with regards to the PC7 Part A topic ‘Indigenous Freshwater Species Habitat’.

Submissions and Analysis

11.157. No submissions were received on the amendment to the Canterbury Regional Pest Management Strategy reference in Section 1.3.3 of the CLWRP.

11.158. Other than DOC, discussed below, all submitters on the PC7 definition of “vegetation clearance” support the amendment as notified. All submitters on Policy 4.87 support the policy as notified. There are no submissions on Rule 15A.5.27.

11.159. DOC seeks a consequential amendment to the definition of “Vegetation Clearance” related to their submission on Rule 5.163 and implications on indigenous freshwater species habitats. As their concerns are unrelated to the PC7 reference to Canterbury Regional Pest Management Plan, this submission will be discussed in the PC7 Part A topic ‘Indigenous Freshwater Species Habitat’.

11.160. Federated Farmers supports the amendment to condition (4) of Rule 5.163. All other submissions on Rule 5.163 are on the PC7 Part A topic ‘Indigenous Freshwater Species Habitat’ and are accordingly discussed in that section of this report.

---

944 Rules 8.5.2, 9.5.7 and 11.5.48 retain the reference to the Regional Pest Management Strategy as these rules only related to the repair of earthquake damaged land undertaken prior to 31 December 2018.
945 For example; Beef + Lamb (PC7-214.7), Federated Farmers (PC7-430.7)
946 For example; Beef + Lamb (PC7-214.15), Federated Farmers (PC7-430.12)
947 PC7-430.58
11.161. J Richardson\textsuperscript{948}, Beef + Lamb\textsuperscript{949} and Federated Farmers\textsuperscript{950} support PC7 Rule 5.170. As PC7 only amends this rule with regards to the Canterbury Regional Pest Management Strategy, the submissions can be assumed to be in support of this minor change.

11.162. Arowhenua and Te Rūnanga\textsuperscript{951} seek a new condition that the activity does not occur within any mapped ‘Rock Art Management Area’ which are located within the OTOP zone, citing concerns regarding potential adverse effects of activities on these nationally and culturally important limestone rock areas.

11.163. The Arowhenua and Te Rūnanga submission on Rule 5.170 will be addressed in Part B of PC7 given that rock art is currently only mapped in Section 14 (OTOP) of the plan through PC7.

\textbf{Recommendation}

11.164. Retain the provisions for Section 1.3.3, the definition of “vegetation clearance”, Policy 4.87, condition (4) of Rule 5.163, Rule 5.170 and 15A.5.27 as notified.

\textbf{River engineering}

\textit{Introduction and Provisions}

11.165. Environment Canterbury has responsibilities and duties regarding flood protection and flood control works under the Soil Conservation and Rivers Control Act 1941 and the Land Drainage Act 1908. River and Drainage Rating Districts are established under these Acts for communities that pay to receive the benefits of this function, and Environment Canterbury River Engineering undertake work to deliver the objectives of each Rating District. Most Rating Districts have a focus on keeping the active bed clear of vegetation, and protecting and enhancing flood protection vegetation in the river berms.

11.166. The key CLWRP provisions that apply to Environment Canterbury River Engineering’s flood protection activities are the definition of ‘defence against water’ and permitted activity Rule 5.138 which refers to this definition. For context, one of the conditions of Rule 5.138 is that the activity is undertaken in accordance with a plan that has been certified by Environment Canterbury as being in accordance with the Code of Practice for Defences Against Water and Drainage Schemes. The majority of maintenance activities undertaken by Environment Canterbury River Engineering for flood protection and flood control works are carried out under CLWRP Rule 5.138. However, some activities including bank erosion repairs, re-battering of banks, reshaping of the bed and diversion of water during high flows do not meet the definition of ‘defence against water’ and therefore may require resource consent under the CLWRP.

11.167. PC7 Part A amends the definition of ‘defence against water’ to introduce “\textit{any re-contouring or re-battering}” so that the maintenance activities carried out by or on behalf of a local

\textsuperscript{948} PC7-65.19  
\textsuperscript{949} PC7-214.65  
\textsuperscript{950} PC7-430.60  
\textsuperscript{951} PC7-424.113
authority or network utility operator for flood protection purposes have a permitted activity pathway:

Definition against water means:

a. any structure or equipment, including any bund, weir, spillway, floodgate, bank, stopbank, retaining wall, rock or erosion protection structure, groyne, vegetation (including anchored tree protection) or reservoir; or

b. any re-contouring or re-battering;

and that is designed to have the effect of stopping, diverting, controlling, restricting or otherwise regulating the flow, energy or spread of water, including floodwaters, in or out of a waterbody, artificial watercourse, or artificial lake. For the purposes of this definition, dams are excluded.

11.168. PC7 also amends Rule 5.138 to update the date of the Code of Practice for Defences Against Water and Drainage Schemes document to April 2019, to introduce restrictions on activities undertaken in a mapped ‘Indigenous Freshwater Species Habitat’, and to clarify that the rule only covers diversions and discharges (i.e. not excavation, deposition or other disturbance) with respect to artificial watercourses:

Rule 5.138 The installation, maintenance, use and removal of defences against water in, on or under the bed of a lake or river, including:

a. the associated deposition of substances on, in or under the bed of a lake or river, and excavation the associated diversions and discharges of sediment into water, and any excavation or other disturbance of the bed of a lake or river; and

b. the associated diversion and discharge of sediment laden water into an artificial watercourse;

is a permitted activity, provided the following conditions are met:

1. The activity does not prevent access in any way to lawfully established structures, including defences against water; and

2. Other than for the use of defences against water the activity is not in, on, or under the bed of any river or lake listed as a high naturalness waterbody in Sections 6 to 15 or within a salmon spawning site listed in Schedule 17, or in any inanga spawning habitat during the inanga spawning season of 1 March to 1 June inclusive, or in any Indigenous Freshwater Species Habitat; and

3. The activity is undertaken by or on behalf of a local authority or a network utility operator in accordance with a plan that has been certified by the CRC as being in accordance with the Canterbury Regional Council Code of Practice for Defences Against Water and Drainage Schemes (June 2015 April 2019); and

4. The works or structures do not prevent any existing fish passage.

11.169. PC7 also amends condition (4) of Rule 5.168 to provide for the use of land for earthworks or cultivation within riparian areas and within 5 m of flood control structures where the permission of the agency responsible for maintaining the structure has been obtained. This is to address an issue for Environment Canterbury River Engineering when undertaking earthworks, such as for maintenance, on the landward side of a stopbank, there is currently a requirement to obtain resource consent for earthworks in the riparian margin under Rule 5.168 as condition (4) cannot be met (i.e. the stopbanks are flood control structures).

Rule 5.168 The use of land for earthworks outside the bed of a river or lake or adjacent to a wetland boundary but within:
1. 10 m of the bed of a lake or river or a wetland boundary in Hill and High Country land or land shown as High Soil Erosion Risk on the Planning Maps; or
2. 5 m of the bed of a lake or river or a wetland boundary in all other land not shown as High Soil Erosion Risk on the Planning Maps or defined as Hill and High Country; and any associated discharge of sediment or sediment-laden water in circumstances where sediment may enter surface water is a permitted activity, provided the following conditions are met:

4. Except in relation to recovery activities or the establishment, maintenance or repair of network utilities and fencing, any earthworks or cultivation is not within 5 m of any flood control structure without the prior written permission of the person or agency responsible for maintaining that flood control structure; and ...”

Submissions and Analysis

Definition of ‘defence against water’

11.170. Two submissions were received on the PC7 amendment to the definition of ‘defence against water’. CCC supports the definition as notified, stating that introducing re-contouring and re-battering activities into the definition will have the same impacts as those described in the existing definition.

11.171. Ngā Rūnanga opposes the PC7 definition of ‘defence against water’, stating that the addition of the phrase “any re-contouring or re-battering” makes the scope of works able to be undertaken under permitted activity Rule 5.138 too uncertain. The submitter considers that significant damage could occur to the bed of a river as the rule does not contain area or volume limits.

11.172. In response to Ngā Rūnanga, I consider that the risk of significant damage to the bed of a river due to the amended definition is minimal given the update to the Code of Practice for Defences Against Water and Drainage Schemes (April 2019), the existing restrictions on activities in Rule 5.138, and the new restriction introduced in PC7 regarding activities in an ‘Indigenous Freshwater Species Habitat’. Accordingly, I do not recommend that the definition is amended in response to this submission.

11.173. I note that a minor correction under Clause 16, Schedule 1 of the RMA is recommended to the definition of ‘defence against water’ to improve readability, being the deletion of the word “and” immediately after clause (b).

Rule 5.138

11.174. Five submitters support PC7 Rule 5.138 as notified. Fish & Game and Ngā Rūnanga indicate their support is due to the restrictions introduced for activities that may impact on habitats of indigenous freshwater species.

11.175. Timaru DC state it is neutral to PC7 Rule 5.138, but seeks that the permitted activity criteria is not amended to be any more restrictive.
11.176. Arowhenua and Te Rūnanga seek a new condition that the activity does not occur within any mapped ‘Rock Art Management Area’ which are located within the OTOP zone, citing concerns regarding potential adverse effects of activities on these nationally and culturally important limestone rock areas.

11.177. The Arowhenua and Te Rūnanga submission will be addressed in Part B of PC7 given that rock art is currently only mapped in Section 14 (OTOP) of the plan through PC7.

11.178. Genesis considers that Rule 5.138, and all other PC7 rules that refer to ‘Indigenous Freshwater Species Habitat’, should be amended to allow activities in these mapped habitats as a permitted activity if the activity is associated with the Tekapo Power Scheme.

11.179. In response to the submission from Genesis, I note that the PC7 ‘Indigenous Freshwater Species Habitat’ map layer has been amended to provide a 40 metre buffer to all nationally significant hydro-electricity generation infrastructure and associated activities in response to submissions on the PC7 topic ‘Indigenous Freshwater Species Habitat’. Given this recommended amendment, I do not consider that PC7 Rule 5.138 also needs to be amended to address the submitter’s concerns.

11.180. Federated Farmers, Ellesmere Sustainable Agriculture, Ashburton River Irrigators and Greenstreet Irrigation Society seek the deletion of the restrictions on activities in an ‘Indigenous Freshwater Species Habitat’ (in line with their opposition to all PC7 provisions that refer to this term), stating that there needs to be a thorough analysis and discussion (especially with land owners and managers) about the habitat mapping and their implications, in particular any economic impacts.

11.181. I do not agree with the deletion sought by these submitters, as the activities managed under Rule 5.138 include sediment discharges, diversion of water and disturbance of the bed, all of which could potentially impact on the habitats of the threatened and at risk indigenous freshwater species listed in the definition of ‘Indigenous Freshwater Species Habitat’. Further discussion is provided in the PC7 topic ‘Indigenous Freshwater Species Habitat’.

11.182. I note that two minor corrections are required to Rule 5.138 under Clause 16, Schedule 1 of the RMA. The first is an amendment to PC7 Rule 5.138 to reinstatement of the word “or” from clause (a) of the rule descriptor. The second is an amendment to the existing (operative) Rule 5.138 condition (3) to delete “Council” from the title of the Code of Practice as per the title on the published document.

11.183. I also recommend a minor correction to existing Rule 5.140 to remove a duplication with Rule 5.138 for the diversion of water. Rule 5.138 covers the diversion of water associated with the installation, maintenance, use and removal of defences against water. However, existing Rule 5.140 specifies “Despite any other rule in this plan, the ...diversions associated with undertaking activities in Rules 5.135 to 5.139...”. To remove this duplication, it is recommended to replace the text in Rule 5.140 with “Unless covered by a rule in this Plan...”

956 PC7-424.103
957 PC7-422.18
958 PC7-430.39
959 PC7-207.24
960 PC7-343.45
961 PC7-312.39


**Condition (4) of Rule 5.168**

11.184. Federated Farmers\(^{963}\) support PC7 condition (4) of Rule 5.168 as notified. No other submissions were received on PC7 condition (4) of Rule 5.168.

11.185. The majority of submissions on Rule 5.168 are on the PC7 topic ‘Indigenous Freshwater Species Habitat’, and will be discussed in that section of this Section 42A Report. In addition, the Arowhenua and Te Rūnanga\(^{964}\) submission on Rule 5.168 seeking restrictions on activities within a Rock Art Management Area will be discussed in Part B of PC7 given that rock art is currently only mapped in Section 14 (OTOP) of the plan.

**Recommendation**

11.186. Delete the word “and” immediately after clause (b) in the definition of ‘defence against water’, but otherwise retain as notified.

11.187. Amend PC7 Rule 5.138 to reinstatement of the word “or” from clause (a) of the rule descriptor and delete “Council” from condition (3), as per Appendix E.

11.188. Amend the rule descriptor of Rule 5.140 from “Despite any other rule in this Plan” to “Unless covered by a rule in this Plan”.

11.189. Retain condition (4) of Rule 5.168 as notified.

\(^{963}\) PC7-430.59

\(^{964}\) PC7-424.112
Part 4: Submissions on Part B of PC7: OTOP

1. Executive summary

1.1. The provisions in PC7 for the OTOP sub-region have been developed to implement the outcomes of the community arrived at through the OTOP ZC process. Those community outcomes and preferences are set out in the ZIPA, and typically involved a careful weighing up of environmental, social, economic and social factors. Another feature of the OTOP part of PC7 is the complexity of the provisions and the various tables (labelled (a) to (zc)).

1.2. Several hundred submissions were lodged on this part of PC7, ranging from simple one-page submissions to some over a hundred pages long. Without wanting to over-simplify those submissions, there are many that seek fewer restrictions and a more flexible regime, many that seek maintenance of the ‘status quo’ and some that seek greater levels of restriction and management.

1.3. Many submissions focus on the surface water flow regimes, particularly that of the Opihi River system, and the associated Opuha dam. It is also clear that significant farming development has occurred in the sub-region, on the basis of water being available for irrigation. Changes to these flow regimes are included in PC7, but in recognition of the significant costs of adjustment, many of the changes of significance are delayed into the future.

1.4. For this Section 42A Report, recent Environment Court decisions – the Lindis decision and the Southland decision have identified that a greater focus on Te Mana o te Wai is required, and may require movement away from ZC outcomes. In particular the Southland decision has elaborated on the role of Te Mana o te Wai, and the pre-eminent importance of the health and mauri of water and waterbodies (The court found that, “as a matter of national significance, the health and wellbeing of water are to be placed at the forefront of discussion and decision-making”).

1.5. In reporting on the submissions, it is clear that if “the health and wellbeing of water are to be placed at the forefront of discussion and decision-making”, some different outcomes may eventuate. In response to this, some adjustments are recommended, with some identification of other changes, should the Hearing Panel wish to go further. Key changes recommended include:

- Substantial simplification of the OTOP provisions and tables;
- The introduction of effective partial restriction regimes sooner, to prevent flows being drawn below the minimum flow;
- Some shortening of timeframes by which changes need to be made;
- Correction of apparent errors in some of the Opihi flow regime tables;
- Removal of proposed additional allocation blocks, such as the “T” groundwater allocation and the Temuka “C” and “Mahinga kai” blocks;
- Substantial simplification of the farming and HNCA provisions; and
- Increased protection of RAMAs.

---

965 The primary author for Part 4 of this report is Matthew McCallum-Clark, with other authors noted where relevant. All recommendations on plan provisions are made by Matthew McCallum-Clark.

2. Section – Introduction/Overview

Introduction

2.1. This section of the Section 42A Report discusses submissions made on the introductory text and Figure 14.1 within Section 14 of the CLWRP. Part B of PC7 includes an amended Figure 14.1 which delineates the OTOP sub-region. As a result of the proposed amendment to Figure 14.1, Figure 12.1 within Section 12 of the CLWRP is also proposed to be changed. Submissions made in relation to the proposed amendments to Figure 12.1 are also assessed in this section.

Submissions & Analysis

2.2. Arowhenua and Te Rūnanga opposes Figure 14.1 and seeks amendments to the boundary of the Rangitata River are deleted and the existing figure in Section 14 be retained. Arowhenua and Te Rūnanga is concerned the proposed amendment to Figure 14.1 could have serious consequences on the water quality of the Rangitata River.

2.3. Pye Group and Forest & Bird oppose Figure 12.1 and seek the existing figure in Section 12 be retained.

2.4. We understand the purpose for the change in boundaries represented in Figure 14.1 is to accurately reflect the boundary of the OTOP sub-region and boundary of the Central Canterbury Alpine Rivers sub-region. Given this, we do not consider any further amendment to the boundary of the OTOP sub-region is required.

2.5. Timaru DC seeks additional introductory wording is inserted into PC7 to provide commentary on the importance of community drinking water and community drinking water supplies in the OTOP sub-region. The following wording is proposed by Timaru DC:

Community Water Supplies

Timaru District Council has community water supplies sourced from Temuka River in addition to the Pareora and Ophi Rivers, and from shallow groundwater (Orari Back Road near Geraldine; Orari Station Road near Geraldine; a spring near Peel Forest township; near Salesyard Bridge; and Mill Road at Seadown). These community water supplies are located within the Temuka, Ophi and Pareora Freshwater Management Units. In regard to the Orari Freshwater Management Unit, Timaru District Council currently takes and distributes stock drinking-water for the agriculture industry and it may wish to take community water supplies from the area in the future. In regard to the Timaru Freshwater Management Unit, Timaru District Council does service the water supply for the community. However, in the future, Timaru District Council may wish to source groundwater from the Timaru Groundwater Allocation Zone for community water supply.

---

967 This section of the report was prepared by Hannah Goslin and Matthew McCallum-Clark
968 PC7-424.43
969 PC7-352.25
970 PC7-472.113
971 PC7-292.42
972 Please note that staff of Incite (Ch-Ch) Ltd undertake some work for Timaru DC on their district plan review. Incite has not advised Timaru DC with respect to PC7 or the matters it addresses or had any input into Timaru DC’s submission.
2.6. We are cognisant of the intent behind the relief sought by Timaru DC, however we consider the importance of community water supplies is a region-wide matter, which is addressed in the region-wide objectives and policies of the CLWRP\(^\text{973}\). We do not consider the relief sought by Timaru DC will provide any value for plan users greater than that already provided in region-wide provisions and note that Timaru DC is not the only community water supplier in the OTOP sub-region. Given this, we recommend the rejection of this submission point.

2.7. A Brown\(^\text{974}\) and the Orari River Protection Group\(^\text{975}\) seeks the ICMP for the Orari River be included in the CLWRP. We note that the Orari ICMP is referred to in an introductory paragraph of Section 14 and is proposed to be struck out as a result of proposed PC7. The ZIPA also refers to this ICMP as the ‘Orari River Catchment Management Strategy 2008’, it is highlighted in the ZIPA that the Zone Committee are supportive of the ongoing implementation of the Strategy. We understand the purpose of an ICMP is to identify issues and a range of management objectives for a particular catchment and typically does not hold any statutory weight. While we are cognisant of the benefits of ICMPs, the extent of ICMPs can be broad and extend beyond the functions of the Regional Council as prescribed by Section 30(1) of the RMA. On this basis, we recommend this submission point be rejected.

**Section 14.1A Orari-Temuka-Opihi-Pareora Definitions**

2.8. Section 14.1A contains the definitions for the OTOP sub-region. A number of submissions were received in relation to many of the proposed definitions. These are addressed in the relevant FMU sections of this Section 42A Report. One submission was received on the definitions in general, this submission point is analysed below.

**Submission and Analysis**

2.9. Ravensdown\(^\text{976}\) is concerned that PC7 introduces a range of OTOP specific terminology that is not used elsewhere in the CLWRP. To assist plan users, Ravensdown seeks consideration be given to changing or amending the definitions in Section 14.1A to ensure more alignment with terminology used throughout the CLWRP.

2.10. The architecture of Parts B and C of PC7 is similar to that of other sub-regional sections and is anticipated by Section 2 of the CLWRP. Where a tailored response is required to address issues specific to an FMU, FMU-specific provisions are proposed. Given this tailored approach, we consider sub-region specific definitions to be an appropriate approach to assist with plan implementation.

**Section 14.2A Iwi Management Plans that apply to the Orari-Temuka-Opihi-Pareora Sub-region**

2.11. Section 14.2A lists three IMPs that apply within the OTOP sub-region.

---

973 Specifically Objective 3.8A and policies 4.23, 4.23A and 4.23B
974 PC7-109.12
975 PC7-551.3
976 PC7-114.29
Submission and Analysis

2.12. Arowhenua and Te Rūnanga\(^{977}\) is concerned that IMPs may be updated or added during the life of the plan and seeks the list in Section 14.2A is replaced with a generic reference to a website where such information is kept up to date. We consider the list provided in Section 14.2A provides guidance to plan users, but is not intended to be an exhaustive list of what IMPs apply in the OTOP sub-region. Given this, if an existing IMP was amended or new IMP proposed, it not being listed in Section 14.2A, would not prohibit it from being relevant for consent processing purposes. In addition, any Omnibus plan process could ensure the lists do not get out of date. On this basis, we consider the list in Section 14.2A should be retained as notified.

\(^{977}\) PC7-424.3
3. **Freshwater Outcomes and Freshwater Management Units**

**Introduction**

3.1. This assessment of the ‘Outcomes’ on the OTOP sub-regional section of PC7 includes analysis of some introductory text, one policy and several tables. The tables contain the freshwater outcomes tables, based on region-wide Tables 1a and 1b, and a range of other tables with limits and targets. This OTOP section of the Section 42A Report has the following sub-sections:

- a. Outcomes (including outcome, limit and target tables)
- b. Cultural matters
- c. Water quantity – overall
- d. Water quantity – Orari
- e. Water quantity – Temuka
- f. Water quantity – Opahi
- g. Water quantity – Pareora
- h. Water quantity – groundwater
- i. Water quality – farming
- j. Water quality – High Nitrogen Concentration Areas
- k. Miscellaneous topics

3.2. We understand that the ZC considered the appropriateness of the region-wide outcomes tables, and considered them to be in part aspirational and largely appropriate for the OTOP sub-region. For other limits and targets, there appears to be a recognition that region-wide nutrient management provisions introduced under PC5 will go some way toward addressing existing issues, and a range of more modest limits and targets are introduced. As with other ZC processes, there is also a recognition that a range of other, non-regulatory, actions are being undertaken in the Zone, to help achieve the Outcomes.

3.3. In line with earlier descriptions of Te Mana o te Wai in Part 2 of this report, and the implications this may have, we have an overall level of concern that provisions and submissions seeking the status quo, or movement only to national bottom lines, may not adequately recognise Te Mana o te Wai. There are general submissions on this point, but few that provide specific relief in terms of different values to be inserted into the tables. While wholesale changes are not recommended at this stage, there is some information in existing reports where more ecologically-oriented alternatives may be recorded.

**Section 14.3 – Freshwater Outcomes**

3.4. DairyNZ supports the Freshwater Outcomes as notified. As this is the only submitter (in relation to the text at 14.3), we recommended it be retained.

---

978 The planning authors of this section are Hannah Goslin and Matthew McCallum-Clark and the technical authors are Shirley Hayward and Daniel Clark.


980 PC7-357.47
FMU Policy

3.5. Policy 14.4.1 states:

Management of freshwater in the Orari-Temuka-Opihi-Pareora sub-region is achieved through the establishment of six Freshwater Management Units, and improvements in freshwater attained through the setting of, and managing to, water quality and quantity limits and targets for each area.

Submissions and Analysis

3.6. One submitter \[981\] supports the Policy and seeks that it is retained. Four other submitters \[982\] oppose the policy in part, and seek various wording or grammatical changes, generally in line with more substantive submission points on PC7. For example, Ravensdown \[983\] seeks provision for maintenance as well as improvement of water quality and quantity, and A Hendriks \[984\] seeks greater recognition of economic impacts.

3.7. While the submissions are generally on the detail of Policy 14.4.1, as set out in the Common Issues section relating to the drafting style of PC7, we note that this Policy largely is a statement of fact, either in terms of how the OTOP zone is managed, or of the requirements of the NPSFM. While no submission has sought that the Policy be deleted, we suggest that it is largely redundant, and that it ought to be deleted for the reasons set out in the Common Issues part of this Report, rather than adjusted.

Section 14.6.1 – Freshwater Outcomes, limits and targets

Introduction and Provisions

3.8. PC7 introduces freshwater water outcomes, limits and targets specific to the OTOP sub-region. The setting of outcomes, limits and targets is part of the implementation of the NPSFM and the CRPS. Policies A1 and A2 of the NPSFM require every regional council to set water quality objectives and limits, establish methods to avoid overallocation and to specify targets and implement methods to improve water quality where freshwater objectives are not being met. Similarly, Policy 7.3.6 of the CRPS requires that minimum water quality standards are established, taking into account specified matters, and that activities which may affect water quality are managed to maintain water quality at or above the standards set.

Outcomes

3.9. The CLWRP includes region-wide numeric freshwater outcomes in Table 1a (Freshwater outcomes for Canterbury Rivers) and Table 1b (Freshwater Outcomes for Canterbury Lakes). The region-wide outcomes are generic for all waterbodies in the Canterbury Region and are intended to at least maintain water quality until a collaborative process is undertaken to establish freshwater outcomes specific to each sub-region. Table 14(a) and Table 14(b) set out freshwater outcomes for rivers and lakes in the OTOP sub-region to be achieved by 2030.

\[981\] PC7-357.48
\[982\] Ravensdown (PC7-114.31), OWL (PC7-381.24), Federated Farmers (PC7-430.177), A Hendriks (PC7-495.2)
\[983\] PC7-114.31
\[984\] PC7-495.2
3.10. The CLWRP includes region-wide default water quality limits in Schedule 8. Part B of PC7 proposes water quality limits and targets specific to the OTOP sub-region. The limits and targets are reflective of current state and the progress required to achieve freshwater outcomes sought by the community by 2030. The water quality limit and target tables that form Part B of PC7 are as follows:

- Table 14(c) Water Quality Limits for Orari-Temuka-Opihi-Pareora Rivers;
- Table 14(d) Water Quality Targets for Orari-Temuka-Opihi-Pareora Rivers;
- Table 14(e) Water Quality Limits for Orari-Temuka-Opihi-Pareora Lakes;
- Table 14(f) Water Quality Targets for Orari-Temuka-Opihi-Pareora Lakes; and
- Table 14(g) Water Quality Limits and Targets for Orari-Temuka-Opihi-Pareora Groundwater.

3.11. Policy 4.2 of the CLWRP requires the discharges to rivers to meet the water quality limits set in Section 14 or region-wide limits in Schedule 8 (in the absence of sub-region specific limits). Policy 4.7 of the CLWRP directs resource consent applications for new or existing activities to not be granted, if the granting would cause a water quality limit set in Schedule 8 or a sub-regional section to be breached, or further over-allocation to occur. The water quality limits that form Table 14(c), Table 14(e) and Table 14(g) replace the region-wide water quality limits set out in Schedule 8 of the CLWRP. Water quality outcomes, limits and targets in Tables 14(a) to 14(g) are referred to in Policies 14.4.3(a), 14.4.17 and 14.4.20A of PC7.

3.12. The submissions relating to freshwater outcomes, limits and targets have been grouped into and considered according to the following topics:

- Submissions on Section 14.6;
- Submissions on Section 14.6.1;
- Submissions relating to multiple Tables in Section 14.6.1;
- Submissions on Table 14(a);
- Submissions on Table 14(b);
- Submissions on Table 14(c);
- Submissions on Table 14(d);
- Submissions on Table 14(e); and
- Submissions on Table 14(g).

Section 14.6

3.13. Section 14.6 of PC7 contains Tables 14(a) to 14(zc) which set out freshwater outcomes, limits, targets and environmental flow and allocation regimes that apply within the OTOP sub-region.

Submissions and Analysis

3.14. OWL\textsuperscript{985} seeks that the title of Section 14.6 is amended to include reference to ‘Environmental flow’ and ‘targets’. We consider the amendments proposed by OWL accurately capture the content of the tables and recommend the submission point be accepted.

\textsuperscript{985} PC7-381.148
Section 14.6.1

3.15. Section 14.6.1 of PC7 includes Tables 14(a) to (g) that set out freshwater outcomes limits and targets that apply in the OTOP sub-region.

Submissions and Analysis

3.16. M Hall\textsuperscript{986} and the Orari River Protection Group\textsuperscript{987} seeks the amendment of freshwater outcomes to ensure nutrient load limits and water quality standards recognise changes that may be imposed by central Government in future. While this may be helpful, we are of the view that the future direction is as-yet uncertain, and this report can only be drafted in the context of the present guidance and direction from central Government and on this basis, we recommend this submission point is rejected.

Submissions that relate to multiple Tables in Section 14.6.1

3.17. While several submissions were received on specific details contained in Tables 14(a) to 14(g), some similar submissions were received in relation to multiple tables and are addressed here.

3.18. Ballance\textsuperscript{988} considers the rationale and scientific basis used to derive freshwater outcomes, limits and targets in Tables 14(a), 14(b), 14(c), 14(e) and 14(f) are unclear. Given the reliance on these Tables, Ballance seeks the values are replaced with alternative values that provide a measurable environmental outcome in accordance with that sought for OTOP sub-region lakes or rivers. The submitter has not provided alternative values.

3.19. In relation to Tables 14(e) and 14(f), OWL\textsuperscript{989} seeks TP and Ammoniacal Nitrogen limits and the TN target for Lake Opuha are amended to reflect current state data and/or attribute states.

3.20. DOC\textsuperscript{990} considers the limits for Ammoniacal Nitrogen in Table 14(e) and targets for TP and TN in Table 14(f) for Waitarakao/Washdyke Lagoon are unlikely to result in the attainment of Freshwater Outcomes for lakes in Table 14(b). DOC seeks amendments to Tables 14(e) and 14(f) to set appropriate limits and targets to achieve the freshwater outcomes for Waitarakao/Washdyke Lagoon in Table 14(b).

Analysis

3.21. Ballance has raised similar submission points in relation to Tables 8(a) and 8(b) in Part C of PC7. In response to these points, we note that the numerical and narrative freshwater outcomes set in Tables 14(a) and 14(b) accords with the NPSFM and includes attributes and other indicators based on guidelines for protecting aquatic ecosystems and human health. Numeric values included in Tables 14(c), 14(e) and 14(f) are based on achieving the freshwater outcomes in Tables 14(a) and 14(b), maintaining current state where the outcomes are achieved and supporting community values established during the collaborative zone committee process.

\textsuperscript{986} PC7-444.4
\textsuperscript{987} PC7-551.14
\textsuperscript{988} PC7-441.39, PC7-441.40, PC7-441.41, PC7-441.43, PC7-441.44
\textsuperscript{989} PC7-381.95, PC7-381.96
\textsuperscript{990} PC7-160.100, PC7-160.101
3.22. Tables 14(e) and 14(f) set out water quality limits and targets for Lake Opuha and Waitarakao/Washdyke Lagoon. OWL and DOC have both submitted on Tables 14(e) and 14(f), in relation to TP and Ammoniacal Nitrogen attributes. OWL seeks the limits and targets be amended to reflect current state data, while DOC considers the attainment of limits and targets for these attributes is unlikely to result in the achievement of freshwater outcomes in Table 14(b). We consider the relief sought by OWL is already provided in Tables 14(e) and 14(f). As discussed in the Technical Report for surface water quality and ecology, freshwater limits for Lake Opuha set in Table 14(e) have been calculated as averages using five years of water quality data for Lake Opuha collected by OWL over the current state period (from 2011 to 2016) and this is consistent with more recent data. The TN target for Lake Opuha set in Table 14(f) has been based on data collected during the current state period, but also reflects the community’s desire for there to be no further deterioration of the TN attribute in Lake Opuha. The water quality target for TN is reflective of the B Band attribute state in accordance with Appendix 2 of the NPSFM, which is consistent with the other attributes for Lake Opuha. On this basis, we recommend the submission points made by OWL be rejected.

3.23. We agree that the Ammoniacal Nitrogen freshwater limit as proposed in Table 14(e) for Waitarakao/Washdyke Lagoon does not currently align with achieving the relevant freshwater outcomes in Table 14(b) as identified by DOC. We therefore recommend the Ammoniacal Nitrogen limits in Table 14(e) for Waitarakao/Washdyke Lagoon should be replaced with alternative limits that align with the NPSFM Attribute State B; that is an annual median of 0.24 mg/L and an annual maximum of 0.4 mg/L. In relation to Table 14(f) for Waitarakao/Washdyke Lagoon, we note that water quality targets are reflective of the National Bottom Line for TP and TN in Appendix 2 of the NPSFM, which is a significant improvement over current state concentrations for total nitrogen and total phosphorus. We also note that the current state chlorophyll a concentration falls into Attribute State A, despite current high nutrient concentrations, and consider improving the nutrient concentrations up to the national bottom lines will continue to support a low chlorophyll a biomass.

### Table 14(a) Freshwater Outcomes for Orari-Temuka-Opihi-Pareora Rivers to be achieved by 2030

3.24. Table 14(a) sets out a range of numerical and narrative Freshwater Outcomes for Rivers in the OTOP sub-region that are to be achieved by 2030. Strategic Policy 4.1 of the CLWRP requires rivers in the OTOP sub-region to meet freshwater outcomes set in Section 14 within specified timeframes.

#### Submissions

3.25. Seven submissions were received on Table 14(a). One submitter supports Table 14(a) and seeks it is retained.

3.26. OWL considers freshwater outcomes for the Opihi FMU have been determined in the absence of consideration for the current state of waterbodies in the Opihi FMU and instead based on the region-wide freshwater outcomes in Table 1(a) of the CLWRP. On this basis,

---


992 This analysis was authored by Shirley Hayward and Matthew McCallum-Clark.

993 DOC (PC7-160.97)

994 PC7-381.85
OWL is concerned that freshwater outcomes that apply in the Opihi FMU are ‘unnecessarily low’ and seeks that they are re-assessed and replaced with outcomes that reflect current states of NPSFM current attribute states for rivers with the specified river type.

3.27. OWL\textsuperscript{995} seeks clarification on whether Table 14(a) includes, or is intended to include, specific Periphyton Attribute outcomes for Spring-fed Lower Basin and Spring-fed Plains in the Opihi FMU, given these outcomes are also included for these River Types in the Orari and Temuka FMUs.

3.28. In addition to the specific changes sought to the content of Table 14(a), OWL\textsuperscript{996} also seeks a series of minor amendments to footnotes 2 and 3 and the addition of a new footnote related to Chlorophyll-a outcomes. Amendments sought can be summarised as follows:

- Re-numbering of footnote ‘2’ to become footnote ‘3’;
- Include a new footnote ‘2’ associated with the Chlorophyll-a column; and
- Re-numbering of footnote ‘3’ to become footnote ‘4’.

**Analysis**

3.29. Freshwater outcomes in Table 14(a) were based on the freshwater outcomes for Canterbury Rivers that apply region-wide in Table 1a, along with consideration of the extent to which they supported the community outcomes identified by the Zone Committee and ensuring alignment with the NPSFM. On this basis, we consider the relief sought by OWL is already provided in Table 14(a) and recommend this submission point be rejected. In response to OWL’s submission point seeking clarification of Periphyton Attributes for ‘Spring-fed Lower Basin’ and ‘Spring-fed Plains’ river types in the Opihi FMU, we can confirm that the attributes do apply in the Opihi FMU as shown on the electronic version of Part B of PC7.

3.30. We agree that some minor amendments to the footnotes of Table 14(a) are required as identified by OWL. We consider that Table 14(a) footnotes should reflect those in the region-wide freshwater outcome Table 1a of the CLWRP as amended in Part A of PC7. Accordingly, we agree with the relief sought to renumber footnote ‘2’ to become footnote ‘3’ and to insert a new footnote ‘3’ associated with the Chlorophyll-a attribute column. OWL has suggested wording for the new footnote ‘3’ which we understand means the same as footnote 2 of Table 1a however, to provide consistency for plan users, we recommend the proposed wording for footnote ‘3’ in Table 1(a) as recommended in Part 3 Section 2 of this Section 42A Report be adopted. We also recommend adopting the relief sought by OWL to renumber footnote ‘3’ to become footnote ‘4’ and the location of the superscript be amended to be alongside ‘Escherichia coli (E. coli)’ instead of ‘Median’\textsuperscript{997}.

**Recommendation**

3.31. That Table 14(a) be amended as per the marked-up version of PC7. The proposed amendments can be summarised as:

a. Re-numbering of footnote ‘2’ to become footnote ‘3’\textsuperscript{998}

\textsuperscript{995} PC7-381.86
\textsuperscript{996} PC7-381.82, PC7-381.83, PC7-381.84
\textsuperscript{997} This analysis was authored by Shirley Hayward, Hannah Goslin and Matthew McCallum-Clark.
\textsuperscript{998} PC7-381.82
b. Include a new footnote ‘2’ associated with the Chlorophyll-a column, this footnote is consistent with that included in Table 1(a) as amended in Part 3 Section 2 of this Section 42A Report.

c. Re-numbering of footnote ‘3’ to become footnote ‘4’ and re-location of superscript to be alongside ‘Escherichia coli (E. coli)’.

Table 14(b) Freshwater Outcomes for Orari-Temuka-Opihi-Pareora Lakes to be achieved by 2030

3.32. Similar to Table 14(a), Table 14(b) sets out a range of numerical and narrative Freshwater Outcomes for OTOP lakes that are to be achieved by 2030. Strategic Policy 4.1 of the CLWRP requires lakes in the OTOP sub-region to meet freshwater outcomes set in Section 14 within specified timeframes.

Submissions

3.33. Ten submissions were received on Table 14(b), one submitter seeks that Table 14(b) is retained as notified.

3.34. CDHB considers the maximum value for Cyanobacteria should reference the New Zealand Guidelines for Cyanobacteria in Recreational Fresh Waters. OWL seek several changes to the freshwater outcomes for Lake Opuha. The amendments proposed are largely based on investigations and advice provided to OWL by NIWA and other experts. The amendments proposed in relation to the freshwater outcomes sought for Lake Opuha can be summarised as follows:

- Deletion of the visual quality attribute due to difficulties determining the natural colour of an artificial lake;
- Replacement of Dissolved Oxygen parameters with 5 mg/L hypolimnion and 7 mg/L epilimnion based on advice obtained from NIWA;
- Insert additional footnotes to define how ‘Max Temperature’ and ‘Minimum Hypolimnion/Epilimnion’ will be determined. OWL proposes the temperature outcome to be based on 7-day rolling mean temperatures at 5 metre depth and the Dissolved Oxygen parameter to be based on 24-hour averaged measurements at a depth of 5 metres and 365.5 metre elevation. This amendment is proposed on the basis of both parameters being variable over time with strong diurnal variability and sub-hourly ‘noise’ related to currents in the lake and operation of the power station.
- Amend the units for Chlorophyll-a to µg/L (mg/m³) or alternatively divide current values by 1000. This amendment is sought on the basis of achieving consistency with existing data sets held by CRC and OWL.

---

999 PC7-381.83
1000 PC7-381.84
1001 DOC (PC7-160.98)
1002 PC7-347.20
1004 PC7-381.87, PC7-381.88, PC7-381.89, PC7-381.90, PC7-381.91, PC7-381.92
• Clarify the intended period of measurement for Chlorophyll-a and TLI outcomes in Table 14(b). This amendment is sought due to the extent of the available data record for these parameters.

**Analysis**

3.35. In response to CDHB, we acknowledge that the Cyanobacteria attribute in Table 14(b) is based on the MfE/Ministry of Health Cyanobacteria Guidelines CDHB seeks to reference in a footnote. However, we do not consider the inclusion of such a footnote would assist plan users during implementation of the CLWRP. We have identified some minor inconsistencies between different notified versions of the plan (i.e. between the PDF document and the online “e-plan”). We note the footnotes included in the PDF version are correct and ‘3’ should be included next to ‘SFRG’ to clarify the meaning of the SFRG acronym. Accordingly, we recommend the acceptance of this submission point.

3.36. OWL seeks several specific amendments to the freshwater outcomes for Lake Opuha. We note that the freshwater outcomes in Table 14(b) are largely consistent with the region-wide freshwater outcomes set in Table 1(b) of the CLWRP as amended in Part A of PC7. Given this, we do not agree with OWL’s proposed amendments to delete the visual quality attribute, replace Dissolved Oxygen parameters on the basis of advice from NIWA, or insert additional footnotes to define how various parameters will be determined. While Lake Opuha is an artificial lake, it is also a lake constructed by damming an alpine fed river. The impact of the construction and functioning of the lake on the Opuha River downstream of the dam has been significant. In particular, issues with the discharge of deoxygenated water and associated release of anoxia-related compounds has impacted on the health of the downstream river. Setting outcomes such as Dissolved Oxygen at levels that provide healthy conditions for aquatic ecosystems, rather than at the threshold of onset of adverse effects is consistent with the outcomes sought by the community for protecting and enhancing waterways.

3.37. In response to OWL’s submission seeking clarification of the intended period of measurements for Chlorophyll-a and TLI freshwater outcomes, we note that this kind of detail is generally not specified for similar attributes in other parts of the CLWRP, and therefore, we do not consider clarification of the intended period of measurements is required and recommend the rejection of these submission points.

3.38. We agree that the Chlorophyll-a attribute does require a correction to “mg/m³” as identified by OWL. The reasons for this correction are briefly discussed in the Omnibus (NPSFM) section of this Section 42A Report. On this basis, we recommend this submission point be accepted.  

**Recommendation**

3.39. That Table 14(b) is amended as per the attached ‘tracked changes’ version of PC7. The proposed amendments can be summarised as:

a. Correction to the measure for the Chlorophyll-a attribute to read “mg/m³”.

b. Inclusion of a ‘3’ next to ‘SFRG’.

---

1005 This analysis was authored by Shirley Hayward and Matthew McCallum-Clark.
1006 PC7-381.92
1007 PC7-347.20
Table 14(c) Water Quality Limits for Orari-Temuka-Opihi-Pareora Rivers

3.40. Table 14(c) sets out water quality limits for rivers in the OTOP sub-region.

Submissions

3.41. Six submissions were received on Table 14(c), one submitter\(^{1008}\) seeks that Table 14(c) is deleted in its entirety.

3.42. DOC\(^{1009}\) seeks that limits are set to allow freshwater outcomes to be achieved. Specifically, DOC is concerned that some DIN and DRP limits are not are not adequate to control nuisance periphyton, macrophyte or cyanobacteria growths. Similarly, OWL\(^{1010}\) considers that DIN and DRP limits do not appear to have any relationship with current state water quality monitoring data for rivers in the Opihi FMU. OWL seeks that the limits are amended to reflect current attribute states in the Draft National Policy Statement for Freshwater Management 2020.

3.43. DOC also raises concerns that there are no limits for DIN in some rivers and consider this approach may risk the attainment of freshwater outcomes for nuisance periphyton, macrophyte or cyanobacteria growth in these rivers. In terms of nitrate nitrogen, DOC considers that if there are high value or threatened species present, further reduction in nitrate nitrogen should be sought to protect these areas as proposed limits may jeopardise freshwater outcomes from being achieved and are unlikely to protect ecosystem health or mahinga kai values.

3.44. Pye Group\(^{1011}\) opposes the water quality limits for DIN and nitrate nitrogen specifically in the Ohapi Creek upstream of the Orari River Confluence. This concern is due to recent proposed changes to the NPSFM. Pye Group seeks DIN and nitrate nitrogen limits are reviewed and amended to an ‘achievable target’.

3.45. J Webster-Brown\(^ {1012}\) requests deletion of proposed nitrate nitrogen limits and seeks that they are replaced with values that are more consistent with ecosystem protection and improvement in water quality. A Brown\(^{1013}\) considers further protection of the Orari River is required and seeks new water quality limits are inserted into Table 14(c).

Analysis

3.46. The inclusion of DIN and DRP attributes are a requirement of the NPSFM. It is acknowledged in the Technical Report for surface water quality and ecology\(^{1014}\) that while there is limited data, periphyton biomass in the OTOP sub-region generally meets the relevant CLWRP freshwater outcomes set in Table 1a and aligns with the NPSFM attribute states appropriate for each river type. Given this, it is reasonable to assume that maintaining the current nutrient status will support the achievement of the freshwater outcomes for periphyton attributes in Table 14(a). To determine DIN and DRP limits, a five-year median calculated during the current state period from 2011 to 2016 was used. We do not agree with the submissions made by

\(^{1008}\) Forest & Bird (PC7-472.196)
\(^{1009}\) PC7-160.99
\(^{1010}\) PC7-381.94
\(^{1011}\) PC7-352.33
\(^{1012}\) PC7-559.8
\(^{1013}\) PC7-109.8
3.47. DOC also raises concerns that there are no limits set for DIN in some rivers. We note that this is largely the case for rivers classified as ‘Spring-fed Plains’ where nitrate nitrogen limits are set instead of DIN. This is addressed in greater detail in the Technical Report for surface water quality and ecology, but by way of summary, the approach taken when developing either nitrate nitrogen or DIN freshwater limits is based on whether the main issues being managed are plant biomass (particularly periphyton) or nitrate toxicity which is typically the case in spring-fed water bodies where nitrate rich groundwater is the dominant input. Accordingly, we do not consider freshwater limits for DIN are required where periphyton is not the dominant plant form, and plant biomass is primarily controlled by other factors. This is relevant for spring-fed plains water bodies in the OTOP sub-region and Washdyke Creek. Therefore, we recommend the rejection of this submission point.

3.48. Subject to overall comments on recognition of Te Mana o te Wai, we disagree with submission points seeking the deletion or amendment of freshwater quality limits to be more or less restrictive. As mentioned, freshwater limits are required to give effect to the NPSFM and strategic policies of the CLWRP. The limits set are based on current state and maintaining current state will support the achievement of freshwater outcomes. Accordingly, we recommend rejection of submission points made by Pye Group and J Webster-Brown.

3.49. In relation to the footnotes beneath Table 14(c), we note that there are some minor inconsistencies between different notified versions of the plan (i.e. between the PDF document and the online “e-plan”). We note that the footnotes included in the PDF version are correct and should be preceded with a “-”. The inclusion of the footnote clarifies how “-” in Table 14(c) is to be interpreted by plan users.

3.50. If the Hearings Panel wish to further refine the freshwater tables, we also suggest Tables 14(c) and 14(d) could be combined into one table that sets both limits and targets, consistent with Table 8-5.

Recommendation

3.51. That Table 14(c) be amended as per the marked-up version of PC7. The proposed amendments can be summarised as:

   a. Insert a “-” preceding footnote ‘2’.

Table 14(d) Water Quality Targets for Orari-Temuka-Opihi-Pareora Rivers

3.52. Table 14(d) sets out water quality targets for Rivers in the OTOP sub-region where the National Bottom Line set in Appendix 2 of the NPSFM is exceeded.

---

Submissions and Analysis

3.53. One submission supports Table 14(d) and seek it is retained. On this basis, we do not recommend changes to Table 14(d).

Recommendation

3.54. That Table 14(d) be retained as notified.

Table 14(e) Water Quality Limits for Orari-Temuka-Opipi-Pareora Lakes

3.55. Table 14(e) sets out water quality limits for lakes in the OTOP sub-region.

Submissions

3.56. Four submissions were received on Table 14(e), DairyNZ consider the Ammoniacal Nitrogen concentration for Lake Opuna is consistent with that for a pristine lake, rather than an artificial lake. Dairy NZ seeks that the limit be amended to reflect the 95% protection limit, rather than the 99% limit. Other submissions on Table 14(e) are addressed in the ‘Submissions that relate to multiple Tables in Section 14.6.1’ section of this Section 42A Report.

3.57. A Campbell is concerned about the poor quality of water exiting Lake Opuna. To improve water quality in the Opihi River, the submitter seeks the modification of the Opuna dam outlet to discharge only epilimnetic water into the lower river.

Analysis

3.58. As mentioned in earlier sections of this report, freshwater limits have been based on the best available data when current state analyses were completed during the 2011 to 2016 current state period. Given this, we do not consider the freshwater limits in Table 14(e) require replacement and recommend these submission points be rejected. We consider that the quality of water discharged from the dam, and its effects on the river are better managed by general water quality limits for the lake and the relevant discharge permit.

Recommendation

3.59. As detailed in the analysis above, we recommend the Ammoniacal Nitrogen limits in Table 14(e) for Waitarakao/Washdyke Lagoon be replaced with alternative limits as follows:
   a. An annual median of 0.25 mg/L; and
   b. An annual maximum of 0.4 mg/L.

Table 14(g) Water Quality Limits and Targets for Orari-Temuka-Opipi-Pareora Groundwater

3.60. Table 14(g) sets out water quality limits and targets for groundwater provinces in the OTOP sub-region. Groundwater Targets are set for areas identified as HNCAs.

---

1016 Ballance (PC7-441.42)
1017 PC7-357.65
1018 PC7-7.1
Submissions

3.61. Seven submissions were received on Table 14(g), one submission supports Table 14(g) and seek it is retained.

3.62. OWL raises concerns that the data which has been used to determine targets is not representative of the wider groundwater quality in each of the groundwater provinces. OWL seeks that the targets are amended to reflect the representative current state data and/or current attribute states.

3.63. J Webster-Brown considers the proposed nitrate nitrogen limits and targets are too high to constitute the protection of the drinking water resource for residents in the sub-region and seeks they are replaced with values that are more consistent with current knowledge regarding potential health effects of nitrate in drinking water. Similarly, A Brown seeks water quality standards are aligned with national standards for aquifers.

3.64. Rangitata Dairies submits that Section 14 or Table 14(g) requires amendment to include how compliance with groundwater limits and targets are to be assessed and progress towards achieving targets determined. In assessing compliance, Rangitata Dairies also considers any lag time and change in the activity also needs to be recognised and considered.

3.65. In determining progress towards groundwater quality targets in HNCA, Rangitata Dairies considers any effects on groundwater quality from the Fonterra wastewater discharge in the Rangitata Orton HNCA should be excluded from the effects arising from farming activities occurring within the HNCA.

Analysis

3.66. We do not support the relief sought by J Webster-Brown seeking lower nitrate nitrogen targets consistent with current knowledge regarding the effects of nitrate in drinking water or relief sought by A Brown seeking alignment with national standards. The maximum concentration value proposed in Table 14(g) is reflective of the DWSNZ MAV for nitrate nitrogen (being 11.3 mg/L) and the region-wide water quality limits for nitrate nitrogen contained in Schedule 8 of the CLWRP.

3.67. With respect to the relief sought by OWL in relation to water quality targets for groundwater, nitrate nitrogen targets are set for each of the three groundwater provinces which contain HNCA. To establish HNCA, an analysis of nitrate nitrogen trends during the 2009 to 2011 period was undertaken. The results of this analysis showed that an increasing trend in nitrate nitrogen was present in some wells within HNCA. Based on this and community values established during the collaborative zone committee process, targets for nitrate nitrogen were proposed for some groundwater provinces. As mentioned above, targets for nitrate nitrogen in Table 14(g) reflect the groundwater limits contained in Schedule 8 of the CLWRP. Accordingly, we recommend this submission point be rejected.

1019 DairyNZ (PC7-357.66)
1020 PC7-381.97
1021 PC7-559.9
1022 PC7-109.23
1023 PC7-316.8, PC7-316.10, PC7-316.11, PC7-316.13
3.68. In response to submission points raised by Rangitata Dairies, we do not consider Table 14(g) is an appropriate place to prescribe how progress towards the attainment of targets and limits will be measured. We consider Section 35 of the RMA may provide some relief to the concerns raised by Rangitata Dairies. At a high level, Section 35 requires local authorities to gather information and monitor the effectiveness and efficiency of policies, rules and other methods. Section 35(2A) of the RMA requires local authorities to compile and make available a review of monitoring results at intervals no longer than five-yearly. On this basis, we do not consider Section 14 of the CLWRP requires any additions to replicate the requirements of Section 35 of the RMA and we recommend these submission points be rejected.

3.69. Rangitata Dairies also seek that any effects on groundwater quality arising from the Fonterra wastewater discharge be excluded from measuring effects arising from farming activities within the Rangitata Orton HNCA. The NPSFM requires overall freshwater quality within a FMU to be maintained or improved. We do not consider the NPSFM provides the ability to exclude the contribution of one land use over another to the degradation of freshwater. Rather, we consider the NPSFM takes a holistic view of freshwater and requires all contributors to overallocation to maintain or improve water quality, and this is reflected in the policies of PC7 that require reductions from both farming and commercial/industrial activities in these areas.

3.70. For completeness, we note that Table 14(g) includes the following footnote:

Where a particular river currently meets a higher (better) attribute state than indicated in this table, or where no attribute state is specified, that river shall not deteriorate below its existing attribute state as established in 2018.

3.71. As noted above, there are some minor inconsistencies between the different notified versions of the plan (i.e. between the PDF document and the online “e-plan”). In this instance, the footnotes included in the “e-plan” version are correct and the footnote above does not relate to groundwater limits and targets set out in Table 14(g). Given this, we recommend the deletion of this footnote.

Recommendation

3.72. That Table 14(g) be amended as per the marked up version of PC7. The amendment can be summarised as:

a. Deletion of footnote ‘3’.
4. Cultural

Introduction and Provisions

4.1. The OTOP sub-region is within the takiwā of Te Rūnanga o Arowhenua and Te Rūnanga o Waihao. This chapter of the Section 42A Report discusses those provisions within Part B of PC7 that relate to the recognition and protection of culturally significant sites. The proposed provisions include:

- Policies 14.4.2, 14.4.3, 14.4.4, 14.4.5, 14.4.14, 14.4.33;
- the definitions and mapping of the ‘Rock Art Management Area’ and ‘Mātaitai Protection Zone’ and reference to these areas in Policies 14.4.16 and 14.4.17, Rules 14.5.17, 14.5.18, 14.5.19, 14.5.25A and 14.5.26 and Schedule 7 (FEPs);
- Rules 14.5.1, 14.5.2, 14.5.3

4.2. Policy 14.4.2 directs that the cultural importance of the OTOP sub-region to Ngāi Tahu is recognised and provided for by requiring resource consent applications for specified activities to “demonstrate how potential adverse effects of these activities on culturally significant sites will be avoided or mitigated”. The activities specified are farming land use activities, take and use of water, and discharge of contaminants. This policy is implemented through a range of rules in PC7.

4.3. Policy 14.4.3 is a broad policy that seeks that freshwater quality and quantity within the OTOP sub-region provides for an abundance of freshwater māhinga kai that are safe to gather, harvest and consume or use. This is to be achieved through four methods: achievement of the limits and targets in Tables 14(c) to 14(g); improvement of flows in hill-fed and spring-fed streams; reserving an allocation of water from the Temuka FMU for the “enhancement of māhinga kai and associated tangata whenua values” and requiring specified types of farming activities that include or directly adjoin a surface water body within the MPZ to operate at GMP and prepare FEPs.

4.4. Policy 14.4.4 directs that wāhi tapu, wāhi taonga and nohoanga in the OTOP sub-region are protected by, as a first priority, avoiding effects on these sites, and where avoidance is impracticable, minimised.

4.5. Policy 14.4.5 provides specific direction in relation to tuhituhi neherā (rock art), waipuna (springs) and freshwater mātaitai. In particular, it directs that RAMA and a MPZ are defined. This is implemented by these areas being spatially identified on the Planning Maps.

4.6. Policy 14.4.14 provides guidance for proposals that introduce water from outside any catchment, directing that the values, customs and culture of papatipu rūnanga are protected, by requiring proposals to include evidence of any consultation with rūnanga and how the proposal responds to matters raised, as well as requiring decision makers to have particular regard to the views of rūnanga.

4.7. Policy 14.3.33 directs that directs that the cultural importance of the Temuka FMU to Ngāi Tahu is recognised and provided for by reserving an allocation of surface water from the Temuka River for the enhancement of māhinga kai and associated tangata whenua values. This is implemented through Rules 14.5.1, 14.5.2 and 14.5.3, which apply to the taking and use of surface water for the purpose of māhinga kai enhancement.

This section authored by Matthew McCallum-Clark.
4.8. The submissions relating to the recognition and protection of culturally significant sites have been grouped into and considered according to the following topics:

- Submissions on the general direction on sites of cultural significance (Policies 14.4.2, 14.4.4 and 14.4.5)
- Cultural Allocation / Mahinga kai enhancement - Policies 14.4.3 and 14.4.33 and Rules 14.5.1, 14.5.2 and 14.5.3
- Submissions relating to the MPZ, including its identification and extent, as well as the provisions applying within the Zone
- Submissions relating to the RAMA, including its identification and extent as well as the provisions applying within the Area
- Out of Catchment Water - Policy 14.4.14

General direction on sites of cultural significance – Policies 14.4.2, 14.4.4, 14.4.5

4.9. This section of the Section 42A Report analyses submissions made in relation to Policies 14.4.2, 14.4.4 and 14.4.5 of Part B. Submissions on policies that more specifically relate to the RAMA and MPZ are dealt with in the sub-sections below that relate more specifically to those areas.

Submissions

4.10. Mackenzie DC is supportive of provisions that enable the protection of culturally significant sites. Fish & Game and J Richardson seek Policy 14.4.2 is retained as notified. Fish & Game supports the policy on the basis that it recognises the cultural importance of the OTOP sub-region to Ngāi Tahu and provides direction to ensure activities proposed under the RMA do not have adverse effects on culturally significant sites. Federated Farmers supports the policy in principle and seek its retention, on the proviso that “there is transparency about the definition, location and value of culturally significant sites, along with clear, consistent and cost-effective compliance processes.”

4.11. Fifteen submitters seek Policy 14.4.2 is amended to clarify the intended meaning of the words ‘culturally significant sites’. They state that it is unclear whether the “sites” are those referred to in Policies 14.4.3, 14.4.4 and 14.4.5, or if there are other sites. They consider that this requires clarification for both the regulatory authority as well as landowners, as in the absence of specific identification, land owners would have difficulty understanding how the adverse effects of their activities can be avoided or minimised.

---

1026 PC7-457.2
1027 Please note that staff of Incite (Ch-Ch) Ltd undertake some work for Mackenzie DC on their district plan review. Incite has not advised Mackenzie DC with respect to PC7 or the matters it addresses or had any input into Mackenzie DC’s submission.
1028 PC7-351.33
1029 PC7-65.30
1030 PC7-430.178
1031 For example; Ashwick Flat Dairy Farms (PC7-283.39), Barwoods Ltd (PC7-298.37), Cascade Creek Ltd (PC7-294.41), Mackenzie College (PC7-487.21), Te Ana Wai (Te Ngawai) Wai Water Users Group (PC7-68.28)
4.12. Orakipaoa Water Users\textsuperscript{1032}, TCWP\textsuperscript{1033}, TCG\textsuperscript{1034} and OWL\textsuperscript{1035} support the general principle of ensuring sites of cultural significance are appropriately recognised and protected, and for policies relating to this to be included in PC7. However, they state that it is unclear what purpose Policy 14.4.2 serves, given the more detailed focus of Policies 14.4.3, 14.4.4 and 14.4.5. To avoid duplication and for simplicity, they seek that Policy 14.4.2 is deleted. In the alternative, they seek that the meaning of ‘culturally significant sites’ and ‘culturally important sites’ is clarified within the policy, or a definition of such sites included in the CLWRP, along with an overlay in the planning maps identifying the sites covered by the policy. They raise concerns that without identification of the sites to which the policy applies, it will be difficult for landowners to identify measures to avoid or minimise effects of their activities. OWL also note that the reference to ‘culturally significant sites’ is not used elsewhere in the CLWRP, but the phrase ‘sites of significance to Ngāi Tahu’ is used in various matters of discretion. Similarly, Timaru DC\textsuperscript{1036} seeks amendments are made to ensure a consistent approach when referring to Ngāi Tahu values or sites of significance to Ngāi Tahu.

4.13. OWL\textsuperscript{1037} states that there will be difficulties with implementation of Policy 14.4.4, if the location of the sites referred to is not identified in PC7 within the planning maps or through a narrative. It considers that in absence of such details regarding the specified sites, it will be difficult for landowners to understand how they are to avoid or minimise effects of their activities. It is also concerned with the resourcing implications for both Papatipu Rūnanga and landowners, resulting from implementation of the policy in future consenting processes. It appears that the submitter does not seek any specific changes to Policy 14.4.4, but as noted above in relation to Policy 14.4.2, seek that a definition of “culturally significant sites”, supported by a new overlay of such sites in the planning maps, including wāhi tapu, wāhi taonga and nohoanga sites.

4.14. South Hilton Ltd\textsuperscript{1038} opposes Policy 14.4.2, stating that it is a vague statement that could mean anything, and seeks that Environment Canterbury recognise their “cultural [sic] rights to farm”.

4.15. Beef + Lamb\textsuperscript{1039} seeks, in relation to Policies 14.4.2, 14.4.5, and 14.4.17 that “appropriate cultural advisors” are provided at Environment Canterbury’s cost to land users who request such assistance in protecting culturally significant sites. It considers that neither land users nor Environment Canterbury are in a position to determine how a culturally significant site can be protected from adverse effects at a farm or paddock scale and that cultural advisors should be used to determine how culturally significant sites should best be managed.

4.16. Forest & Bird\textsuperscript{1040} seeks that Policy 14.4.2 is amended to remove reference to mitigation, thus requiring that applications demonstrate how potential adverse effects of the specified activities on culturally significant sites will be avoided. It considers that mitigation is uncertain in ensuring protection and that the avoidance of adverse effects is required to give effect to section 6(e) of the RMA.

\textsuperscript{1032} PC7-165.3, PC7-165.4, PC7-165.5, PC7-165.6, PC7-165.7, PC7-165.8, PC7-165.9, PC7-165.10, PC7-165.11
\textsuperscript{1033} PC7-318.11, PC7-318.73
\textsuperscript{1034} PC7-319.9, PC7-319.10, PC7-319.11, PC7-319.12, PC7-319.14, PC7-319.15
\textsuperscript{1035} PC7-381.25, PC7-381.155, PC7-381.156, PC7-381.157
\textsuperscript{1036} PC7-292.143
\textsuperscript{1037} PC7-381.27
\textsuperscript{1038} PC7-146.1
\textsuperscript{1039} PC7-214.106, PC7-214.111, PC7-214.120
\textsuperscript{1040} PC7-472.150
4.17. Arowhenua and Te Rūnanga\(^ {1041} \) also seeks that Policy 14.4.2 is amended so that effects on culturally significant sites are required to be avoided. It also considers the policy wording should be more directive, and therefore seeks the policy is deleted and replaced with the following:

*Any use of land for a farming activity, or to take and use water, or to discharge contaminants shall require a resource consent and shall demonstrate that adverse effects on culturally significant sites are avoided.*

4.18. Arowhenua and Te Rūnanga\(^ {1042} \) and J Richardson\(^ {1043} \) support Policy 14.4.4 and seek its retention. Federated Farmers\(^ {1044} \) supports the policy in principle and seeks its retention “providing it can be implemented in a practical and cost-effective manner.”

4.19. Beef + Lamb\(^ {1045} \) opposes the use of the term “avoid” within Policy 14.4.4, seeking that it is replaced with “a more appropriate term which would reflect the intent of the Plan Change”. It notes that avoid is a strong word that may have the effect of prohibiting activities and do not consider that this is the intent of PC7. Beef + Lamb make the same comment about every policy that uses the word ‘avoid’.

4.20. Five submitters support Policy 14.4.5 and seek its retention\(^ {1046} \). Federated Farmers\(^ {1047} \) also supports the policy, but on the proviso that “it can be implemented in a practical and cost-effective manner.” Reasons for support include support for the protection of the identified areas\(^ {1048} \), and because the extent of the cultural sites referred to in the policy are spatially defined.\(^ {1049} \) For the avoidance of doubt, some submissions seek changes to this policy, but as they relate specifically to the MPZ or RAMA, they are addressed in those sub-sections.

**Analysis**

4.21. Reflecting on the common themes in the submissions, it is clear that the submissions cover similar issues, but often from different perspectives.

4.22. Firstly, there are concerns about the identification of culturally significant sites, with some submissions suggesting they should be mapped or more precisely identified, particularly with respect to Policy 14.4.2. The identification of sites is a common issue in the CLWRP and other RMA plans. While we do not suggest that mapping in the CLWRP is an ideal solution, we note that there are a range of resources available for identification of sites, such as heritage, wāhi tapu and wāhi taonga listings in district plans, IMPs and archaeological authority listings. Nohoanga, Mātaitai Reserves and Statutory Acknowledgements are also shown in planning or other legal documents. Therefore, we consider the identification of sites of these kinds is reasonably straightforward.

---

\(^{1041}\) PC7-424.4

\(^{1042}\) PC7-424.5

\(^{1043}\) PC7-65.3

\(^{1044}\) PC7-430.181

\(^{1045}\) PC7-214.110

\(^{1046}\) DOC (PC7-160.80), Orakipoa Water Users (PC7-165.12), J Richardson (PC7-65.33), TCWP (PC7-318.27), TCGI (PC7-319.16)

\(^{1047}\) PC7-430.182

\(^{1048}\) DOC (PC7-160.80)

\(^{1049}\) For example; Orakipoa Water Users (PC7-165.12), TCWP (PC7-318.27), TCGI (PC7-319.16)
4.23. Like some submitters, we are unsure whether Policy 14.4.2 means that there are other kinds of sites that are not well specified that need to be protected, or whether this is an additional policy regarding the sites identified in Policies 14.4.3 to 14.4.5. We understand the concern of submitters regarding the lack of clarity about sites to which Policy 14.4.2 would apply, if indeed they are different. We recommend that should Policy 14.4.2 be referring to other kinds of sites, then these be identified, and if not, then the Policy would seem superfluous and can be deleted. We welcome input from Te Rūnanga o Arowhenua, to clarify what sites these policies are to focus on, if additional types of sites or values are to be addressed. This would then assist with clarification of the Policy, if it is to be retained.

4.24. For the specified kinds of sites, and to achieve the level of protection suggested in the policies, it is inevitable that some form of consultation will be required in order to ascertain the values and whether any mitigations are effective. We consider that this is a fairly normal course of events through a resource consent process, which is the responsibility of the applicant. No changes in response to submissions seeking changes to this Policy are recommended.

4.25. The second major issue is that some submissions seek a greater level of protection of culturally significant sites, including the use of an “avoid adverse effects” policy. We consider that the shift in the planning framework established in PC7 is significant, and is likely to drive an array of improved practices and management of culturally significant sites. We consider that avoiding adverse effects in all circumstances may be difficult and for this policy do not recommend such a stringent and inflexible policy position. However, in relation to the Beef + Lamb point, we do consider the word ‘avoid’ is appropriate in some circumstances and that there is no general view that it is inappropriate to use in PC7.

4.26. We note the wording changes suggested by Arowhenua and Te Rūnanga, and consider the shift in position sought is significant as it would require that any use of land for a farming activity, water take and use, or discharge of contaminants to obtain require consent, rather than only applying to activities that require resource consent. It does not appear that the submission goes on to seek that all such permitted activities (either already within the CLWRP, as they would apply to the OTOP sub-region, or within PC7) are changed so that consent is required in all cases. We do not support such a significant change in position for these activities.

Recommendation

4.27. That Policy 14.4.2 be deleted.

Cultural Allocation/Mahinga kai enhancement – Policies 14.4.3 and 14.4.33 and Rules 14.5.1, 14.5.2 and 14.5.3

4.28. Policy 14.4.3 seeks that freshwater quality and quantity within the OTOP sub-region provides for an abundance of freshwater mahinga kai that are safe to gather, harvest and consume or use, through four methods: achievement of the limits and targets in Tables 14(c) to 14(g); improvement of flows in hill-fed and spring-fed streams; reserving an allocation of water from the Temuka FMU for the “enhancement of mahinga kai and associated tangata whenua values” and requiring specified types of farming activities that include or directly adjoin a surface water body within the MPZ to operate at GMP and prepare FEPs. Submissions relating to the MPZ component of this policy are addressed in a separate section.
4.29. Policy 14.4.33 directs that the cultural importance of the Temuka FMU to Ngāi Tahu is recognised and provided for by reserving an allocation of surface water from the Temuka River for the enhancement of mahinga kai and associated tangata whenua values.

4.30. Rule 14.5.1 is a specific rule for the taking and use of use of surface water for the purposes of mahinga kai enhancement. Such an application, where it meets the three specified criteria is restricted discretionary. Two of the criteria are that the take is from the Temuka FMU only, and in total with all existing consented takes does not exceed the flow and allocation limits in Tables 14(i) - (l). Where either of these are not met, the take would be prohibited (proposed Rule 14.5.3). The third criterion is that the application includes a CIA, and a breach of this makes the activity non-complying (proposed Rule 14.5.2).

Submissions

4.31. Beef + Lamb\textsuperscript{1050} J Richardson\textsuperscript{1051} and Forest & Bird\textsuperscript{1052} support Policy 14.4.3. A McGregor\textsuperscript{1053} is supportive of the allocation of water for mahinga kai enhancement.

4.32. Fish & Game\textsuperscript{1054} seeks that clause (c) of Policy 14.4.3 is amended to explicitly refer to the reserved allocation of water as a “cultural” allocation. The submitter supports water quality and quantities that enable freshwater mahinga kai to be safely gathered, harvested and consumed, but note that the policy wording references an allocation of water reserved in accordance with Table 14(l) for the enhancement of mahinga kai, whereas Table 14(l) refers to a “cultural allocation”. They therefore seek that the terms are aligned to provide greater clarity. They\textsuperscript{1055} also support Policy 14.4.33, but seek that it is amended to explicitly refer to the reserved allocation of water as a “cultural” allocation, again, to reflect the terminology used elsewhere in the CLWRP and in Table 14(l).

4.33. Similarly, TCWP\textsuperscript{1056} and TCG\textsuperscript{1057} seek that clause (c) of Policy 14.4.3, Policy 14.4.33 and Tables 14(i) and 14(l) are amended to explicitly refer to the reserved allocation of water as a “Mahinga Kai Enhancement” allocation. They also seek that the term “Mahinga Kai Enhancement” is defined. They consider these changes necessary to “correctly” embed the reserved allocation of water for “mahinga kai values” into PC7 and to provide greater consistency in the terminology used in PC7 relating to cultural allocations.

4.34. Federated Farmers\textsuperscript{1058} considers that further discussion, consideration and clarification on the purpose of the mahinga kai enhancement allocation is needed, including what it is to be used for, how it is to be used and who can apply. In its view, it is necessary for other users and the wider community to understand and support the allocation. As such it seeks that clause (c) of Policy 14.4.3, Policy 14.4.33 and Rules 14.5.1, 14.5.2 and 14.5.3 are deleted until such discussion has been had and clarity provided. The submitter also seeks that the reference to “associated tangata whenua values” in clause (c) of Policy 14.4.3 is clarified/defined so that users of the plan know what it means and how to give effect to it.\textsuperscript{1059} Should the rules not be

\textsuperscript{1050} PC7-214.108
\textsuperscript{1051} PC7-65.31
\textsuperscript{1052} PC7-472.151
\textsuperscript{1053} PC7-98.6, PC7-98.10
\textsuperscript{1054} PC7-351.34
\textsuperscript{1055} PC7-351.50
\textsuperscript{1056} PC7-318.8, PC7-318.9, PC7-318.10, PC7-318.13, PC7-318.44
\textsuperscript{1057} PC7-319.6, PC7-319.7, PC7-319.8, PC7-319.13, PC7-319.44
\textsuperscript{1058} PC7-430.179, PC7-430.214, PC7-430.227, PC7-430.228, PC7-430.229
\textsuperscript{1059} PC7-341.1
deleted, Federated Farmers seeks that a further matter of discretion be added to Rule 14.5.1, to provide consideration to “the provisions of any relevant Water Conservation Order”.

4.35. Gibson Family Trust\textsuperscript{1060} opposes Policy 14.4.3 stating that the kai is currently safe to gather, harvest and consume. It is assumed that the Trust seeks deletion of Policy 14.4.3.

4.36. South Hilton Ltd\textsuperscript{1061} opposes Policy 14.4.3 in part, stating that it does not recognise the huge improvement in water flow and quality from the Opuha Dam. It seeks that Environment Canterbury recognise and state the improvements to water quality from the dam.

4.37. Gibson Family Trust\textsuperscript{1062} seek that Policy 14.4.33 is deleted, questioning why more water allocation is proposed when there are concerns about minimum flows.

4.38. Arowhenua and Te Rūnanga\textsuperscript{1063} seeks that Policy 14.4.33 is amended to state that any reductions in existing allocation are to be returned to the river in the first instance, to support restoration of flow and mahinga kai habitat, after which allowance shall be made to use allocation for ahi kā, mahinga kai and kaitiakitanga purposes. They consider that while the Te Umu Kaha/Temuka River is significantly overallocated, taking the proposed allocation of 100 L/s would be detrimental for Te Mana o te Wai. They consider that the allocation should be enabled only once the river is functioning well, with any initial gains in water quantity remaining in the river to support restoration of a healthy flow and habitat.

4.39. TCWP,\textsuperscript{1064} TCG\textsuperscript{1065} support Rules 14.5.1, 14.5.2 and 14.5.3, including that the allocation for mahinga kai enhancement is only accessed through a consenting process and subject to meeting the proposed allocation limits.

4.40. Arowhenua and Te Rūnanga\textsuperscript{1066} seeks that the activity status of Rule 14.5.1 is controlled, rather than restricted discretionary and that the requirement for a CIA is deleted. It seeks instead, that a report be provided that identifies how mahinga kai will be enhanced and water quality and quantity maintained and that engagement with Te Rūnanga o Arowhenua has occurred. While the submitter understands the intent for requiring a CIA, they consider that it is the wrong mechanism, and seek instead that the effects on mahinga kai enhancement are had regard to as well as engagement with Te Rūnanga o Arowhenua. In terms of the activity status, while they support addition of provisions that provide for mahinga kai enhancement, the submitter is concerned that it will be more difficult to undertake this type of activity than activities that have an adverse effect on the environment.

4.41. Arowhenua and Te Rūnanga\textsuperscript{1067} further seeks that where such a take and use does not meet the flow and allocation limit, it is a non-complying activity, rather than prohibited, as it considers that there should be the opportunity to consider situations where mahinga kai enhancement could result in an exceedance. It also seeks\textsuperscript{1068} that Rule 14.5.3 is amended so that the prohibited activity status only applies where the proposed take is from the Te Umu Kaha/Temuka River. While the submitter states that this protects this river from water takes,
no explicit reason appears to have been provided as to why it considers the prohibited activity status should be removed from other water bodies/FMUs outside the Temuka FMU.

**Analysis**

4.42. A number of submitters seek clarification or narrowing of the circumstances when a cultural allocation is appropriate, seeking that it be removed or other additional constraints be included. We note that the allocation has been explained fully in the technical reporting and the Section 32 Report and do not consider defining “mahinga kai enhancement” is necessary.

4.43. It is not clear exactly what Arowhenua and Te Rūnanga is seeking, as on the one hand, it is stated that the cultural allocation will not be taken until the river is in better condition/less overallocated, but on the other, it also seeks a more relaxed policy and rule framework. Overall, we are concerned that this allocation, while commencing in 2030, would appear to be exacerbating an already substantially overallocated Temuka River. In combination with the statement from Arowhenua and Te Rūnanga that the water would be left in the river (recognising this allocation status), we doubt whether there is any value in these provisions. At this point in time, we have recommended the provisions be deleted, alongside other mechanisms to hasten improvements to the Temuka River, but welcome comment from submitters on this.

4.44. If the Hearing Panel wish to retain the provisions, Arowhenua and Te Rūnanga has raised the specific issue of an application being accompanied by a “Cultural Impact Assessment”. We tend to agree that this could be deleted and the matter of discretion adjusted to focus on the extent of mahinga kai enhancement being achieved, and its benefits for Te Rūnanga o Arowhenua.

**Recommendation**

4.45. That Policy 14.4.3(c), Policy 14.4.33 and Rules 14.5.1, 14.5.2 and 14.5.3 be deleted.

**Mātaitai Protection Zone**

4.46. Part B of PC7 proposes a new MPZ. This is proposed to be spatially identified on the Planning Maps and defined by reference to the mapped area. The proposed MPZ encompasses the existing Opihi Mātaitai and Waitarakao Mātaitai Reserves. The term ‘Mātaitai Protection Zone’ is referred to in Policies 14.4.3(d), 14.4.5, 14.4.16 and 14.4.17(e). The term is also referred to in condition (6) of Rule 14.5.17 and condition (1) of Rule 14.5.25A. This section of the report addresses submissions made on these provisions that relate to the MPZ, as well as the Planning Maps which relate to the MPZ and to the definition for the MPZ, excepting submissions relating to stock exclusion (Policy 14.4.16 and Rule 14.5.25A), which are addressed in the Stock Exclusion section of the Section 42A Report.

4.47. Policy 14.4.5 provides specific direction in relation to tuhituhi neherā (rock art), waipuna (springs) and freshwater mātaitai. In particular, it directs that the MPZ is defined and that any application to use land for a farming activity, to take and use water, or to discharge contaminants, be required to assess the actual and potential effects of the proposal on freshwater mātaitai.

4.48. Policy 14.4.3 seek that freshwater quality and quantity within the OTOP sub-region provides for an abundance of freshwater mahinga kai that are safe to gather, harvest and consume or
use, through various directives. One of these (clause (d)) requires farming activities that include winter grazing or irrigation, and which include or directly adjoin a surface water body within the MPZ to operate at GMP and prepare FEPs.

4.49. Policy 14.4.17 falls under the ‘Nutrient Management’ policy suite. It directs that water quality outcomes, limits and targets in the OTOP sub-region are achieved by requiring a number of matters. Of relevance to this topic, clause (e) requires “farming activities with irrigation and/or winter grazing within the Mātaitai Protection Zone and that adjoin a surface water body, to demonstrate through their FEP how active management of the loss of phosphorous, sediment and microbial contaminants to water will be achieved”.

4.50. Rule 14.5.17, which is a permitted activity rule for the use of land for a farming activity on properties greater than 10 ha in area, includes a condition (6) that the activity does not include irrigation or winter grazing, on those parts of the property within the MPZ, where any part of the property is located within the MPZ and the property includes or directly adjoins any river or coastal lake. Where this condition is not met, the activity becomes a controlled activity (subject to various conditions) under Rule 14.5.18.

Submissions

4.51. HortNZ\footnote{PC7-356.71, PC7-356.72} supports the proposed MPZ, as it supports the recognition and consideration of Ngāi Tahu values within the CLWRP, noting that Māori values and opportunities for Māori farming are important to them. Synlait\footnote{For example; PC7-188.32, PC7-188.33, PC7-188.35.} supports the policies and rule that provide greater protection to water quality in the MPZ, specifically Policy 14.4.3(d), 14.4.5(b), 14.4.16 and 14.4.17(e).

4.52. Ten submitters\footnote{For example; Tronnoco Farming Co Ltd (PC7-210.1), Seaforth Farms Ltd (PC7-253.23), D & D Cotter (PC7-284.1), Phillips Farming Ltd (PC7-364.1), Waipopo Farm Ltd (PC7-375.1)} recognise and are supportive of the cultural importance of the identified catchment, but seek a clear explanation of the values that the MPZ is intended to recognise and protect. In particular, they refer to the explanatory text beneath the heading titled ‘Mātaitai & Taiapure’ in Section 1.3.1 of the CLWRP and request consideration of whether this text may be an appropriate explanation for the zone that can be included within the definition for the MPZ. TCWP\footnote{PC7-318.4, PC7-318.15} & Orakipaoa Water Users\footnote{PC7-165.1} also more explicitly seek that PC7 is amended to include further clarification of the intended purpose of the MPZ either by way of an amended definition or policy.

4.53. Rural Advocacy Network\footnote{PC7-481.2, PC7-481.4} seeks the removal of the MPZ from the CLWRP in its entirety, through deletion of the MPZ map layer and all references to the MPZ in rules and policies. It notes that Mātaitai Reserves are gazetted under the Fisheries Act for the purpose of customary fishing and state that new reserves in North Canterbury and Kaikōura have “caused a huge outcry from affected landowners and legal action is imminent.” The submitter further states that as part of ongoing dialogue, landowners have been assured by Ministry\footnote{Which Ministry is not specified.} officials that these reserves only relate to the practise of customary fishing and do not affect land use activities. Rural Advocacy Network considers that the introduction of land use controls within

\footnote{PC7-356.71, PC7-356.72\footnote{For example; PC7-188.32, PC7-188.33, PC7-188.35.\footnote{For example; Tronnoco Farming Co Ltd (PC7-210.1), Seaforth Farms Ltd (PC7-253.23), D & D Cotter (PC7-284.1), Phillips Farming Ltd (PC7-364.1), Waipopo Farm Ltd (PC7-375.1)}}
a regional plan is highly inappropriate and likely to be counterproductive to maintaining good relationships with landowners and compromise achieving positive outcomes.

4.54. Arowhenua and Te Rūnanga supports provisions being included in Section 14 of the CLWRP to protect waipuna (springs) and mātaitai located within the OTOP sub-region, including the proposed MPZ around the existing Mātaitai Reserves in the sub-region. The submitter considers that this approach recognises the importance of protecting existing Mātaitai Reserve areas from land and water use activities. However, it seeks that this is extended to protect waipuna in the Ōrāri/Orari and Pureora/Pareora catchments, through amending the planning maps to include springs areas within these catchments (a map is provided in their submission) and amending the name of the Zone to the “Mātaitai and Waipuna Protection Zone”. As a consequence, the submitter also seeks changes to policies (14.4.3 and 14.4.5) which refer to the Zone, so that these also refer to the “Mātaitai and Waipuna Protection Zone”.

4.55. Federated Farmers seeks that a number of clauses in various provisions that refer to the MPZ are deleted, until there is further discussion, education and consideration about the MPZ, including what it is, its legal status and its purpose, stating that it is crucial that other water users and the wider community understand and support the zone. It states that there has been no evidence-based justification for the Mātaitai Reserves to extend over and constrain the use of so much land, and it questions the need for the size of the area covered by the MPZ. If the clauses are not deleted, the submitter seeks that the MPZ is confined to those waterways identified and gazetted under the Fisheries (South Island Customary Fishing) Regulations 1999. For completeness it is noted that Beef + Lamb, by reference to the submission of Federated Farmers, seeks the same changes to the “Mātatai conditions and planning map”.

4.56. In relation to clause (d) of Policy 14.4.3, Bonifacio Family Trust seeks clarity over what is meant by winter grazing and why it is included in the policy. It also states that this clause appears to contradict Rule 14.5.18, as the policy only requires an audited FEP within the MPZ, whereas under the Rule, a consent is also required for within the MPZ for certain activities. The submitter seeks that the policy is amended to make it clear what restrictions apply within the MPZ.

4.57. Arowhenua and Te Rūnanga seeks that Rule 14.5.18 is amended so that it only applies when conditions (6) is not met, with a breach of condition (5) instead becoming a restricted discretionary activity under Rule 14.5.19.

4.58. OWL seeks that the wording of condition (6) is amended to better reflect the intention of the direction in Policy 14.4.17(e), which refers to “farming activities with irrigation and/or winter grazing within the Mātaitai Protection Zone and that adjoin a surface water body...” Therefore, they seek the condition reads “There is no irrigation or winter grazing on any part of the property located within the Mātaitai Protection Zone that adjoins any river or coastal lake.”
4.59. Bonifacio Family Trust\(^{1083}\) opposes the requirement for resource consent to be obtained, under Rule 14.5.18, when a property is located within the MPZ. It considers that properties within the MPZ should be treated the same as others, in terms of the permitted activity status afforded under Rule 14.5.17, as the submitter considers that the CLWRP is aimed at achieving the same outcomes within and outside of the MPZ, namely improved water quality, mahinga kai and biodiversity outcomes. It also notes the costs associated with obtaining resource consent and auditing FEPs, which could be instead spent on improving the values the MPZ is seeking to achieve. The submitter also states that an audited FEP is a more sufficient tool to achieve the outcomes sought for the MPZ, than a full resource consent. As such, the Trust seeks that the requirement for resource consent for properties within the MPZ is removed and replaced with an alternative approach that requires collaboration between interested parties to identify issues and address priority areas.

4.60. Arowhenua and Te Rūnanga request additional conditions and matters of discretion for several rules, to apply within the OTOP sub-region, to provide greater protection for Mātaitai Reserve areas\(^{1084}\) mapped within the OTOP zone.

4.61. Arowhenua and Te Rūnanga\(^{1085}\) also seek that a new management objective is added in Schedule 7 (FEPs) applying to the OTOP sub-region section (11) to protect mātaitai and waipuna within the Mātaitai (and Waipuna) Protection Zone.

**Analysis**

4.62. The primary purpose of the MPZ is to protect areas of Waipuna (springs) that provide habitat for māhinga kai and are taonga (treasured/sacred) to Te Rūnanga o Arowhenua and Ngāi Tahu. Existing Mātaitai Reserves within the MPZ have been identified as a place of importance for customary food gathering and allows for the area to be managed by tangata tiaki/kaitiaki as nominated by Tangata Whenua. Following the establishment of a Mātaitai Reserve, commercial fishing is no longer permitted, unless recommended by the tangata tiaki/kaitiaki. We are of the view that the MPZ delineates an area of additional cultural sensitivity, generally associated with the Mātaitai Reserve, rather than an area that is solely based on protection of the Mātaitai Reserve. The naming of the MPZ may not be entirely helpful.

4.63. We consider the primary purpose of a definition is to assist in the implementation of a particular term. As the term ‘Mātaitai Protection Zone’ refers to a delineated area where some provisions proposed in Part B of PC7 have increased stringency, expanding the definition to include the values of the MPZ would provide limited assistance when processing applications for resource consent. If further clarity is required, we consider the policies related to the ‘Mātaitai Protection Zone’ such as Policies 14.4.3 and 14.4.5, or introductory text, are more appropriate locations to provide the clarity sought by some submitters, if the Hearing Panel was of a view that this is necessary.

4.64. Several submitters are concerned about, and opposed to, additional controls within the MPZ. In our experience, controls are in place in defined areas throughout Canterbury, and indeed nationally, in response to particular sensitivities of receiving environments. The submitters have raised general concerns, but do not appear to have provided reasons why the MPZ is not sensitive to the kinds of activities that are to be controlled. In our opinion, the controlled activity status gives certainty to applicants, while providing a modest level of protection and

---

\(^{1083}\) PC7-336.11, PC7-336.12

\(^{1084}\) PC7-424.166, PC7-424.168, PC7-424.171, PC7-424.173.

\(^{1085}\) PC7-424.127
oversight. We consider this is an appropriate balance. Therefore, we recommend these submission points be rejected. We consider that the likely method of implementation will be through FEPs, and recommend stronger linkages through minor additions to Schedule 7, with the addition of a new Management Area for the MPZ, including objectives and targets using a similar wording to those for rock art (tuhituhi neherā).

4.65. In relation to the Arowhenua and Te Rūnanga submission, Part B of PC7 introduces a new layer in the planning maps that identifies MPZs and RAMAs in Section 14 (OTOP) of the CLWRP. The architecture of the plan is such that where minor amendments to the sub-region rules are necessary to reflect particular resource management issues in a sub-region zone, these matters are achieved through provisions in the particular sub-region section. However, rock art and mātaitai reserves are located in a number of other areas in the Canterbury Region. Schedule 19 of the CLWRP lists the Ngāi Tahu Statutory Acknowledgment Areas including their purpose and how they relate to resource consent applications and Schedule 20 details Tōpuni (landscape features of special importance or value to Ngāi Tahu) as set out in the Ngāi Tahu Claims Settlement Act 1998. As the descriptions of places in these schedules are relatively general, we consider the general policy provisions and rules relating the protection of these areas to be sufficient.

4.66. PC7 proposes the new matter of discretion (Any adverse effects on Ngāi Tahu values or on sites of significance to Ngāi Tahu, including wāhi tapu and wāhi taonga) into seven of the region-wide rules listed by Arowhenua and Te Rūnanga. We consider that this new PC7 matter would provide for consideration of mātaitai reserves and rock art sites in a resource consent process without specifically stating MPZs and RAMAs. The six other regional rules listed by the submitter are not amended by PC7 and therefore not considered to be in scope. If the submitter does consider them to be in scope, it would be useful to understand how the activities managed by those rules could affect MPZs and RAMAs, so that evidence is before the Hearing Panel to enable a section 32AA assessment.

**Rock Art Management Area**

4.67. Part B of PC7 introduces a new RAMA to protect rock art (tuhituhi neherā) sites that are taonga (treasured/sacred) to Te Rūnanga o Arowhenua and Ngāi Tahu. This is proposed to be spatially identified on the Planning Maps, and defined by reference to the mapped area. The term ‘Rock Art Management Area’ is defined in Section 14.1A, referred to in Policy 14.4.5, Policy 14.4.17(f), condition (5) of Rule 14.5.17, condition (4) of Rule 14.5.26 and in the requirements for FEPs that apply specifically within OTOP (clause (5) of Section 11 to Schedule 7).

4.68. Policy 14.4.5 provides specific direction in relation to tuhituhi neherā (rock art), waipuna (springs) and freshwater mātaitai. In particular, it directs that the RAMA is defined and that any application to use land for a farming activity, to take and use water, or to discharge contaminants, be required to assess the actual and potential effects of the proposal on rock art.

4.69. Policy 14.4.17 falls under the ‘Nutrient Management’ policy suite. It directs that water quality outcomes, limits and targets in the OTOP sub-region are achieved by requiring a number of matters. Of relevance to this topic, clause (f) requires “farming activities with irrigation within the Rock Art Management Area to demonstrate through their FEP how adverse effects on tuhituhi neherā (rock art) sites will be minimised”.
4.70. Rule 14.5.17, which is a permitted activity rule for the use of land for a farming activity on properties greater than 10 ha in area, includes a condition (5) that the activity does not include irrigation, for those parts of the property located within the RAMA. Where this condition is not met, the activity becomes a controlled activity (subject to various conditions) under Rule 14.5.18.

4.71. Rule 14.5.26 is an existing rule (currently numbered 14.5.1) that relates to the use of land to store water in the Orari Catchment. Part B of PC7 proposes to add an additional permitted activity condition to the rule, to specify that the activity is not located within a RAMA. No submissions were received on this rule in relation to the addition of this condition.

4.72. Part B of PC7 also proposes to add additional requirements for FEPs into Schedule 7 that apply within the OTOP sub-region. Clause (5) of the additional requirements include an additional objective and targets relating to rock art (tuhitūhi neherā).

Submissions

4.73. Arowhenua and Te Rūnanga and I & H McMillan support the definition of ‘Rock Art Management Area’ as proposed and seek no changes. Similarly, HNZPT seeks that mapping layer for the RAMA is retained. HortNZ also supports the proposed RAMA, as it supports the recognition and consideration of Ngāi Tahu values within the CLWRP, noting that Māori values and opportunities for Māori farming are important to them.

4.74. HNZPT considers that internal consistency of plan provisions relating to rock art (tuhitūhi neherā) is necessary “to ensure there is a direct link to the effects threshold that is being applied to consents generated for farming activities in rock art management zones”. More specifically, it considers that references to minimisation or mitigation of adverse effects at the policy level does not align with the target to avoid adverse effects as specified in the FEP in terms of stock exclusion, irrigation and other farming practises. It considers that a consistent approach would be fairer to landowners, and if the intent is for farming activities to avoid adverse effects on rock art (tuhitūhi neherā), this should be a consistent direction throughout the provisions. In line with this, the submitter supports condition (5) of Rule 14.5.17, as it considers that irrigation activities can have the potential for significant adverse effects on rock art (tuhitūhi neherā). HNZPT also supports the use of FEPs to manage effects of farming on rock art (tuhitūhi neherā), but seeks that the matters of control in Rule 14.5.18 are amended to remove reference to rock art within matter of discretion (5) (which refers to methods to avoid or mitigate adverse effects on rock art, among others), with the following matter inserted: “Methods to avoid adverse effects on tuhitūhi neherā (rock art).” Similarly, HNZPT seeks that Policy 14.4.17(f) is amended to require farming activities within the RAMA to demonstrate, through FEPS, how adverse effects on rock art sites will be “avoided”, instead of “minimised”. It supports the additional matters added into Schedule 7 relating to rock art (tuhitūhi neherā), which refer to avoidance of effects. Forest & Bird also seeks that

---

1086 For completeness, it is noted that a submission on this rule relating to another matter is addressed in Part 4 Section 6 of this report.
1087 PC7-424.2
1088 PC7-568.33
1089 PC7-331.1
1090 PC7-356.71, PC7-356.72
1091 PC7-331.6
1092 PC7-331.4
1093 PC7-331.8
1094 PC7-472.163
clause (f) of Policy 14.4.17 is amended to require avoidance, rather than minimisation of effects.

4.75. Arowhenua and Te Rūnanga\textsuperscript{1095} seeks that condition (5) of Rule 14.5.17 is extended so that it applies to any discharge of contaminants or water, on the part of the property within the RAMA, not just to irrigation. It also seeks\textsuperscript{1096} that where condition (5) is not met, the activity becomes a restricted discretionary activity under Rule 14.5.19 (rather than controlled under Rule 14.5.18). While not strictly limited to the OTOP section of PC7, Arowhenua and Te Rūnanga seek references to rock art protection be added to a wide range of rules in the region-wide rules of the CLWRP.\textsuperscript{1097} The submitter also seeks amendments associated with rock art “and the historical, ecological and Ngāi Tahu values associated with them” to Rules 5.19, 5.67, 5.94B, 5.114A, 5.115, 5.120, 5.128, 5.133, 5.146A, 5.171, 5.176, 5.180 and 5.186. Similarly, Ngā Rūnanga\textsuperscript{1098} also seek a new condition is added to Rule 5.189 that the activity does not occur within a RAMA.

4.76. Arowhenua and Te Rūnanga\textsuperscript{1099} seeks that reference to “tuhituhi neherā” is removed from various provisions, including the matters of discretion and matters of control in relevant rules and clause (5) of the additional requirements for OTOP in Schedule 7 (FEPs). This is suggested by Arowhenua and Te Rūnanga as being a minor amendment that ensure consistency with references used for the mapped areas.

4.77. Arowhenua and Te Rūnanga\textsuperscript{1100} also seeks a minor change to the wording of the targets proposed to be introduced into Schedule 7 (FEPs) relating to rock art (tuhituhi neherā), which requires that stock are excluded from any site so as to avoid damage to the art work and “surrounding area”, seeking that the latter term is replaced with reference to the values associated with these sites.

\textbf{Analysis}

4.78. We note that the majority of submissions on this topic are either in support of the provisions or seek increased protection for rock art sites. This transpires through submissions seeking the policy framework be strengthened to “avoid” adverse effects on rock art (tuhituhi neherā) sites, include protection of rock art (tuhituhi neherā) sites as conditions of additional rules, and to amend the activity status from controlled to restricted discretionary.

4.79. We recognise the significant cultural values associated with rock art (tuhituhi neherā) sites, their sensitivity to poor management and relative uniqueness. Without doubt, they are a finite resource. On this basis, we support a strengthening of the policy framework, and an increase in the activity status of activities that may affect the sites. However, given that the sites often occur on private land it is important that the rules protect the sites, but do not unnecessarily impinge on other activities that do not affect the sites. We are concerned that the Arowhenua and Te Rūnanga request for reference to protection of “values” in the rules is too uncertain.

\textsuperscript{1095}PC7-424.72
\textsuperscript{1096}PC7-424.73, PC7-424.74
\textsuperscript{1097}PC7-424.57, PC7-424.92, PC7-424.94, PC7-424.97, PC7-424.99, PC7-424.117, PC7-424.119.
\textsuperscript{1098}PC7-424.66
\textsuperscript{1099}For example; PC7-424.33, PC7-424.34, PC7-424.206, PC7-424.211, PC7-424.124
\textsuperscript{1100}PC7-424.124
4.80. We recommend minor changes to the Policy and Rule framework to accommodate stronger, but more focused, protection and recommend a continuation of the requirement to include any sites in FEPs.

4.81. We agree with the Arowhenua and Te Rūnanga request to delete the term “tuhituhi neherā”. Given this Māori term always occurs in association with the term “rock art”, there are no implications from the deletion.

4.82. While there is some overlap with submission points in the Omnibus part of this report, we do not support wholesale references to rock art protection in other rules through PC7. We do support some policy strengthening, but in the absence of mapping other areas of rock art outside of the OTOP sub-region, we consider that the general policy provisions and rules relating to the protection of Ngāi Tahu values and sites of cultural significance to be adequate.

Out of catchment water – Policy 14.4.14

4.83. Policy 14.4.14 provides guidance for proposals that introduce water from outside any catchment, directing that the values, customs and culture of papatipu rūnanga are protected, by requiring proposals to include evidence of any consultation with rūnanga and how the proposal responds to matters raised, as well as requiring decision makers to have particular regard to the views of rūnanga.

Submissions

4.84. Thirty-two submissions were received on Policy 14.4.14. Two submitters\(^\text{1101}\) request the deletion of the policy and one submitter supports the policy conditionally. Fish & Game\(^\text{1102}\) supports the Policy, stating that a policy directing recognition and protection of rūnanga values, customs and culture is appropriate. To further protect alpine rivers, the submitter seeks the addition of a new policy within Section 14 stating that “takes from surface water to introduce water from outside the catchment should only be considered where an environmental flow regime and allocation limits for the flow band from which water is sought is established to ensure that no adverse effects arise from further abstraction”.

4.85. A number of submitters\(^\text{1103}\) seek that the Policy wording is amended so that it applies to water from outside the OTOP sub-region, rather to water outside a catchment. They state that the meaning and scope of the word “catchment” is uncertain and that it is unclear whether it is intended to address water introduced from outside the sub-region (which they believe is the intent of the Policy), or movement of water between tributary catchment of larger catchments within the sub-region.

\(^{1101}\text{PC7-422.32, PC7-72.5}\)
\(^{1102}\text{PC7-351.37}\)
\(^{1103}\text{For example; Te Ana Wai (TeNgawai) Water Users Group (PC7-68.31), Upper Opihi-Opuha Catchment Group (PC7-238.35), TCWP (PC7-318.38), TCGI (PC7-319.35), OWL (PC7-381.44), Federated Farmers (PC7-430.193)\)
4.86. Arowhenua and Te Rūnanga\textsuperscript{1104} support the intent of the type of policy being included, but are concerned that the wording is not strong enough and that considered together with the range of other policies will result in economic variables trumping cultural and ecological concerns. They state "Arowhenua do not support bringing new water into the OTOP zone or mixing water between catchments within the OTOP zone." It seeks that the Policy is deleted and replaced with the following:

*For any proposal to introduce new water from outside a catchment it must:

(a) Avoid diminishing the mauri of the receiving water body and the source water body
(b) Show evidence of any consultation undertaken with Te Rūnanga o Ngāi Tahu and Papatipu Rūnanga
(c) Have particular regard to the values and customs of Te Rūnanga o Ngāi Tahu or Papatipu Rūnanga.*

4.87. Arowhenua and Te Rūnanga\textsuperscript{1105} further seeks a new rule non-complying activity rule is included in Section 14 for the take and use of surface water from a catchment for use within another catchment.

4.88. Genesis\textsuperscript{1106} seeks that the Policy is deleted and new provisions introduced that prohibit the use and discharge of out of catchment water sourced from water bodies in the upper Waitaki Catchment into the OTOP sub-region. No specific reason is provided for the deletion, but it is assumed, from the broader submission, that this relates to a concern that the activity contemplated by the Policy would have actual or potential adverse effects on the operation of the Tekapo Power Scheme.

4.89. A Midgley\textsuperscript{1107} also seeks deletion of the Policy, stating that “water from the alpine region will be used to increase food production in next generation”. The submitter considers that Ngāi Tahu should recognise that they are not the only New Zealanders and that every New Zealander has the right to mahinga kai.

4.90. Gibson Family Trust\textsuperscript{1108} seeks that new water is allowed, without restrictions.

4.91. To provide for Te Mana o te Wai, Forest & Bird\textsuperscript{1109} seeks that the Policy is amended from directing decision makers to have particular regard to any views expressed by Ngāi Tahu and papatipu rūnanga, to require that they “give effect to” the views.

4.92. Bonifacio Family Trust\textsuperscript{1110} considers that clause (b) of the Policy, which requires decision makers to have particular regard to any views expressed by rūnanga, is too open ended and ambiguous, enabling rūnanga to oppose any application without constraint. The Trust states that its irrigation consent application was opposed because the water was said to have ‘spiritual significance’ but that this was not qualified in any way. As such, the submitter seeks that more specific parameters are required around how the decisions of rūnanga are made in relation to application decisions.

\textsuperscript{1104} PC7-424.6
\textsuperscript{1105} PC7-424.37
\textsuperscript{1106} PC7-422.32, PC7-422.33
\textsuperscript{1107} PC7-72.5
\textsuperscript{1108} PC7-341.7
\textsuperscript{1109} PC7-472.158, PC7-472.159
\textsuperscript{1110} PC7-336.4
4.93. Fish & Game\textsuperscript{1111} considers takes from surface water to provide for out of catchment water should only considered where an environmental flow regime and allocation limits are established for that water body. To require this, Fish & Game seeks a new policy in Part B of PC7 as follows:

\textit{Policy 14.4.14A:}  
\textit{Takes from surface water to introduce water from outside the catchment should only be considered where an environmental flow regime and allocation limits for the flow band from which water is sought is established to ensure that no adverse effects arise from further abstraction.}

4.94. We consider the relief sought by Fish & Game is already provided by region-wide policies 4.55 and 4.56. On this basis, we do not consider the inclusion of such a policy is necessary in Part B of PC7.

\textit{Analysis}

4.95. The majority of submissions received on Policy 14.4.14 consider that there is uncertainty in relation to the intended meaning and scope of the term “catchment”. Many submitters presume the intent of Policy 14.4.14 is to address water introduced from outside the OTOP sub-region, however they consider the wording is uncertain and could also suggest that the policy seeks to manage the movement of water between the tributary catchments of larger catchments within the OTOP sub-region.

4.96. Some submitters request that the term “catchment” is replaced with “Orari-Temuka-Opihi-Pareora sub-region” or “Orari-Temuka-Opihi-Pareora Zone” to ensure there is greater certainty around the intended scope and application of Policy 14.4.14.

4.97. We note that the OTOP ZC recommended the plan change support out of catchment water being brought into the sub-region, provided that papatipu rūnanga are actively involved in the decision-making process, and the use of this water is prioritised over individual surface and groundwater sources. The ZC envisaged this new water being used to restore any potential reduction in reliability that may occur as a result of increased minimum flows, or to provide for new irrigation.

4.98. We consider that the reference to water being “brought into the zone” within the OTOP ZIPA implies that the original intent of the Policy was to enable, and manage the effects of, the introduction of additional water sourced from outside of the sub-region boundaries, rather than from different sub-catchments within the zone.

4.99. However, we note that Policy 14.4.14 sets out other matters to be considered in addition to those listed in region-wide Policy 4.55. Policy 4.55 includes matters to consider for any discharge of water resulting from moving water from one catchment or waterbody to another. It is unclear whether the intent of Policy 14.4.14 is to apply the matters listed in Policy 4.55 in the context of introducing water from outside of the sub-region, or whether it also seeks to manage the movement of water between individual catchments or waterbodies.

4.100. In any event, Policy 4.56 requires that where water is introduced from outside a catchment (whether or not from outside a zone), the additional surface water flows are not available for abstraction unless either a new or revised environmental flow and allocation regime is

\textsuperscript{1111} PC7-351.38
introduced through a plan change or the existing environmental flow and allocation regime has been developed in anticipation of the additional surface water flows.

4.101. Further, alternate scenarios relating to the introduction of additional water were not pursued as there was, and is currently still not, a reliable and certain proposal to bring out-of-catchment water into the OTOP sub-region.

4.102. We note that consensus was not reached on the ZIPA recommendation because concerns of Te Rūnanga o Arowhenua were not addressed. The introduction of water from outside the catchment was discussed as a potential option for the sub-region but was never adopted into the final flow and allocation regimes (which must occur in order for introduced water to be abstracted in accordance with Policy 4.56).

4.103. Overall, if out of catchment water effectively cannot be brought in the OTOP sub-region and discharged to a waterbody without another plan change, we doubt the value of this Policy, over the guidance already provided by Policies 4.55 and 4.56, with the exception of focussing on the views of tangata whenua. Amendments to the policy to focus on this, in addition to the matters in Policy 4.55, are recommended.
5. **Quantity**

**Context**

5.1. Water in lakes, rivers, streams and other surface water bodies in the OTOP sub-region, and much of South Canterbury, experiences high demand from users. Annual rainfall is often highly seasonal, with dry summers and variable rainfall from year to year. In the longer-term climate change is likely to exacerbate this situation. Much of the OTOP sub-region is also characterised by a strong agricultural sector. Given the climatic conditions, there is a resulting high reliance on abstracted water and irrigation infrastructure. This includes significant investment in on-farm irrigation infrastructure, as well as a number of different irrigation schemes and the large-scale storage of water in the Opuha Dam. Given this strong agricultural sector, with relatively high levels of investment in irrigation infrastructure, changes to the water allocation regimes are more difficult, as there is likely to be reduced profitability and risk of stranded capital and the personal and community stress that follows.

5.2. Bearing in mind these constraints, the ZC debated the issues at considerable length and arrived at a position that the ZC, albeit not unanimously, considered was an appropriate amount of change and at a pace that the community could support. In some areas, particularly where there had been a relatively recent planning regime, such as Pareora, more or less the status quo was maintained. In most other areas there is a two or three step change envisaged with the latter steps providing the most significant change in the years from 2030 to 2035. Overall, the extent of change, even by 2035, is relatively modest for many areas of the sub-region. Another characteristic of the flow regimes appears to be a relatively high level of complexity. This is in part through recording flow regime changes to occur in future decades, as well as relatively high levels of complexity in the regimes themselves.

5.3. As has been identified in the Common Issues section of this report, some submitters have raised the question of whether the flow regimes recognise Te Mana o te Wai. In some respects, it appears difficult to reconcile the ZC outcome with recent caselaw on the position that Te Mana o te Wai should take in the discussion and decision-making process. In our opinion this is particularly evident in the surface water flow regimes developed by the Zone Committee. We expect that submitters will raise these issues in significantly more detail in their evidence. In drafting this section of the report, we recognise that placing the health of the waterbodies at the forefront of decision-making is likely to lead to a different outcome to that arrived at by the Zone Committee.\(^\text{1113}\)

5.4. With respect to surface water flows, a simple approach that would likely protect the health of waterbodies would be to set the minimum flow near to MALF, to have a single allocation block of no more than 30% of MALF, and a partial restriction regime that prevents flows being drawn below the minimum flow. In considering the flow regimes in PC7 for the OTOP sub-region, it is acknowledged that by 2030 to 2035 there will be improvements in the flow regime, particularly for the Temuka River, but there is still a considerable delay to a flow regime that would protect the health of waterbodies and recognise Te Mana o te Wai.

5.5. Examples in the notified flow regimes include minimum flows that are considerably below the MALF in most waterbodies over the summer months, allocation that is often well over 100%...
of MALF, B allocation blocks that overlap with A allocation blocks, the encouragement of takes to storage, and partial restriction regimes that will not prevent the flow being drawn below minimum flows.

5.6. We acknowledge that there is no silver bullet for this situation. One of the most effective changes that could be made in the short term is to require partial restrictions, universally applied, that are effective at protecting the minimum flow.\textsuperscript{1114} Even that would be very difficult for irrigators to implement, as the size of the allocation blocks and comparatively low minimum flows mean that their presently relatively reliable water would become quite unreliable. There is also a considerable transactional cost in completing a review process. We also note that the provisions of PC7 in relation to water quantity appear to take less of a long-term view than the PC7 provisions in relation to nutrient management. The Water quantity provisions appear to have one or two ‘steps’, to be implemented by 2035, whereas some nutrient management provisions extend considerably further into the future. We simply note this issue at this time – we do not consider that there is necessarily scope to resolve this, if indeed it needs resolution.

Structure of this section

5.7. This part of the report is broken into three sections. The first section addresses a range of general provisions in relation to the abstraction of both surface and groundwater. This includes provisions that apply to all abstractions, transfers and reviews. The second section addresses each of the surface water FMUs in turn. The third and final section addresses the groundwater provisions.

General Provisions

Introduction and Provisions

5.8. PC7 includes policies that apply to the OTOP sub-region, under the sub-headings of “Abstraction of Water”. Policies 14.4.6, 14.4.6A and 14.4.6B relate to surface water flows, while 14.4.7, 14.4.8 and 14.4.9 relate to groundwater. This section of the Section 42A Report addresses submissions on the surface water abstraction policies, while the groundwater policies are addressed in a separate section of this Section 42A Report that relates to groundwater abstraction. Policies 14.4.10, 14.4.11 and 14.4.12 are included under the sub-heading “Efficient Use of Water” and are also addressed in this section of the report.

5.9. Given the limited nature of issues raised on these policies, they have been addressed in the following three parts:

- Submissions that comment on or identify an issue across several of these policies
- Submissions relating to surface water abstraction
- Submissions relating to water use efficiency

Broad submissions across policies

5.10. Synlait\textsuperscript{1115} agrees with over-allocation being phased out, but considers, in response to Policies 14.4.6, 14.4.7, 14.4.8 and 14.4.9, that the provisions relating to abstractions should allow the transfer of water to industrial use, where that use results in a neutral or positive water balance, and seek that the policy direction is amended to encourage this. It\textsuperscript{1116} also submits, in relation to Policies 14.4.6-14.4.13, that the Plan should only introduce policies and rules that apply for the life of the plan, and that all water users are treated equally, with the methods to address water quantity issues applying equally to individuals as it does to irrigation companies. It therefore seeks that the policies and rules in the sub-regional chapter relate only to the period of time the Plan will be in place for, and applied equally to individual consent holders as it is to irrigation companies.

5.11. The majority of these submission points have been addressed with respect to the transfer provisions and no amendments to these policies are recommended. We do not consider that these submission points in relation to policies and rules that apply for the life of this plan, or disparity between individual consent holders and irrigation companies are relevant to these policies. No changes are recommended.

Surface Water Abstraction – Policies 14.4.6, 14.4.6A and 14.4.6B

5.12. Policy 14.4.6 requires surface water flows to be improved in the OTOP sub-region by ensuring that all consented abstractions comply with the applicable flow and allocation regimes set out in Tables 14(h) to 14(za).

5.13. Policy 14.4.6A directs that the grant of resource consents for applications to take surface water from the C Allocation limit in Table 14(k) is only considered in circumstances where: the applicant holds and will surrender a lawfully established surface water or stream depleting groundwater permit; the allocation limit will not be exceeded; and the proposed volume has been calculated based on records of past use.

5.14. Policy 14.4.6B provides for the taking of water for storage, in accordance with the minimum flows and partial restrictions for AA, BA, AN, BN and C takes, as a way of offsetting any decrease in reliability of supply, as a result of changes to the flow and allocation regimes in the Opihi and Temuka FMUs.

5.15. Timaru DC\textsuperscript{1117} supports all three policies, subject to relief sought to Policy 14.4.10 being granted. It is not clear what, if any, changes are sought to Policies 14.4.6, 14.4.6A and 14.4.6B if the relief sought to Policy 14.4.10 is not granted.

5.16. M Mulligan, I Kerse and N Kingston\textsuperscript{1118} and Federated Farmers\textsuperscript{1119} support Policy 14.4.6, subject to various relief sought to other provisions within PC7 being granted.

\textsuperscript{1115} PC7-188.9, PC7-188.13
\textsuperscript{1116} PC7-188.22, PC7-188.23, PC7-188.24, PC7-188.28, PC7-188.29, PC7-188.30
\textsuperscript{1117} PC7-292.54, PC7-292.55, PC7-292.56
\textsuperscript{1118} PC7-384.25
\textsuperscript{1119} PC7-430.183
5.17. OWL\textsuperscript{1120}, TCWP\textsuperscript{1121} and TCG\textsuperscript{1122} seek to extend Policy 14.4.6 so that the reference to consented abstractions includes surface water and stream depleting groundwater with a direct or high stream depletion effect, and abstraction permitted by Rule 5.111. Rule 5.111 provides a permitted activity status for the take and use of small quantities of water from a river, lake or artificial watercourse, where specified conditions are met, including limits on the rates of take and volume per day, and where the take is from a waterbody with a minimum flow section in Section 14, the take ceases when the flow is at or below the specified minimum flow level. They consider that as notified, Policy 14.4.6 infers that it is only consented takes that are required to comply with the specified environmental flow and allocation regimes, and therefore does not recognise the requirement in Rule 5.111 to meet the specified minimum flow. They also consider it appropriate to provide clarity that the abstractions referred to include those that Schedule 9 requires to be subject to the flow and allocation regime, namely groundwater takes with a direct or high degree (which is also greater than 5 L/s) of hydraulic connection.

5.18. We note that Rule 5.111 essentially enables water to be taken and volumes up to 100 m\textsuperscript{3} per day, per property. This essentially covers domestic supply, small-scale use, garden watering etc. There are comparable rules for permitted groundwater takes\textsuperscript{1123}. We do not consider it necessary to adjust the policy and rule framework to take account of Rule 5.111 as the CLWRP already provides for similar permitted activity groundwater takes.

5.19. TCWP\textsuperscript{1124} and TCG\textsuperscript{1125} are concerned that Policy 14.4.6A requires the C allocation block to be ‘swapped’ for existing surface water or surface depleting groundwater consents. They note that this was not the intention for the recommendation for the C allocation block by the working party, and accepted by the ZC. Instead, it was intended to allow for takes during high flow to be harvested, to assist with off-setting reductions in reliability of supply for existing A & B block abstractors resulting from other changes. They state that there is no justification to restrict access to the C Block allocation in the manner proposed. They seek the deletion of clause (c), which requires that the proposed volume has been calculated based on records of past use for the permit being surrendered, and that part of clause (a) that requires the existing permit to be surrendered. Gibson Family Trust\textsuperscript{1126} seeks the same changes, stating that PC7 will have serious financial implications.

5.20. Federated Farmers\textsuperscript{1127} considers that existing permits should not have to be surrendered, until it has been demonstrated that the C allocation take is “…successful in terms of its volume and rate of take” and therefore seek the following addition to clause (a): “and after it is demonstrated that the volume and rate of take are sufficient to match the consented volume and rate of take.” In terms of the requirement in clause (c) to propose a volume calculated by taking into account records of past use, the submitter notes that the year to year variation in climate, including rainfall, mean that actual use records do not necessarily reflect reasonable use. It seeks that clause (c) is amended so that the volume is instead based on reasonable use, as calculated under the methodologies set out in Schedule 10 of the CLWRP.

\textsuperscript{1120} PC7-381.29 
\textsuperscript{1121} PC7-318.28 
\textsuperscript{1122} PC7-319.17 
\textsuperscript{1123} Rule 5.113 and 5.114 
\textsuperscript{1124} PC7-318.76, PC7-318.29 
\textsuperscript{1125} PC7-319.18, PC7-319.19 
\textsuperscript{1126} PC7-341.12, PC7-341.13, PC7-341.14 
\textsuperscript{1127} PC7-430.184, PC7-430.322
5.21. Twenty-six submitters\textsuperscript{1128} support Policy 14.4.6B on the basis that enabling water storage is an appropriate mechanism to offset some of the reduced reliability of supply anticipated from the implementation of the proposed flow and allocation regime. Federated Farmers\textsuperscript{1129} also supports the policy, while noting concern that taking water to storage, which involves considerable cost, will not “substantially compensate” for the loss of reliability, because of the proposed minimum flow and partial restriction constraints.

5.22. OWL\textsuperscript{1130} supports Policy 14.4.6B but seeks changes to ensure consistency of the terminology used across PC7, by replacing the reference to A, B and C “takes” with “Permits” (as used in Tables 14(i) to (l)), and to “KIL” with “Kakahu”. For completeness it is noted that as drafted, the policy did not include reference to A, B or KIL takes. However, this is explicitly sought by Gibson Family Trust\textsuperscript{1131}, TCWP\textsuperscript{1132} and TCG\textsuperscript{1133} who partially support the policy but seek that storage is also enabled for A, B and C Permits in the Temuka FMU, as well as KIL takes. The submitters state that these appear to have been overlooked, but the ability to harvest within these blocks is essential to offset reduced reliability as a result of the proposed flow and allocation regime.

5.23. Bonifacio Family Trust\textsuperscript{1134} opposes Policy 14.4.6B, because they are opposed to any increase in minimum flows and any subsequent reduction in irrigation reliability. As such the Trust does not agree with the proposed offsetting to allow for storage. It notes the significant investment and ongoing costs associated with water storage in the form of the Opuha Dam. The submitter seeks that minimum flows are not increased without proper consideration of the economic impacts and un-justified environmental outcomes.

5.24. Forest & Bird\textsuperscript{1135} seeks that Policy 14.4.6B is deleted, stating that it is uncertain what it is trying to achieve and that it (along with other policies) misses the mark and will fail to provide for ecosystem health as required for Te Mana o te Wai. This is part of the submitter’s concern that ecosystem health is not central to PC7, and that the proposed approach to offset decreases in irrigation reliability by creating an additional allocation of water for abstraction and storage during high flows appears to “serve the status quo while risking further compromises to ecosystem health”.

5.25. We are mindful of the potential for conflict between these policies and the concept of Te Mana o te Wai. Offsetting reliability decreases, when these are essentially a result of high existing allocation and low minimum flows, with the ability to take more water does raise fundamental questions as to whether this policy suite is aligned with Te Mana o te Wai. We also note that the C Block is comparatively small, and only likely to benefit a small number of ‘early adopter’ consent holders, leaving many with no option but to adapt to the new flow regime.

5.26. Those submitters that seek these policies be further opened to a wider range of water takes or new water takes would seem to be exacerbating existing problems. Further, with the potentially significant delays until minimum flows and partial restrictions are implemented it

\textsuperscript{1128} For example; Fox Peak Station Ltd (PC7-166.2), TWUG (PC7-68.2), Beef + Lamb (PC7-214.112), Opihi Flow and Allocation Working Party (PC7-382.2), Upper Opihi-Opuha Catchment Group (PC7-238.3)
\textsuperscript{1129} PC7-430.185
\textsuperscript{1130} PC7-381.30
\textsuperscript{1131} PC7-341.3
\textsuperscript{1132} PC7-318.30
\textsuperscript{1133} PC7-319.20
\textsuperscript{1134} PC7-336.3
\textsuperscript{1135} PC7-472.152
is likely there would be an interim period where a further worsening of overallocation could occur if those wording changes were adopted, as takes from the A or B block would not be commensurably reduced.

5.27. Overall, we are concerned that the addition of the C allocation block is inconsistent with Te Mana o Te Wai, and is of potential benefit to only a small number of existing water users, and therefore recommend it be deleted from PC7.

Water Use Efficiency – Policies 14.4.10, 14.4.11 and 14.4.12

Policy 14.4.10

5.28. Policy 14.4.10 seeks to enable community water supply takes, by not requiring compliance with any flow and allocation regime/limits set out in Tables 14(h) to 14(zb), provided a Water Supply Strategy developed in accordance with Schedule 25 is in place and the water supply is managed so as to restrict the use of water during periods of low flow or low water levels.

5.29. Five submitters support this policy in full\textsuperscript{1136}, with the reasoning stated for this including support for priority being given to community water supplies, and given the importance of potable water to communities, the need for this to not be compromised.

5.30. Barker Fruit Processing Ltd\textsuperscript{1137}, TCWP\textsuperscript{1138} and TCG\textsuperscript{1139} also support the policy subject to changes being made to the definition of community water supply. The latter point is addressed elsewhere in this report, but, from the perspective of the Policy, the changes sought would mean the Policy would equally apply to the water take authorised by an existing consent and considered by the submitters to be a community water supply take, but not currently recognised as such in the Council’s Resource Consent Inventory.

5.31. Beef + Lamb\textsuperscript{1140} seeks that the Policy is extended to also apply to stock drinking water, stating that it is a priority one take and is not always exclusively supplied through community water supplies. We note that CLWRP has specific permitted activity water takes that are intended to provide for individual needs and an individual’s stock drinking water, in addition to the general protections in section 14(3)(b) of the RMA.

5.32. Timaru DC\textsuperscript{1141} also supports the Policy, on the basis that it helps to protect its interest in provision for community supplies. However, in relation to the Policy including reference to managing the water supply to restrict the use of water during periods of low flow or low water levels, note that this is a requirement of the Water Supply Strategy under Schedule 25, and therefore seeks that the policy amended to refer to the Water Supply Strategy being in placed and “implemented”, with duplication of the details of the Strategy’s requirements removed.

\textsuperscript{1136} CDHB (PC7-347.15), OWL (PC7-381.34), Federated Farmers (PC7-430.189), Mackenzie DC (PC7-457.4), I & H McMillan (PC7-568.34)
\textsuperscript{1137} PC7-391.1
\textsuperscript{1138} PC7-318.63
\textsuperscript{1139} PC7-319.29
\textsuperscript{1140} PC7-214.113
\textsuperscript{1141} PC7-292.60
5.33. Overall, we doubt whether Policy 14.4.10 adds anything that is not already expressed in region-wide Policy 4.49, which reads:

*Enable the taking of water for a community water supply by not requiring compliance with any minimum or residual flow or partial restriction conditions and the environmental flow and allocation regime or groundwater allocation limit provided a water supply strategy developed in accordance with Schedule 25 is in place and the water supply is so managed as to restrict the use of water from those supplies during periods of low flow or water levels.*

5.34. In line with the discussion in the Common Issues section of this report, we recommend that this Policy be deleted, and any submissions on it be rejected.

_Policy 14.4.11_

5.35. Policy 14.4.11 directs that for properties supplied by water from an irrigation scheme or principle water supplier, applications to take and use additional water may only be granted where the applicant demonstrates that water supplied from the scheme or supplier is used efficiently and to the fullest extent practicable, so as to minimise the abstraction of other water within the sub-region.

5.36. Six submitters\(^{1142}\) support the Policy and seek its retention. Timaru DC\(^{1143}\) supports the Policy, subject to relief sought to Policy 14.4.10 being granted. It is not clear what, if any, changes are sought to Policy 14.4.11, if Policy 14.4.10 is not amended as sought. Rangitata Dairies\(^{1144}\) supports the Policy but seek that, in its application, consideration is given to the availability and reliability of scheme water, and provision for scheme water does not necessarily mean the water is available to the farm. It states that another method to manage this would be to have a total seasonal allocation of water from both scheme and on-farm sources.

5.37. We note the general support in submissions for Policy 14.4.11. In response to the Rangitata Dairies’ submission point, we consider that the wording of the Policy is such that it focuses on use of scheme water in preference to other available water sources. We do not consider that the Policy restricts use of water from other sources when scheme water is unavailable. As we understand it, the Policy is intended to discourage the use of other water sources when scheme water is available, and consider this an appropriate policy response to over allocation.

_Policy 14.4.12_

5.38. Policy 14.4.12 directs that the volume and/or rate of water allocated to any replacement water permit for irrigation is restricted to a volume/rate that reflects past use, determined in accordance with Method 1 in Schedule 10. AA, BA and KIL permits are explicitly excluded from the application of the Policy.

5.39. Twenty-seven submitters\(^{1145}\) support the Policy and seek that it is retained. The main reason given for this support is that the Policy is consistent with ZIPA recommendations to exempt permits affiliated to OWL (AA, BA and KIL) from the policy. Fish & Game’s support relates to restricting the volume/rate of water to reflect past use assisting with phasing out over-

\(^{1142}\) For example; Federated Farmers (PC7-430.190), Gibson Family Trust (PC7-341.4), TCWP (PC7-318.34), GWS (PC7-295.1), TCG (PC7-319.31)

\(^{1143}\) PC7-292.61

\(^{1144}\) PC7-316.3, PC7-316.4

\(^{1145}\) For example; Fox Peak Station Ltd (PC7-166.3), TWUG (PC7-68.29), OWL (PC7-381.35), Fish & Game (PC7-351.35), TCWP (PC7-318.35), Rangitata Dairies (PC7-316.5)
allocation. Timaru DC\textsuperscript{1146} supports the Policy, subject to relief sought to Policy 14.4.10 being amended as sought. It is not clear what, if any, changes are sought to Policy 14.4.12 if the relief sought to the other provision is not granted.

5.40. However, four of the above submitters\textsuperscript{1147} also consider that the Policy does not go far enough to support existing consents, stating that it is imperative that consent holders are able to renew replacements consents due to their existing investment and reliance on irrigation for economic viability. As such, they seek the following additional Policy is included in the Plan:

\emph{In considering whether to grant or refuse applications for replacement of existing consents, the consent authority will:}

\begin{itemize}
\item[a.] consider whether all reasonable attempts to meet the efficiency expectations of this Section have been undertaken;
\item[b.] recognise the value of the investment of the existing consent holder; and
\item[c.] maintain the inclusion of the consent, if granted, in any allocation limits and priority bands on the water body concerned.
\end{itemize}

5.41. Federated Farmers\textsuperscript{1148} opposes Policy 14.4.12 as it disagrees with allocations based on the volume and rate of water according to past use. It considers that the determination of allocation should not be constrained to methodology based on previous use because previous use does not necessarily indicate need in a dry year. It considers the full range of methodologies in Schedule 10 should be available, and note that this is provided for in the CLWRP, stating that a sub-regional section should not constrain the methodologies available. As such it seeks that the Policy is amended to delete reference to \textit{“reflects past use”} and to refer to all methodologies in Schedule 10, not solely Method 1.

5.42. A Midgley\textsuperscript{1149} opposes the Policy, stating that past use can’t be based on 5 years of rainfall and that at least 12 years minimum should be considered. He seeks that over-allocation is based on a “last on first off” basis.

5.43. Forest & Bird\textsuperscript{1150} queries the exemption for OWL and Kakahu Irrigation Ltd, and whether all water permits should be treated equally. It is not clear what, if any changes it seeks to the Policy, although it is inferred that it does not agree with the exemption.

5.44. We understand, in line with the Fish & Game view, that restricting renewals to past use is an effective and efficient method to reduce overallocation in the sub-region, primarily through the removal of “paper allocations”. We understand that there have been a number of dry years recently, so if allocated water has been unused, it is largely expected to be genuinely surplus to requirements. In response to Federated Farmers, we note that all methods in Schedule 10 of the CLWRP constrain volumes to that required to meet demand in 9 out of 10 years. We also highlight that Method 1 of Schedule 10 does not prescribe the length of data required to determine the seasonal irrigation demand.

5.45. We do not consider that the policies in the sub-region need to go any further toward supporting the renewal of existing consents, as Section 124 of the RMA, the restricted discretionary activity status and other provisions of the CLWRP are considered to provide an adequate framework for renewals.

\textsuperscript{1146}PC7-292.62
\textsuperscript{1147}Fox Peak Station (PC7-166.4), OWL (PC7-381.36), TCWP (PC7-318.36), TCG (PC7-319.33)
\textsuperscript{1148}PC7-430.191
\textsuperscript{1149}PC7-72.3, PC7-72.13
\textsuperscript{1150}PC7-472.156
5.46. We note the suggestion from Forest & Bird that the various irrigation schemes be included in this Policy. However, as the ability to take this water is generally based on the ownership of (valuable) shares, we consider that the investment in those shares provides adequate incentive for consent holders to only hold consents and shares for as much water as they can efficiently use.

Transfers

**Introduction and Provisions**

5.47. The proposed transfer provisions in the OTOP sub-region are part of a wider sub-regional water quantity framework, aiming to reflect the freshwater outcomes sought by the community to assist in reducing over allocation and better manage effects of groundwater abstractions.

5.48. Managing transfers as generally intended by the OTOP provisions is a means to reduce over-allocation, by requiring the surrender of a proportion of the consented allocation, and allowing the remainder to be transferred. While this may be seen as a disincentive for transferring, transfers are often the only way to secure water allocation where catchments and zones are over-allocated, so the allocation of additional water is not possible.

5.49. Policy 14.4.13 is intended to assist with phasing out over-allocation of freshwater resources, in addition to region-wide Policy 4.50. Policy 4.50 allows for replacement of existing consents provided that rate of take and annual volume are no more than 90% of the previous consent, unless a sub-regional chapter provides its own methodology, and the use of water is demonstrated to be efficient, or more efficient with a reduction in adverse effects. Takes for community water supply and stock water are excluded from reductions.

5.50. Policy 14.4.13 requires that any permit to be transferred should demonstrate efficient previous use, that water is surrendered proportionate to the status of over-allocation in the catchment, up to 75%. As per Policy 4.50, community water supply and stock water are excluded from reductions, with the addition that transfers are prohibited in the Temuka FMU.

5.51. The Temuka FMU specific section includes Policy 14.4.32, which requires that site to site transfers of surface water and stream depleting groundwater consents is avoided, to assist in the achievement of allocation targets.

5.52. Policies 14.4.13 and 14.4.32 are implemented through Rules 14.5.12 and 14.5.13. Rule 14.5.12 provides for the transfer of a ground or surface water permit as a restricted discretionary activity, provided the conditions can be met. If a transfer proposal does not meet one of more of the conditions of Rule 14.5.12, it becomes prohibited under Rule 14.5.13.

**Submissions and Analysis**

5.53. The submissions on the transfer provisions have some significant areas of crossover, particularly between Policy 14.4.13, Policy 14.4.32 and Rule 14.5.12, as the provisions are similar. For the summarising of submissions, those common themes have been discussed first, followed by the remaining submissions that relate to each provision separately.

---

1151 This section on transfers was authored by Dani Korevaar and Matthew McCallum-Clark.
5.54. As there are a diverse range of submissions on these provisions, the summaries and their subsequent analyses have been grouped together.

**Identification of over-allocated catchments and zones**

5.55. For both Policy 14.4.13 and Rule 14.5.12, many submitters seek identification of catchments and zones that are over-allocated, to which these provisions would apply.

5.56. Eighteen\textsuperscript{152} submitters seek that Policy 14.4.13 is amended to include specific reference to the surface water catchments and groundwater zones that were over-allocated when PC7 was notified, with the same amendment sought to Rule 14.5.12\textsuperscript{153}. The submitters identify that it is unclear which catchments and zones this Policy and Rule will apply to. OWL\textsuperscript{154} recognises that to include this information may require additional analysis to be undertaken in order to have an accurate record of allocations across the sub-region.

5.57. M A Orchards et al\textsuperscript{155} seek that clause (b) of Policy 14.4.13 is deleted in its entirety, given the uncertainty about the robustness of the Resource Consent Inventory for PC7, and subsequent allocation status of the groundwater zones in the OTOP sub-region. The same submitter also seeks that clause (5)(b) of Rule 14.5.12 does not include the matching of the surrender percentage to the percentage the catchment or zone is over-allocated, for the same reason.

5.58. We agree with submitters that it would be useful to have identified in the Policy and Rule which catchments and zones are currently over-allocated. However, there is often some uncertainty about the allocation status of catchments and zones, with work currently being underway to resolve this. In addition, the status of catchments and zones as overallocated or not will likely change during the life of the plan, through the implementation of Policy 14.4.13, and general changes to existing consents. Overall, we consider that the provision of publicly available live allocations will provide more value and flexibility than naming overallocated catchments and zones (at the time of notification of PC7) in the Policy and Rule.

5.59. The work to determine accurate allocation counts may go some way in allaying the concerns of M A Orchards et al. This information, when available, will allow for certainty in the percentage reductions required by Policy 14.4.13 and Rule 14.5.12. Not having a link to the percentage of overallocation when determining surrender volumes would require a different methodology to calculate the surrender volume, or use of the same percentage across all FMUs. We consider that a variable percentage basis is a good option, provided the percentage is able to be readily calculated. However, those transferring first are likely to bear more cost than those in future years, when presumably less will need to be surrendered. Removing clause (b) in its entirety would mean no surrender requirement for transfers, which undermines the purpose of Policy 14.4.13 and the subsequent rules, and we therefore recommend it be retained.

---

\textsuperscript{152} For example; Annfield Dairies (PC7-373.22), M Hawkins (PC7-97.24), Monument Road Farm Ltd (PC7-370.40), OWL (PC7-381.37), TWUG (PC7-68.30)

\textsuperscript{153} For example; B Caird (PC7-175.50), Cascade Creek Ltd (PC7-294.50), Coles Farm (PC7-223.43), D Davies (PC7-168.42), Glenfield Farms (PC7-236.46), M Hawkins (PC7-97.29)

\textsuperscript{154} PC7-381.37, PC7-381.43

\textsuperscript{155} PC7-488.2
Exclusion of OWL shareholders

5.60. For both Policy 14.4.13 and Rule 14.5.12, many submitters request that the requirements to surrender water not be imposed on OWL shareholders.

5.61. Sixteen\textsuperscript{1156} submitters seek that Policy 14.4.13 is amended to exclude the surrender requirement on transfers of water permits affiliated to OWL, with that same amendment sought to Rule 14.5.12\textsuperscript{1157}. OWL\textsuperscript{1158} specifically requests that the exclusion for AA and BA permits is included in clause (b), although the submitter acknowledges that this may not be necessary if the over-allocated catchments and zones are specifically listed, and none of the catchments from which OWL source water are over-allocated. Submitters identify that the ZIPA recommendations included the exclusion of all water permits affiliated to OWL from any surrender requirement as a result of transfers.

5.62. Seventeen\textsuperscript{1159} submitters seek that Rule 14.5.12 is amended to clarify that transfers of permits from the tributaries to the Opuha and/or Opihi mainstems and Lake Opuha that are affiliated to OWL do not need a surrender requirement. Submitters consider that such transfers would take the pressure off tributary catchments, and would not result in any increase in the mainstem allocations, given the affiliation of these takes with OWL.

5.63. In addition to these rule amendments, OWL seeks one further change to Rule 14.5.12, related to OWL affiliated permits, to exclude affiliated permits from the requirement to use Method 1 of Schedule 10 when determining volumes to be transferred\textsuperscript{1160}.

5.64. Affiliated permits are identified as AA, BA and KIL, and defined in Section 14 as water permits where the consent holder holds shares in OWL, and in the case of KIL, is supplied water from the Kakahu Irrigation Scheme. The management of affiliated permits within the OWL scheme ensures that water is released from the Opuha Dam to allow for the ordered abstractions, while maintaining the minimum flow in the Opuha and Opihi Rivers.

5.65. The OTOP ZIPA recommendation alluded to by submitters (4.9.3 (IV)) refers to transfers of water to be based on actual usage records, to not affect reliability of existing users, and require a surrender in over-allocated zones, up to 75%. This recommendation is specifically excluded from applying to water permits affiliated to OWL.

5.66. We agree with submitters that affiliated permits should be treated differently to other water permit holders, given the management of the OWL scheme ensures flows in the river and allocations are not adversely affected by the takes. With this in mind, we recommend that affiliated permits be excluded from the Method 10 requirement, surrender requirement, and Temuka FMU limits.

5.67. The transfer of affiliated permits from tributaries to the Opuha and/or Opihi mainstems is limited by section 136(2)(b) of the RMA, which limits the site to site transfer of water, provided both sites are within the same catchment. While acknowledging that the transfers envisioned

\textsuperscript{1156} For example; Barwoods Ltd (PC7-298.39), D Davies (PC7-168.39), H Jackson (PC7-169.40), W O’Sullivan (PC7-240.39), TWUG (PC7- 68.41)

\textsuperscript{1157} For example; Annfield Dairies (PC7-373.28), Ashwick Flat Dairy Farms (PC7-283.49), Barwoods Ltd (PC7-298.46), B Caird (PC7-175.51), Cascade Creek Ltd (PC7-294.51), Coles Farm (PC7-223.45)

\textsuperscript{1158} PC7-381.42

\textsuperscript{1159} For example; D Davies (PC7-168.47), Glenfield Farm (PC7-236.50), M Hawkins (PC7-97.38), H Jackson (PC7-169.49), T Lambie (PC7-410.25)

\textsuperscript{1160} PC7-381.70
by the submitters would not have an adverse effect on the associated flows and allocations, we recommend that the existing “same catchment” condition be retained as notified in Rule 14.5.12, to ensure consistency with section 136 of the RMA.

**Exclusion of specific water uses**

5.68. For both Policy 14.4.13 and Rule 14.5.12, several submitters request that specific water uses are excluded from the surrender provisions and prohibition of transfers in the Temuka FMU.

5.69. Policy 14.4.13 and Rule 14.5.12 both provide for the exclusion of several water uses, including community water supply and stock water. Several submitters seek amendment or extensions of these exclusions, or additional uses to the excluded.

5.70. Timaru DC\(^{1161}\) and the CDHB\(^{1162}\) seek to exclude community drinking water supplies from clause (c) of Policy 14.4.13. CDHB is concerned that the exception for the Temuka FMU as notified may affect the ability of district council to continue with an uninterrupted supply of potable drinking water. Timaru DC seeks the same exclusion for Policy 14.4.32 and Rule 14.5.12.

5.71. Beef + Lamb\(^{1163}\) seeks that the exclusion under condition (5) of Rule 14.5.12 also includes stock, in addition to community water supply. It considers stock water to be a priority one take, and that the take of water for stock drinking water may not always fall within the permitted limits.

5.72. Policy 4.5 of the CLWRP identifies community drinking-water supplies and stock water as a first priority. The relief sought by Timaru DC and CDHB is consistent with this existing strategic policy direction, and we consider is a reasonable means to ensure community drinking water is able to be managed within the Temuka FMU via transfers if needed.

5.73. The exclusion sought for stock water under condition (5) of Rule 14.5.12 will provide consistency with clause (b) of Policy 14.4.13, which does not require the surrender of water for community supply or stock water takes.

5.74. Synlait has sought some exclusions from the surrender provisions for water used for industrial or trade purposes, where the use will result in a neutral or positive water balance. The matter has been discussed more broadly in relation to water takes as a whole.

**Temuka FMU – Timeframe for surrenders**

5.75. For both Policy 14.4.13, Policy 14.4.32 and Rules 14.5.12 and 14.5.13, several submitters seek clarity on the timeframe for the effective prohibition of transfers in the Temuka FMU.

5.76. The TCG\(^{1164}\) and TCWP\(^{1165}\) seek that clause (c) of Policy 14.4.13 is changed so that limits on the transfer of water permits from the Temuka FMU only apply until allocation limits within Tables 14(i) to (l) are met, or the transfer is to an irrigation scheme as part of a global

---

\(^{1161}\)PC7-292.131  
\(^{1162}\)PC7-347.16  
\(^{1163}\)PC7-214.141  
\(^{1164}\)PC7-319.34, PC7-319.41, PC7-319.49  
\(^{1165}\)PC7-318.37, PC7-318.41, PC7-318.49
consenting process for existing lawfully established takes in the Temuka FMU. The same change is sought for Policy 14.4.32 in relation to avoiding transfers only until the allocation limits are met and Rule 14.5.12.

5.77. Under Recommendation 5.2.2 (III) of the OTOP ZIPA, transfers of surface water and stream depleting groundwater permits are recommended to be prohibited in the Temuka FMU. The reasoning for this recommendation is to reduce over allocation of the Temuka River.

5.78. In our opinion, the prohibition of transfers in the Temuka FMU could be counter-productive, as the transfer framework in place elsewhere in the OTOP sub-region allows for over-allocation to be reduced by surrenders of substantial amounts of water. A prohibition on transfers could conceivably encourage water to be used inefficiently and will not reduce over-allocation unless those water permits expire. That said, the submissions are more limited to a potential time horizon on this Policy, which we support, as its outcome will have been met. In reality, it seems unlikely that the outcomes will be met prior to the 10-yearly review of these provisions.

5.79. We recommend two options regarding transfers in the Temuka FMU. The first option is to remove the restriction on transfers in the Temuka FMU in its entirety, acknowledging that transfers with surrenders are a means to reduce over-allocation. The second option is to retain the general prohibition of transfers in the Temuka FMU, but with the proviso that this prohibition is only valid until the allocation limits within Tables 14(i) to (l) are met, or the transfer is to an irrigation scheme as part of an aforementioned global consenting process.

**Policy 14.4.13 – remaining submissions**

5.80. Three submitters support Policy 14.4.13 as notified. Fish & Game recognises the need to achieve environmental flows and allocation limits, particularly in the Temuka FMU which is severely over-allocated.

5.81. Federated Farmers seeks that Policy 14.4.13 is deleted in its entirety, as it provides a disincentive to transfer water. Forest & Bird seeks that Policy 14.4.13 is deleted, unless the policy is amended to require a 100% surrender of transferred water.

5.82. We consider that the surrender of water when transferring is likely to be a disincentive, and likely to be considered by any consent holders looking at transfers as an option. The level of disincentive in the proposed regime is likely related to the percentage of surrender required (which is related to the amount of over-allocation). However, without a surrender provision, it is difficult to reduce over-allocation through the transfer process.

5.83. A Midgley seeks that the surrender of water is based on a last on, first off system, with those people who were allocated water last to be the first to surrender their allocation.

---

1166 These changes are related more so to policies 14.4.30 and 14.4.31.
1167 PC7-319.43, PC7-318.43
1168 PC7-295.22, PC7-319.59, PC7-318.56
1169 Beef + Lamb (PC7-214.114), Fish & Game (PC7-351.36), DOC (PC7-160.81)
1170 PC7-351.36
1171 PC7-430.192
1172 PC7-472.157
1173 PC7-72.4
5.84. We note that water allocations have previously been determined on a first in first served basis. While it is appreciated that the last on, first off order of surrender provides benefit to those who were early adopters for water permits, it creates problems of how to determine when water was first allocated if there are no set bands or allocation blocks within which water takes sit. Water permits are able to be transferred in name and location, replaced, renewed or changed, generally with the same or similar amount of water as was originally allocated. In the absence of allocation blocks, determining the initial date of allocation, and therefore those who were allocated water last, is likely to be difficult where insufficient historical information is available.

5.85. Gibson Family Trust\(^{1174}\) seeks that Policies 14.4.13 and 14.4.32 are amended to allow for transfers where they are beneficial for the economy, through employment. An example is provided in its submission, where water might be transferred for a more valuable land use, such as berries.

5.86. The reasoning and logic behind the Gibson Family Trust submission is appreciated, with transfers of water to more economically efficient uses having positive effects on both water quantity, and the economy. However, in the context of Policy 14.4.13 and Policy 14.4.32, we consider such an amendment may be difficult to allow for. In saying this, as part of the consenting process, positive effects, including those on the natural environment and economic well-being are taken into consideration.

\textit{Policy 14.4.32 – remaining submissions}

5.87. Fish & Game\(^{1175}\) and Forest & Bird\(^{1176}\) support Policy 14.4.32 as notified.

5.88. Federated Farmers\(^{1177}\) request the Policy 14.3.32 be deleted in its entirety, as it provides a disincentive to transfer, resulting in consented water being allocated but unused, or not being used as efficiently as it could be.

\textit{Rule 14.5.12 – remaining submissions}

5.89. Fish & Game\(^{1178}\) supports Rule 14.5.12 as notified.

5.90. Timaru DC\(^{1179}\) generally supports the policy, with the Temuka exclusion for community drinking water as identified previously.

5.91. Arowhenua and Te Rūnanga\(^{1180}\) generally supports Rule 14.5.12, but requests an additional matter of discretion to be included as follows\(^{1181}\):

\textit{Any adverse effects on a mātaitai reserve.}\(^{1182}\)

\(^{1174}\) PC7-341.6, PC7-341.10

\(^{1175}\) PC7-351.49

\(^{1176}\) PC7-472.177

\(^{1177}\) PC7-430.213

\(^{1178}\) PC7-351.69

\(^{1179}\) PC7-292.93

\(^{1180}\) PC7-424.21, PC7-424.98

\(^{1181}\) PC7-424.172

\(^{1182}\) This issue has been addressed more broadly in Part 4 Section 4 of this report.
5.92. Forest & Bird\(^{1183}\) seeks a requirement to surrender 100% of water if the catchment is over-allocated, as they do not support the transfer of water permits.

5.93. As discussed previously in relation to the same relief sought for Policy 14.4.13, a 100% surrender requirement would likely result in no transfers of water and surrendering of allocation, as a 100% surrender is akin to surrendering the consent to be transferred outright.

5.94. Federated Farmers generally supports the submission lodged by OWL\(^{1184}\) and also seeks the following amendments to Rule 14.5.12:

- Condition (3) be amended to remove the annual volume methodology limit to Method 1 of Schedule 10, effectively allowing for the use of any of the Schedule 10 methods.\(^{1185}\) They consider using previous use to determine allocation does not necessarily indicate water requirements in a dry year, while the other methodologies do; and
- Condition (5)(b) be deleted.\(^{1186}\)

5.95. The use of Method 1, Schedule 10 only in Rule 14.5.12 is a means to ensure only water that has previously been used is available for reallocation, less any surrendered volume. The consented volume or rate of take is generally calculated using one of several methodologies set out in Schedule 10. In reality, actual use records may be less than that calculated as required, with use records for 5-10 years able to give a good indication of how much water is actual required on the property.

5.96. We consider Method 1 of Schedule 10 is the most consistent with the vision of Policy 14.5.13, as it results in the effective surrender of allocation that has not been previously utilised. Where transferors do not have sufficient data, there may be scope to allow for use the other methods in Schedule 10, although we consider that the use of Method 1 must be demonstrated, and any inadequacy in the resulting volume prior to using other methods.

5.97. Consistent with the deletion of Policy 14.4.13 due to the disincentive of surrendering water, the removal of condition (5)(b) of Rule 14.5.12 would remove any need to surrender water for transfers. This goes against the intention of the transfer policy and rule package to reduce over-allocation in the OTOP sub-region. We recommend condition (5)(b) be retained as notified.

5.98. OWL seeks several amendments to the matters of discretion under Rule 14.5.12 in addition to the condition amendments already discussed. These amendments are as follows:

- Amend matter of discretion (2) to refer to the flow and allocation regime that apply at the time the application is lodged.\(^{1187}\)
- Matter of discretion (4) is deleted, as this is considered to be covered by matter of discretion (2).\(^{1188}\)
- Matter of discretion (6) is amended to remove uncertainty in wording around the appropriateness of including a lesser amount of water sought.\(^{1189}\)

---

\(^{1183}\) PC7-472.190  
\(^{1184}\) PC7-430.240  
\(^{1185}\) PC7-430.241  
\(^{1186}\) PC7-430.326  
\(^{1187}\) PC7-381.74  
\(^{1188}\) PC7-381.75  
\(^{1189}\) PC7-381.76
5.99. We consider that the requested change to matter (2) is reasonable in most circumstances, but the nature of some consent proposals can mean they take a long time to work through, during which time the planning framework may change, and it may be more reasonable to apply a regime that came in following lodgement. This is generally best done on a case by case basis, with the current wording allowing for flexibility. We recommend that the existing wording be retained.

5.100. We agree that that the minimum flow requirements alluded to in matter (4) are already covered by matter (2).

5.101. It is unclear to us what sort of certainty is sought in relation to matter (6), outside including a descriptive list of potential mitigations. As these mitigations may look different for each application, it is not considered helpful to include additional detail within matter (6).

5.102. OWL\textsuperscript{1190} also seeks an amendment to the wording of Rule 14.5.12, to require that such applications are to be considered as if they were a restricted discretionary activity. This amendment acknowledges that that transfers are treated separately to resource consents under the RMA. A similar amendment is sought in relation to Rule 14.5.13, as described below.

5.103. As alluded to by OWL, transfers are dealt with under section 136 of the RMA. Section 136 provides for transfers of water permits where they are expressly allowed by a regional plan, or have been approved by the consent authority. Section 136(4)(b) specifies that applications for site to site transfers are to be treated as if they were an application for a resource consent.

5.104. Although not consistent with the region-wide CLWRP provisions, the wording change sought by OWL is consistent with section 136 of the RMA, and will align with the wording of transfer rules in Sections 11, 13 and 15A of the CLWRP, which have all gone through a similar sub-regional planning process.

\textit{Rule 14.5.13 – Remaining Submissions}

5.105. Timaru DC\textsuperscript{1191} supports Rule 14.5.13, provided transfers for community drinking supply are excluded from the prohibition of transfers in the Temuka FMU under Rule 14.5.12. This has been discussed and recommended previously.

5.106. Federated Farmers\textsuperscript{1192} seeks that the activity status under Rule 14.5.13 is amended from prohibited to non-complying. The reasoning for the change is that the submitter is opposed to several of the conditions under Rule 14.5.12, and consider that some do not justify the prohibited activity status.

5.107. We acknowledge that the prohibited activity status provides for no flexibility where potential transfers are not able to be meet the conditions of Rule 14.5.12. However, with some of the previously recommended changes to conditions of Rule 14.5.12, included those submitted on by Federated Farmers, there are considered to be fewer issues around meeting the conditions.

5.108. In addition, in accordance with Section 104D of the RMA, resource consents for non-complying activities may only be granted if either the adverse effects are minor, or the proposal is not

\textsuperscript{1190} PC7-381.69
\textsuperscript{1191} PC7-292.94
\textsuperscript{1192} PC7-430.242
contrary to the objectives and policies of any relevant plan. In the case of transfers that don’t meet the conditions of Rule 14.5.12, we consider such transfers are likely to have more than minor adverse effects, with the conditions written to aid in the avoidance and mitigation of adverse effects, and be contrary to policy guidance, be that region-wide of OTOP specific. With this in mind, the grant of such non-complying applications would be difficult.

5.109. We consider the combination of a restricted discretionary and prohibited rule provide for an avenue through which transfers are enabled, provided effects are adequately managed and over-allocation is reduced.

5.110. Three submitters support Rule 14.5.13, provided their relief sought in relation to Rule 14.5.12 is granted. This relief has been discussed previously in relation to the timeframe for surrenders.\footnote{PC7-295.23, PC7-319.60, PC7-318.57}

5.111. OWL\footnote{PC7-381.77} seeks an amendment to the wording of Rule 14.5.13, to require that such applications are not approved under section 136 of the RMA, as if they were a prohibited activity. This amendment acknowledges that that transfers are treated separately to resource consents under the RMA.

5.112. As discussed in relation to the submitters wording amendment for Rule 14.4.12, the change sought is consistent with section 136 of the RMA, and consistent with several other sub-regional transfer rules.

**Recommendation**

5.113. As evidenced by how the submissions and analysis have been set out, there is significant crossover between the transfer policies and rules, with many submitters raising almost identical issues for both. For the reasons set out in the Common Issues section relating to the drafting style of PC7, we recommend that Policy 14.4.13 be simplified to refer more generally to enabling the reduction in over-allocation via transfers, with the detail included in Rule 14.5.12.

5.114. In the same vein, we consider that the guidance proffered by Policy 14.4.32 is already covered in Policy 14.4.13, which in turn is covered under Rule 14.5.12. As such, we recommend that Policy 14.4.32 be deleted, and dependent on decision makers’ conclusions in relation to the Temuka FMU, retain, or remove the Temuka FMU provision in Rule 14.5.12.

**Reviews**

**Introduction and Provisions**

5.115. This section of the report addresses submissions relating to Policy 14.4.21, which sets out the review of all surface water and stream depleting groundwater permits that have a direct or high stream-depletion effect (which is greater than 5 L/s), once PC7 becomes operative. All reviewed permits will be tied to environmental flow and allocation regimes set out in Tables 14(h) to 14(y). This Policy applies to those permits in the Orari, Temuka and Opihi FMUs.
5.116. Section 128(1)(b) of the RMA sets out that a consent authority, in accordance with section 129, can serve notice on a consent holder of its intention to review the conditions of a resource consent for water permits when a regional plan has been made operative which sets rules relating to maximum or minimum levels or flows or rates of use of water, and in the regional council’s opinion, it is appropriate to review the conditions of the permit in order to enable the levels, flows, rate, or standards set by the rule to be met.

5.117. Section 68(7) of the RMA sets out:

Where a regional plan includes a rule relating to maximum or minimum levels or flows or rates of use of water, or minimum standards of water quality or air quality, or ranges of temperature or pressure of geothermal water, the plan may state—

(a) whether the rule shall affect, under section 130, the exercise of existing resource consents for activities which contravene the rule; ...

Submissions

5.118. DOC supports Policy 14.4.21 and states that it will be important for maintaining the integrity of the plan and will help the movement towards providing for enhanced freshwater habitats. Fish & Game also supports the Policy as it gives effect to the NPSFM and assists in addressing over-allocation to safeguard life-supporting capacity and ecosystem health. Timaru DC supports Policy 14.4.21 conditional upon Policy 14.4.10 being retained, as it would protect the Council’s interest in providing for community water supplies (Policy 14.4.10 excludes community water supplies from the minimum flow, residual flow, partial restriction conditions, environmental flow and allocation regimes conditional on a Water Supply Strategy being developed in accordance with Schedule 15).

5.119. There are several submitters who are opposed or opposed in part to Policy 14.4.21. The main reasons for opposition consist of:

   a. Failure to clearly identify allocation limits and affected groundwater permits
   b. Lack of consultation with stakeholders and water permit holders
   c. Lack of time for farmers to adapt to changes
   d. Lack of regard to the Policy’s environmental, economic and social impacts
   e. Concern over the consent review process not being undertaken in an effective and appropriate manner
   f. Concern over whether science is robust enough to account for the differences in hydrology for the Opihi Catchment area
   g. Disagreement over the actual stream depleting effects on some properties in the Upper Cooper’s sub-catchment

---

1195 PC7-160.88
1196 PC7-351.44
1197 PC7-292.73
1198 Fonterra (PC7-416.5), OWL (PC7-381.51)
1199 Federated Farmers (PC7-430.203)
1200 Bonifacio Family Trust (PC7-336.8), RSIL (PC7-235.26)
1201 Pye Group (PC7-352.32)
1202 TCWP (PC7-318.39), Fonterra (PC7-416.5)
1203 Bonifacio Family Trust (PC7-336.9)
1204 M E Mulligan, I J Kerse and N S Kingston (PC7-384.26)
5.120. Federated Farmers\textsuperscript{1205} seek amendment, so that permits are reviewed only after consultation, agreement and support of consent holders. Federated Farmers and OWL\textsuperscript{1206} seek (which we consider is somewhat less direct than their reasons for the submission):

\emph{Assist with achieving the freshwater outcomes for the Orari, Temuka and Opihi Freshwater Management Units, including by way of the review, of all surface water and stream depleting groundwater permits with a direct or high stream depletion effect, with reference to and by implementing the environmental flow and allocation regimes in Tables 14(h) to 14(y).}

\textbf{Analysis}

5.121. At the outset, we draw the submitters’ and Hearing Panel’s attention to the ‘default’ position of a review following operative status being enabled under section 128(1)(b) of the RMA. We also note that at a more general level, submissions in relation to timeframes to adapt, the certainty of science and modelling, and appropriateness of the various limits and targets have been dealt with elsewhere.

5.122. We consider the ability to require immediate water consent reviews is justified and provided for in sections 128(b) and 68(7) of the RMA. Inclusion of Policy 14.4.21 specifying that there will be an immediate review of water permits is, in our opinion, a helpful clarification to the community, while recognising that it is an operational decision of Council at the time to initiate a review. Further, for reasons addressed elsewhere in this report, we consider that progress toward limits and targets, and other ecological protections such as partial restriction regimes, need to be undertaken quickly. Reviews are an appropriate mechanism, as signalled by Policy B6 of the NPSFM, to effect such progress. Overall, we recommend rejection of submissions opposed to this Policy.

5.123. With respect to submitters concerned about identifying whether their water take is stream depleting, we understand that Environment Canterbury technical staff have existing modelling tools available for identifying whether water takes have a direct or high stream depletion effect and can identify individual characteristics on request. Further, an applicant is able to provide bore-specific parameters based on an aquifer test, if the stream depletion calculation has been completed with desktop estimated parameters.

5.124. Further, given that there are now changes recommended to the flow regimes for all surface water bodies in the region (which may change further through the decision-making process), as a consequential change, we recommend applying this policy to all of the OTOP zone.

\textsuperscript{1205} PC7-430.203
\textsuperscript{1206} PC7-381.51
6. **Quantity – Orari Specific Provisions**

**Introduction and Provisions**

6.1. This section of the Section 42A Report addresses submissions relating to the description of the Orari FMU, Policies 14.4.22 – 14.4.27, Rules 14.5.26, 14.5.27, 14.5.28, Table 14(h) and the definitions for "Orari Conjunctive Use Zone" and "Orari Freshwater Management Unit". These provisions apply within the Orari FMU, which is one of six FMUs proposed within the OTOP sub-region. It is noted that that Orari FMU does not include groundwater, with groundwater across the sub-region forming part of a separate FMU.

6.2. Section 14 of the CLWRP currently includes provisions for the Orari Catchment. Part B of PC7 proposes a set of policy provisions for the Orari FMU that are based on, but propose changes to what are currently policies 14.4.3, 14.4.7, 14.4.8, 14.4.9, 14.4.10, 14.4.12, which would also be renumbered as policies 14.4.22 – 14.4.27. PC7 also proposes to largely retain what are currently numbered Rules 14.5.1, 14.5.2 & 14.5.3, on damming activities within the Orari Catchment or Orari River, with these renumbered as Rules 14.5.26, 14.5.27, 14.5.28. The existing flow and allocation regime table (currently Table 15) is proposed to be amended slightly and renumbered as Table 14(h).

6.3. The changes are described in the Section 32 Report as follows:

*There are only minor changes recommended to the existing environmental flow and allocation regime in the Orari FMU to better achieve the objectives of the CLWRP. Part B of PC7 proposes changes to correct an error to the minimum flow site for Ohapi Creek which occurred during the previous flow review and introduces a minimum flow site for Coopers Creek that better manages adverse impacts of abstraction on this surface water body.*

6.4. The changes proposed are related to Recommendation 5.1.3 of the ZIPA, to retain the current flow and allocation regime, with two amendments: provision of an additional minimum flow monitoring site and allocation limit on Coopers Creek at State Highway 72; and changing the measurement site for minimum flows on Ohapi Creek to the Browns Road flow recorder, stated as being to capture the intent of the previous flow review in the Orari Catchment. As noted earlier, this general approach of 'maintaining the status quo' for this catchment raises questions about alignment with current understandings of Te Mana o te Wai. For the Hearing Panel's information, if adjustments were to be considered, Memorandum 10 (Appendix 1 pages 98 – 102) in the Hayward 2019 report R19/80 presented a summary of ecologically based minimum flow recommendations for the Orari and Pareora rivers that was part of previous work for the LWRP or Pareora River flow plan.

6.5. Due to the nature of the submissions on these provisions, the provisions are summarised in more detail within the sub-sections below, and the analysis is completed and recommendations made at the end of each sub-section.

---

1207 The planning author for this section is Matthew McCallum-Clark and the technical authors are Daniel Clark and Shirley Hayward.

6.6. There are various submitters who comment on a broad range of policies within Chapter 14, i.e. by reference to “Nutrient Management Provisions Policy 14.4.17 – 14.4.28”. However, the matters raised in these submissions do not appear to relate to the specific direction in Policies 14.4.22 – 14.4.27. For example, they comment on use of the Farm Portal, GMP calculations, timeframes, reductions and monitoring, which are not matters relating to Policies 14.4.22 – 14.4.27. This appears to be a result of the Orari FMU water quantity policies being located ahead of Policy 14.4.28. These submissions are clearly not related to the Orari FMU water quantity policies, and so are not addressed here.

Submissions and Analysis

Description of the Orari FMU and definition

6.7. M Mulligan, I Kerse & N Kingston seek changes to further describe the submitter’s preferred management regime for the Upper Coopers Creek sub-catchment. This submission point is addressed below in relation to the changes sought to the flow regime.

6.8. There are no submissions on the definition of the Orari FMU.

Policy 14.4.22

6.9. Policy 14.4.22 (currently 14.4.3) is proposed to be amended as follows:

Over-allocation of fresh water in the Orari Freshwater Management Unit Catchment is addressed by Timaru District Council demonstrating, on or before 2044, surrendering CRC011982 or its replacement in 2013 and increased efficiency for any replacement of CRC011991 CRC173644, or any variation thereof, in 2017, and however, for security of supply for community drinking water and stockwater is protected by continuing to reserve a total flow rate of 235 L/s in 2025 of surface water will continue to be reserved for Timaru District Council community drinking and stock water, in addition to the volumes in Table 14(h), which form part of the environmental flow and allocation regime for Orari Freshwater Management Unit River.

6.10. Timaru DC supports the Policy, which seeks to continue to reserve water for the Timaru DC community drinking-water and stock water supply. It states that this will help protect Timaru DC’s interests in providing for community drinking water and community water supplies. Beef + Lamb also supports the Policy, seeking retention of the wording relating to the protection of the security of supply for stock drinking water.

1209 Orari Estate Holdings (PC7-161.16, PC7-161.17, PC7-161.18, PC7-161.19, PC7-161.20, PC7-161.21, PC7-161.22, PC7-161.23, PC7-161.24, PC7-161.25, PC7-161.26, PC7-161.27, PC7-161.28, PC7-161.29, PC7-161.30, PC7-161.31, PC7-161.32, PC7-161.33) Dairy Farm Management Services (PC7-219.17, PC7-219.18, PC7-219.19, PC7-219.20, PC7-219.21, PC7-219.22), Moffitt Dairy Ltd (PC7-435.9, PC7-435.10, PC7-435.11, PC7-435.12, PC7-435.13, PC7-435.14, PC7-435.24, PC7-435.25, PC7-435.26, PC7-435.27, PC7-435.28, PC7-435.29) Darby Farm Partnership (PC7-464.14, PC7-464.15, PC7-464.16, PC7-464.17, PC7-464.18, PC7-464.19 PC7-464.29, PC7-464.30, PC7-464.31, PC7-464.32, PC7-464.33, PC7-464.34), Orton Downs Farm Partnership (PC7-469.9, PC7-469.10, PC7-469.11, PC7-469.12, PC7-469.13, PC7-469.14, PC7- PC7-469.24, PC7-469.25, PC7-469.26, PC7-469.27, PC7-469.28, PC7-469.29)

1210 PC7-384.2

1211 PC7-292.74

1212 PC7-214.137
6.11. Arowhenua and Te Rūnanga\textsuperscript{1213} considers that the Policy reads like a statement rather than a policy that can be assessed or measured, and indicates that the Ōrāri/Orari River is over allocated as a result of Timaru DC’s water supply take. It considers that the current wording suggests that no other party is responsible for the over allocation, and as there are multiple parties involved, the policy should reflect this. The submitter seeks the following wording:

*Over-allocation of fresh water in the Orari Freshwater Management Unit must be addressed by all water users by demonstrating increased efficiency to ensure the security of supply for community drinking water and stockwater is protected, as part of the environmental flow and allocation regime for Orari Freshwater Management Unit River.*

6.12. We agree with Arowhenua and Te Rūnanga, to the extent that efficiency and other methods of reducing overallocation are important. However, we prefer the specific identification of a rate of take identified for the Timaru DC community supply, and therefore consider that the wording proposed by Arowhenua and Te Rūnanga is a substantial change in focus of the Policy, from one being about the Timaru DC take, to one about all abstraction. Overall, we recommend maintaining the existing wording, but with a minor change to make it clear that the Timaru DC resource consent is not the only method by which overallocation will be dealt with. “...addressed, including by Timaru District Council...”

**Policy 14.4.23**

6.13. Policy 14.4.23 (currently 14.4.7) is proposed to be amended as follows:

*To prevent the flow falling below the A permit allocation limit minimum flows for the Orari Freshwater Management Unit Catchment in Table 14.14(h), the following restrictions shall be applied and strictly adhered to in respect of the abstraction of surface water, stream depleting groundwater and abstractions from within the Orari Conjunctive Use Zone:*

1. **In the Orari Catchment** all partial restrictions for water permits in the Orari Catchment including takes to storage shall be stepped unless the consent applicant is part of a water users group; and

2. **In the Orari Catchment** when the stepped approach applies, the rate of take is to be reduced in increments of 50% and 100% of the available flow rate to ensure the minimum flow is not breached; and

3. **In the Orari Catchment** if a water permit holder is part of a water users group, any restrictions will be managed according to the water users group roster.

6.14. Arowhenua and Te Rūnanga\textsuperscript{1214} notes that the policy includes reduced increments of 50% and 100%, with the increments not stepped. They seek that the policy is redrafted so that the intent is clearer.

6.15. Federated Farmers\textsuperscript{1215} supports clauses (a) and (c) of the Policy, but only support (b) to the extent that any blanket partial restrictions are consistent with the recommendations of the Catchment Flow and Allocation Working Party. It considers that the value of partial restrictions depends on the context, and to the extent that these are intended to give effect to the proposed NES on Ecological Flows and Water Levels, they emphasise the proposed status of that NES. They state that “the absence of partial restrictions should not be a ‘game-
breaker’ for any otherwise workable flow and allocation regime which was recommended by a Catchment Flow and Allocation Working Party.”

6.16. M Mulligan, I Kerse & N Kingston oppose the Policy, stating that the Planning Maps in PC7 need to be clarified and it is not clear whether Upper Coopers Creek sub-catchment is within the Orari Conjunctive Use Zone or not and therefore whether this Policy is applicable to this sub-catchment. They also state that the restrictions in (b) are too crude and do not allow appropriate flexibility to manage flows. They seek that the Policy is deleted or amended to allow greater flexibility in the restriction levels in clause (b), such as stepped increments at 10% intervals.

6.17. We note that the changes proposed to Policy 14.4.23 are editorial in nature. There are no changes that affect any outcomes from applying the Policy. Most submissions raised issues with respect to clause (b) of the Policy. We again note that only an editorial change has been made to this clause, and also highlight the administrative simplicity and certainty through all consent holders being on the same restrictions regime. We are unclear as to what lack of clarity Arowhenua and Te Rūnanga is seeking to address. Overall, no change is recommended.

Policy 14.4.25 and Orari Conjunctive Use Zone

6.18. Policy 14.4.25 (currently 14.4.9) is proposed to be amended as follows:

In the Orari Freshwater Management Unit, all All permits for groundwater takes from the Orari Catchment within the conjunctive use zone and where the screen is less than 30 m deep shall have minimum flow conditions in accordance with the environmental flow and allocation regime set out in Table 14(h), unless the application for resource consent demonstrates that the take will not have a direct, high or moderate degree of stream depletion effect as determined through field testing in accordance with Schedule 9 consistent with the minimum flow sites and allocations in Table 15.

6.19. PC7 also proposes the following changes to the definition of “Orari conjunctive use zone’:

means the area identified as the Orari Conjunctive Use Zone on the Planning Maps. Groundwater abstractions takes which are screened 30 metres deep or less within this zone and are considered to have a direct degree of hydraulic connection with surface water, unless otherwise demonstrated through field testing in accordance with Schedule 9.

6.20. Federated Farmers seeks retention of Policy 14.4.25, stating that it provides the opportunity to demonstrate a lack of hydraulic connection. Fish & Game also seeks retention of the Policy, on the basis that it recognises the hydrological interaction between groundwater and surface water within the conjunctive use zone and the effects that groundwater abstraction can have on surface water flow and gives effect to the NPSFM. Timaru DC support Policy 14.5.25, conditional on Policy 14.4.22 also being retained.

6.21. Fonterra considers it unnecessary and inappropriate to apply minimum flow restrictions on groundwater takes with moderate (or less) stream depleting effect, because lag times
associated with moderate stream depleting effects are such that applying minimum flow restrictions typically has little if any benefit in protecting ecosystem health at times of low flow. The submitter also considers that the Policy is inconsistent with Schedule 9, Table S9.1, in which moderate stream depleting effects are not subject to minimum flow restrictions. As such, it seeks an amendment to the Policy to refer to the take not having a “direct or high” degree of stream depletion effect, rather than “direct, high or moderate”.

6.22. OWUG\textsuperscript{1221} is overall concerned that PC7 proposes changes to the environmental flow and allocation regime that was previously established for the waterbodies of the Orari Catchment. It had understood that this regime, which forms part of the current Section 14 sub-regional section of the CLWRP, would not be revisited as part of PC7 and are concerned about the changes that are proposed, as “\textit{they change the basis for which the original regime was based on and may have perverse outcomes}”.

6.23. More specifically, OWUG raises concerns with the changes proposed to the definition of the ‘Orari Conjunctive Use Zone’ and the related wording of Policy 14.4.25. It states that the purpose of the Zone originally was to recognise the interconnectedness between shallow groundwater and flows in the Orari River and it meant that all groundwater takes less than 30 metres in depth would be treated and managed as surface water abstractions, with the allocation for the Orari River set on that basis. It notes that the proposed changes to the definition allow for an exception to this general approach, and as a consequence, it considers that the Orari River allocation limit would need to be reassessed. The submitter also notes that the change will impact the calculation of the Orari-Opihi GAZ.

6.24. Because of the above, OWUG seek that the definition of the Orari Conjunctive Use Zone is amended so as not to include “\textit{unless otherwise demonstrated through field testing in accordance with Schedule 9}” and Policy 14.4.25 is amended to remove “\textit{unless the application for resource consent demonstrates that the take will not have a direct, high or moderate degree of stream depletion effect as determined through field testing in accordance with Schedule 9}.”

6.25. We note Fonterra’s views with respect to the degree of stream depletion effect that triggers minimum flow conditions. However, surface water and groundwater resources in this Zone are considered to be overallocated, and the ZC process identified that further refinement of the groundwater provisions, including connectedness to surface water would assist in addressing this overallocation.

6.26. We note that there is always the opportunity for field testing to provide for the for the possibility that some groundwater takes in the Orari Conjunctive Use Zone could be special cases where they may not be stream depleting based on very locally specific conditions. We consider that there is little to no environmental risk, should such conditions be found, and possibly significant benefit to the consent holder. Overall, no change is recommended.

\textbf{Policies 14.4.24, 14.4.26, 14.4.27}

6.27. Proposed policies 14.4.24, 14.4.26 and 14.4.27, are largely retained from those currently numbered 14.4.8, 14.4.10 and 14.4.12), with updates made to refer to Orari FMU (rather than “Orari mainstem” or “Orari Catchment”), and to Table 14(h) (rather than Table 15). Federated Farmers\textsuperscript{1222} seeks retention of these policies.

\textsuperscript{1221} PC7-145.1, PC7-145.2
\textsuperscript{1222} PC7-430.206, PC7-430.208, PC7-430.209
6.28. As noted earlier, there are some submissions that state opposition to these policies (by reference to a suite of policy numbers), but the reasons given and relief sought does not appear to relate in any way to the detail of these particular policies. As such, there are no submissions seeking changes to policies 14.4.24, 14.4.26 and 14.4.27.

6.29. Overall, given the support in submission, no further changes to these policies are recommended.

Orari FMU Rules

6.30. PC7 proposes three rules (14.5.26, 14.5.27, 14.5.28) under the heading for the Orari FMU, all of which relate to dams and damming. These are current rules (numbered 14.5.1, 14.5.2 and 14.5.3) with no changes proposed to the latter two rules aside from the re-numbering. The only change to proposed Rule 14.5.26 (from the current wording of Rule 14.5.1) is an additional clause, which adds a further permitted activity condition to the use of land to store water in the Orari Catchment, whereby the activity would no longer be permitted if it occurs within a Rock Art Management Area.

6.31. Federated Farmers\textsuperscript{1223} supports Rule 14.5.26 and seek its retention. HNZPT\textsuperscript{1224} supports the addition of the Rock Art condition, given the potential effects from water storage on RAMAs.

6.32. Forest & Bird\textsuperscript{1225} seeks that an additional condition is added to the rule to avoid significant indigenous biodiversity or significant habitats of indigenous fauna and matters of national importance in accordance with Section 6 of the RMA.

6.33. In relation to Rules 14.5.27 and 14.5.28, no changes have been sought in submissions, with Federated Farmers\textsuperscript{1226} supporting both rules and Fish & Game\textsuperscript{1227} supporting Rule 14.5.28.

6.34. With respect to the additional condition sought by Forest & Bird, we consider that other rules in the CLWRP or the relevant district plan will cover some of these matters. Without the areas already being identified or mapped (as is done for the RAMA), it would be difficult to establish permitted activity status with certainty. Overall, given the relatively small size of these water impoundments, which occur outside the bed of a river, the additional clause is not recommended to be added.

6.35. It is also noted that Rule 14.5.26 refers to the “Orari Catchment”, and a minor correction is recommended to adjust this to refer to the “Orari Freshwater Management Unit”.

Table 14(h)

6.36. Within the operative CLWRP, Table 15 contains the Environmental Flow and Allocation Limits for the Orari River. PC7 proposes to re-number this to Table 14(h), rename it to the “Orari Freshwater Management Unit Environmental Flow and Allocation Regime” and make various amendments to the content of the table itself. This includes a separate regime being included for Coopers Creek. The Section 32 Report notes that there is no environmental flow and allocation limit specific to Coopers Creek in Table 15, with minimum flow triggers for the Orari

\textsuperscript{1223} PC7-430.260
\textsuperscript{1224} PC7-331.7
\textsuperscript{1225} PC7-472.193
\textsuperscript{1226} PC7-430.261, PC7-430.262
\textsuperscript{1227} PC7-351.72
River used as a proxy for low flow conditions in Coopers Creek. However, technical investigations of the relationship between flows in Coopers Creek and Orari River indicate that the Orari River is not a suitable proxy for determining low flow conditions in Coopers Creek.

6.37. Federated Farmers\textsuperscript{1228} seeks that any aspects of the table that are inconsistent with the recommendations of the Flow and Allocation Committee of the OTOP ZC, the submissions of OWL, or the submissions of the TCWP are deleted or amended. As this submission is made in relation to various Tables (14(h) – 14 (za)), and OWL and TCWP do not appear to seek changes to Table 14(h), it is not clear what, if any, changes are sought to Table (h) by this submitter.

6.38. OWUG\textsuperscript{1229} and GWS\textsuperscript{1230} note that a reduction is proposed in the allocation limit for the Orari River from 1,400 L/s to 1,069 L/s, based on removal of the Upper Coopers Creek allocation of 331 L/s from this block. They state that the Upper Coopers Creek allocation is incorrect, as it does not include two takes which are listed as being in the Orari River allocation which are actually in Upper Coopers Creek. They state that the basis for the change to the Orari River allocation therefore needs to be considered further, and seek that the Upper Coopers Creek allocation is reviewed and the ‘Current allocation’ for Upper Coopers Creek is set at 124 L/s.

6.39. We note that the current Upper Coopers Creek (to SH72) allocation is considered to be 218 L/s, using up-to-date stream depletion estimates for CRC970137.3, CRC031790, CRC971884.4, CRC962360.1, CRC981979.1, and CRC962478.

6.40. These submitters further state that the actual current allocation for the Orari River totals 1,706.2 L/s, which is higher than what was considered to be the actual allocation at the time the current regime was developed (then considered to be 1,524 L/s). They note that the actual current allocation is also significantly more than the proposed reduced limit of 1,069 L/s. They state that while the allocation regime was intended to impose a sinking lid on allocation between the then current limit, and the limit applying 3 years after adoption of the regime, the actual reduction after 3 years was 124 L/s. They state that the proposed allocation limit of 1,069 L/s will have a significant impact on the users of the catchment, which they state has not been assessed in the Section 32 Report. They seek that the allocation for the Orari River is reviewed, taking into account their other submission points relating to the Orari Conjunctive Use Zone definition, and by comparison to the original regime.

6.41. We note that 1,524 L/s was considered to be the total allocation for the Orari mainstem at upstream of Ohapi Creek (Headwaters, Upper Orari, Upper Coopers, Lower Orari and Coopers, Petries Creek) excluding the Timaru DC take in 2011 when the Orari River Flow and Allocation Plan was developed. It was calculated using the stream depletion methodology set out in Schedule 9 of the CLWRP i.e. in the Orari Conjunctive Use Zone all the shallow groundwater takes were assessed using this methodology despite being counted as direct for minimum flow purposes. Since then a small number of consents have been surrendered, and the actual allocation has decreased from that provided for in that Plan.

6.42. The current Resource Consent Inventory stream depletion calculations have increased all the estimates (except for those which were already direct and one consent that was previously higher). We do not consider it appropriate to further increase the allocation in PC7, as this is unlikely to align with Te Mana o te Wai. The current Resource Consent Inventory includes one consent that had previously been included in the Ohapi allocation, one in Rhodes, one in

\textsuperscript{1228} PC7-430.265
\textsuperscript{1229} PC7-145.3, PC7-145.4, PC7-145.5, PC7-145.6, PC7-145.7, PC7-145.10, PC7-145.11
\textsuperscript{1230} PC7-295.6, PC7-295.7, PC7-295.8, PC7-295.9, PC7-295.10
Waihi, and one consent that does not exist, and it also omits a small number of relevant consents. The Orari River Flow and Allocation Plan stated that the allocation would reduce to 1400 L/s, three years after that Plan became operative. Therefore we consider the limit should be 1400 L/s-218 L/s. This would follow the intent of the Orari River Flow and Allocation Plan while separating out the Upper Coopers Creek abstractors.

6.43. M Mulligan, I Kerse & N Kingston\(^{1231}\) are three landowners who abstract groundwater near Coopers Creek, that is hydraulically connected to Upper Coopers Creek. Their fundamental concern in relation to PC7 is the effect of the proposed changes to the flow regime, as it would apply to them, on reliability of supply, and the impact of that on their productive farming operations. More specifically, they are concerned that PC7 introduces a new minimum flow site for Coopers Creek that seeks to manage the adverse impacts of hydraulically connected groundwater abstractions on this surface water body. They state that the nature of the Upper Coopers Creek Sub-Catchment is such that the minimum flow will not achieve the desired ecological outcomes and will have significant adverse effects on existing groundwater abstractions within the Upper Coopers Creek Sub-Catchment and therefore on their farming operations. They also do not consider that the PC7 regime would give effect to policies in the NPSFM or the CRPS. They state:

The proposed minimum flow will effectively prohibit the Submitters from accessing reliable water supply during extended periods of the year. Evidence indicates that existing groundwater abstractions within the Upper Coopers Creek Sub-Catchment only have a minor effect on surface water flows. The lower reach of Upper Coopers Creek experiences high levels of flow loss naturally. This phenomenon is not directly connected to the Submitters groundwater abstractions in the Upper Coopers Creek Sub-Catchment. This submission therefore seeks a flow management regime which reflects the unique hydrology of the Upper Coopers Creek Sub-Catchment and gives better effect to the objectives and policies of the relevant statutory documents.

6.44. The submitters seek that a suite of provisions (policies, rules and a new definition for “Upper Coopers Creek Sub-Catchment”) are included in Chapter 14 that are specific to Upper Coopers Creek. Broadly speaking, the provisions are intended to:

- Recognise the hydraulic connection between groundwater flows at Upper Coopers Creek and surface water flows;
- Enable stream-depleting groundwater abstractions provided that effects on surface water flows are no more than minor;
- Encourage integrated management between water users in Upper Coopers Creek;
- Exempt the Upper Coopers Creek Sub-catchment from restrictions on minimum flows recorded at the SH72 monitoring site or establish a new minimum flow or an alternative flow management regime;
- Establish rules which limit stream-depleting groundwater abstractions based on maximum allocation volume as opposed to a minimum flow.

\(^{1231}\)PC7-384.1, PC7-384.2, PC7-384.5, PC7-384.6, PC7-384.7, PC7-384.8, PC7-384.9, PC7-384.10, PC7-384.11, PC7-384.12, PC7-384.13, PC7-384.14, PC7-384.15, PC7-384.16, PC7-384.17, 384.18, PC7-384.19, PC7-384.20, PC7-384.21, PC7-384.22, PC7-384.23, PC7-384.24
6.45. In relation to Table 14(h), they seek that it is amended to separate Coopers Creek into “Lower Coopers Creek” and “Upper Coopers Creek Sub Catchment”, as follows:

<table>
<thead>
<tr>
<th>River or stream</th>
<th>Location of recorder</th>
<th>Minimum flow for A permits (L/s)</th>
<th>Allocation limit (L/s)</th>
<th>Maximum Allocation Volume (Million m3/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower Coopers Creek</td>
<td>Coopers Creek at SH72</td>
<td>50 (Pro Rata restrictions)</td>
<td>111</td>
<td>N/A</td>
</tr>
<tr>
<td>Upper Coopers Creek Sub Catchment</td>
<td>TBD – either Coopers Creek at SH72, Mullighans Weir or a Groundwater level</td>
<td>[TBD] but less than 50L/s</td>
<td>220</td>
<td>1.9</td>
</tr>
</tbody>
</table>

6.46. They state that evidence shows that the proposed minimum flow is inappropriate and that their stream-depleting groundwater abstractions have only a minor effect on surface water flows at the lower reach of Upper Coopers Creek Sub-Catchment and are not determinative in maintaining the minimum flow. They do not consider it appropriate to restrict stream-depleting groundwater abstractions using a surface water monitoring point at SH72 Coopers Creek, particularly with a minimum flow that represents twice MALF (although we note that the submitter does not provide a MALF value in their submission). They also have concerns that minimum flow at the SH72 site may not be the most appropriate method for maintaining and improving ecological values within the Upper Coopers Creek Sub-Catchment. They consider that a groundwater level monitor located within the spring-fed section of Upper Coopers Creek, or at their individual bores, or a minimum flow at Mulligan’s Weir may be more appropriate for the Upper Coopers Creek Sub-Catchment. In relation to the specific amendments sought in relation to Table 14(h) by the submitters, we note that the reasons for a lower minimum flow for the Upper Coopers Creek Sub Catchment is unclear given the Coopers Creek loses flow as it travels downstream.

6.47. We note that between 1997 and 2005, Environment Canterbury granted a number of groundwater abstraction consents from shallow wells near the Coopers Creek spring heads. Some of these consents had minimum flow conditions to protect flows in Coopers Creek, while others did not. In 2013, the conditions were changed on two consents, linking them to flows in the Orari River, 26 kilometres away, rather than Coopers Creek. This was done as an interim measure while Environment Canterbury assessed whether Orari flows are an adequate proxy for low-flow conditions at Coopers Creek.

6.48. A detailed surface water and groundwater study was completed on Coopers Creek, which was published in 20171232, and states: “Groundwater abstraction in the local area can reduce flows in Coopers Creek. The Orari River is not a suitable proxy for determining low-flow conditions in Coopers Creek.”

---
6.49. For this reason, PC7 returned the minimum flow to what is was prior to this five-year period. The minimum flow of 50 L/s was recommended to be retained by Golder (2013) due to the absence of robust hydrological statistics at this site. The finding of the Golder ecological assessment is: “Golder suggests that any reduction in the current minimum flow could result in a significant decline in the extant ecological values of the stream”. Therefore, in the absence of specific assessments of the impacts of the different flow regime, we do not recommend any changes.

6.50. Rooney Farms Ltd\textsuperscript{1233} states that the flow recorder site for the Orari River of “Upstream Ohapi” is an inappropriate and illogical place to measure those irrigation takes that occur above the Orari Gorge, where the river is much more stable and has more consistent flows throughout the season. The submitter states that existing irrigation takes above the Orari Gorge total less than 110 L/s, so in their view, “are unlikely to have a greater than minor effect on Orari flows downstream of the Gorge, given there are considerable inflows, abstractions, and periodic dry reaches in this section of river”. It seeks that a separate small A block allocation is provided for above the Gorge based on the existing water takes (110 L/s) and current minimum flows. It considers this approach would be a fairer and simpler way to protect the natural values associated with the Gorge than the whole-of-catchment allocation block and minimum flow site.

6.51. Rhys Farm Ltd\textsuperscript{1234} seeks that in relation to Ohapi Creek, it be self-managed by an Ohapi Creek Water Users Group when the flow is below 1,000 L/s, with a staggered flow regime applying. The submitter provides the following examples:

- For October to January, minimum flow of 570 L/s and when flow is:
  - Between 850 & 1,000 L/s – 75% restrictions to apply
  - Between 650 & 850 L/s – 50% restrictions to apply
  - Between 570 & 650 L/s – 25% restrictions to apply
  - Below 570 L/s – Full restrictions

- For February to September, minimum flow of 730 L/s and when flow is:
  - Between 900 & 1,000 L/s – 75% restrictions to apply
  - Between 730 & 900 L/s – 50% restrictions to apply
  - Below 730 L/s – Full restrictions

6.52. Pye Group\textsuperscript{1235} states in relation to Table 14(h), that it “require more information regarding if the current self-managed staggered restriction programmes remain in place and unchanged for the Ohapi Creek”.

6.53. J Richardson\textsuperscript{1236} seeks, in relation to a number of the Tables in Section 14, that the figures for minimum flows are tightened up and that more realistic figures are used that might make a practical difference. He states that some changes to minimum flows for some water courses appear “merely cosmetic”.

6.54. SCCC\textsuperscript{1237} seeks, in relation to a number of the Tables in Section 14, that PC7 be amended to provide further time for affected consent holders to adjust to any proposed increases in

\textsuperscript{1233} PC7-453.4
\textsuperscript{1234} PC7-297.6
\textsuperscript{1235} PC7-352.34
\textsuperscript{1236} PC7-65.34
\textsuperscript{1237} PC7-340.2
minimum flows and/or new partial restriction regimes. Conversely, the Orari Protection Group\textsuperscript{1238} considers measures to reduce overallocation should apply immediately.

6.55. We note that the minimum flow site on the Orari River at Upstream Ohapi was adopted during the development of the operative Orari Flow and Allocation Plan, as it was downstream of most abstraction. This allowed the effects of the abstraction to be captured in the measured residual flow. Subject to overall comments in relation to Te Mana o te Wai, we consider the allocation blocks appropriate and do not recommend separate small allocation blocks, specific recognition in the Plan of the self-management regimes or additional flow recorder sites. Similarly, volume-based allocations are not recommended for surface waterbodies, as rate of take is typically a better mechanism to manage effects.

\textsuperscript{1238} PC7-551.5

Introduction and Provisions

7.1. PC7 proposes to divide the sub-region of OTOP into six FMUs for the purpose of managing water quality and quantity, one of which is the Temuka FMU. Part B of PC7 includes a range of provisions that will apply within the Temuka FMU. This includes a description of the FMU at the start of Section 14; a definition for the ‘Temuka Freshwater Management Unit’ in Section 14.1A; Freshwater Outcomes, Limits and Targets applicable to water bodies within the Temuka FMU (contained in Tables 14(a) and (c)); an environmental flow and allocation regime for the Temuka FMU (Tables 14(i), (j), (k) and (l)); and some specific policies relating to phasing out of over allocation (Policies 14.4.30 and 14.4.31), transfers (Policy 14.4.32) and cultural allocation (Policy 14.4.33). There are no additional rules specific to the Temuka FMU proposed, so the applicable sub-region wide provisions, or regional provisions will apply. This section of the report discusses these Temuka FMU specific provisions, except where set out below. As context for this section, it is noted that the Temuka is significantly overallocated in terms of surface water and stream depleting groundwater abstraction, as described in the Section 32 Report.

7.2. Policy 14.4.32, along with clause (c) of Policy 14.4.13 and conditions within Rules 14.5.2 and 14.5.12 contain specific direction in relation to transfers within the Temuka FMU. Because of their interrelated nature, these are discussed in the Transfers section of this report. Policy 14.4.33, along with clause (c) of Policy 14.4.3, and related rules and allocation limits in Table 14(i) and 14(l), are addressed in the Cultural Matters section of the report. The Freshwater Outcomes, Limits and Targets are discussed in the Outcomes section of this report.

7.3. Policy 14.4.30 reads:

Over allocation of the Temuka Freshwater Management Unit is phased out before 1 January 2035 by:
   a. imposing increased minimum flow restrictions at Manse Bridge in accordance with Table 14(i); and
   b. requiring two stages of reduction in the allocation limit for A and B permits in accordance with Table 14(i) and 14(j); and
   c. further increasing the minimum flow restrictions for the Temuka Freshwater Management Unit at Manse Bridge and imposing, from 1 January 2035, pro-rata partial restrictions on abstractions in accordance with Table 14(l) so as to avoid the breach of any applicable minimum flow; and
   d. achieving allocation limits of 1.6 m³/s for the A Allocation Block and 0.4 m³/s for the B Allocation Block by 1 January 2035.

7.4. The Policy is implemented through the environmental flow and allocation regimes in Tables 14(i) - (l) as well as providing direction for water permit applications. Tables 14(i), 14(j) and 14(k) set the flow and allocation regime for the Temuka FMU for A permits, B permits and C permits respectively. Both the A & B permit regimes include increased minimum flows from 1 January 2025, and allocation limits which reduce over time. Table 14(l) contains a flow and allocation regime for A & B permits that applies from 1 January 2035.
7.5. Policy 14.4.31 directs that if, by 1 January 2035 the allocation limits in Table 14(l) have not been achieved, all surface water and connected groundwater consents are reviewed and conditions imposed that require proportional reductions, and starting at a flow rate that is the sum of the minimum flow and total allocation at 1 January 2035.

7.6. Given the interrelated nature of Temuka FMU provisions and the similarity of submissions on different provisions, all submission points have been considered together in one section below.

**Submissions and Analysis**

7.7. As noted above, the introduction of Section 14 includes a description of each FMU, including the Temuka FMU. G Stone\(^\text{1239}\) seeks that the Temuka FMU is retained as notified. TCWP\(^\text{1240}\) and TCG\(^\text{1241}\) consider that the description of the Temuka FMU should acknowledge that in the lower catchment, the Temuka River joins the Opihi River, and seek that words to this effect are included in the introductory text. We support this change, which more accurately reflects the geographic and management situation, by adding the words: The Temuka River joins the Opihi River in the lower catchment, approximately 3km upstream of the Opihi River mouth.

7.8. Fish & Game\(^\text{1242}\) supports both Policies 14.4.30 and 14.4.31, as well as Tables 14(i) and 14(l), as they require the phasing out of over-allocation, which they note will give effect to the NPSFM. It also supports the increase in minimum flows, decrease in allocation and pro rata restrictions, as they consider it will result in improvements in surface water flows, which in turn will positively impact ecosystem health and aquatic life.

7.9. There are several submitters who seek that the timeframes specified in one or both of the Policies 14.4.30 and 14.4.31, as well as corresponding changes to the date in Table 14(l) is amended as follows:

- Submitters\(^\text{1243}\) who seek that the timeframe is condensed, with either the date PC7 is made operative, 1 January 2025, or no specific date identified.
- Submitters\(^\text{1244}\) who seek that the timeframe is extended to 2040.

7.10. Reasons for seeking condensed timeframes are generally based on 2035 being too long a timeframe for restoration of the health of the river, and the timeframe proposed not being sustainable.

7.11. Reasons for seeking the extended timeframe include that the extended date reflects the recommendations of the TCWP, and because there needs to be sufficient time to adapt to the changes, given the significant impacts on reliability of supply and subsequent negative economic impacts for irrigators within the Temuka FMU. It also provides more time to seek

---

\(^{1239}\) PC7-291.2
\(^{1240}\) PC7-318.2
\(^{1241}\) PC7-319.1
\(^{1242}\) PC7-351.47, PC7-351.48, PC7-351.77, PC7-351.78
\(^{1243}\) For example; DOC (PC7-160.89, PC7-160.90, PC7-160.91, PC7-160.92, PC7-160.93), Arowhenua and Te Rūnanga (PC7-424.9, PC7-424.208, PC7-424.209, PC7-424.10), Forest & Bird (PC7-472.175, PC7-472.176), H Woolstencroft (PC7-553.1)
\(^{1244}\) For example; GWS (PC7-295.4, PC7-295.5, PC7-295.12), TCWP (PC7-318.40, PC7-318.42, PC7-318.60), TCG (PC7-319.37, PC7-319.38, PC7-319.42, PC7-319.64), SCCC (PC7-340.3, PC7-340.4, PC7-340.5, PC7-340.6), Gibson Family Trust (PC7-341.9), Federated Farmers (PC7-430.211, PC7-430.212, PC7-430.266, PC7-430.267, PC7-430.268, PC7-430.269, PC7-430.324)
community wide solutions for the catchment, such as the supply of out of catchment water, transfer to deep groundwater and storage. Submitters also note that the timeframe in the current CLWRP for the Orari Catchment, which is also substantially over-allocated, is 2040.

7.12. TCWP, GWS and TCG generally support Tables 14(i)-(k), because the regime imbedded in the Table was developed by the Working Party, and they believe the regime strikes an appropriate balance between improved environmental outcomes and managing the effects of reduced reliability of supply on financial viability. They consider that reasonable time to adapt to changes is crucial for businesses, as well as allowing for alternative sources of water supply to be secured.

7.13. It appears that Arowhenua and Te Rūnanga seek additional changes to Policy 14.4.30 to delete clause (b), remove reference to any timeframe in clause (d) and amend clause (a) to read:

*Increasing the minimum flow restrictions for the Temuka Freshwater Management Unit at Manse Bridge 3 years from the date this plan change becomes operative in accordance with Table 14(i).*

7.14. Similarly, changes appear to be sought to Policy 14.4.31 so that it reads:

*Assist in the achievement of the 1.6 m³/s and 0.4 m³/s allocation targets for the A and B Blocks, and avoid the breach of any applicable minimum flow set out in Table 14(l), if by 1 January 2025 these targets have not been achieved, by reviewing all surface water and groundwater permits with a direct or high depletion effect in the Temuka Freshwater Management Unit to impose pro-rata partial restriction conditions based on the total consented.*

7.15. We note that this issue of the 2035 implementation timeframe is submitted on, in some detail, from both sides of the argument. In line with the discussion on Te Mana o te Wai in the Common Issues section of this report, we are concerned that effectively requiring modest steps up to 2035 to implement the new flow regimes will delay substantial environmental improvement for many years. It is acknowledged that there may be some gains through replacement consents, reviews and transfers being granted under more confining conditions. However, broad-scale improvement is not expected until the consent review is completed, and may indeed be limited until the consents are replaced. As is discussed elsewhere in this report, we suggest that a more ambitious timeframe, say five years after this part of PC7 becomes operative, to implement revised minimum flows and partial restrictions is better aligned with Te Mana o te Wai and the sustainable management of freshwater.

7.16. Timaru DC seeks that Policies 14.4.30 and 14.4.31 are amended to provide an exception for community water supply takes held by Timaru DC. It states that as notified, the Policies

---

1245 PC7-318.9, PC7-318.58, PC7-318.59
1246 PC7-295.15, PC7-295.13, PC7-295.14
1247 PC7-319.7, PC7-319.61, PC7-319.62
1248 The decision sought only shows the changes sought to the date using track changes, but by comparison of the text used in the submission under the notified plan, it is assumed that additional wording changes are sought.
1249 PC7-424.207, PC7-424.209, PC7-424.210
1250 The decision sought only shows the changes sought to the date using track changes, but by comparison of the text used in the submission under the notified plan, it is assumed that additional wording changes are sought.
1251 PC7-292.77, PC7-292.78
are more specific than the generic sub-regional Policy 14.4.10, which excludes community water supplies from all environmental flow and allocation regimes, and would not help protect its interest in providing for community-drinking water and community water supplies. Similarly, CDHB\(^{1252}\) seeks that Policy 14.4.31 is amended to provide an exclusion for surface and groundwater permits for community water supplies.

7.17. TCWP\(^{1253}\) and TCG\(^{1254}\) seek that the following clauses (e) and (f) are added to Policy 14.4.30, while Barkers Fruit Processing Ltd\(^{1255}\) also seeks the addition of clause (f) below:

\[ e. \text{ enabling the voluntary reduction in allocation to all existing water permits; and} \]

\[ f. \text{ Barkers Food Processing Limited demonstrating on or before 2026, increased efficiency for any replacement of CRC166228, or any variation thereof, and security of supply for community fire-fighting and drinking water, stock water and industrial processing water is protected by reserving a total flow rate of 20 L/s in addition to the allocations in Tables 14(i) to (k).} \]

7.18. We agree that recognition in Policy 14.4.31 that community water supply takes are not required to be reviewed in line with other water takes is appropriate at this point in time. However, in line with the discussion earlier, we note that in the future, such an exemption from a surface water take may be more difficult to justify in terms of Te Mana o te Wai.

7.19. These submitters consider that it is essential that there are as many mechanisms as possible available within the Temuka FMU to address over-allocation, including incentivising voluntary reduction of consented allocation through a controlled activity status; a further pathway to enable global management of consented allocation in each tributary, as provided for in the Opihi FMU; and that allocation to cover the current and expected needs of Barkers be reserved in recognition of its status as a community water supply take, as well as including an investigation of efficiencies in Barker’s community water supply take before the current consent expiry date.

7.20. Barkers Fruit Processing Ltd\(^{1256}\) seeks, in the alternate to the above changes, or in addition, that Tables 14(i) to 14(l) are amended to reserve 20 L/s for the community water supply take, through exempting the take from these environmental flow and allocation limits in the tables. TCWP\(^{1257}\) and TCG\(^{1258}\) also seek a new definition is inserted into Part B of PC7 that recognises the Barkers take\(^{1259}\) to be considered a community water supply.

7.21. We are less inclined to support, at a policy level, specific businesses or industrial process water being exempt, which is a consistent position reached through this report. In terms of other methods to reduce overallocation, the general policy direction of the Temuka FMU section is to reduce overallocation, so a minor change to Policy 14.4.30 is recommended, to ensure that other methods, in addition to the ones listed, are available and supported.

7.22. DOC\(^{1260}\) considers that higher minimum flows should be imposed at Manse Bridge, particularly for the November – February period, because habitat maintenance levels are higher for many

\(^{1252}\) PC7-347.17

\(^{1253}\) PC7-318.48, PC7-318.62, PC7-318.65, PC7-318.66

\(^{1254}\) PC7-319.28, PC7-319.30, PC7-319.39, PC7-319.40, PC7-319.48

\(^{1255}\) PC7-391.2, PC7-391.3

\(^{1256}\) PC7-391.6, PC7-391.7, PC7-391.8, PC7-391.9

\(^{1257}\) PC7-318.62

\(^{1258}\) PC7-319.28

\(^{1259}\) As authorised by CRC166228

\(^{1260}\) PC7-160.89
native invertebrate and fish species. It seeks an “appropriate” minimum flow for the Temuka River that will maintain habitat for indigenous invertebrates and fish species.

7.23. J Richardson seeks, in relation to various flow and allocation tables, including those for the Temuka FMU, that some changes to minimum flows appear merely cosmetic, and seeks that the figures for minimum flows are tightened up and more realistic figures used which will make a practical difference. Peelview Orchard seeks that flow and allocation tables take into consideration the high degree of variability associated with water takes across the years for fruit growers.

7.24. We note the submissions seeking different minimum flows. As the submissions do not provide details about what changes the submitters consider are appropriate, it is difficult to assess the submission points and make any recommendation. If the submitters wished to bring additional detail to the hearing, that would be helpful. However, as a minimum, we suggest that the removal of the overlap between the A and B blocks would be a simple step that would help to prevent the flow being induced to fall below the minimum flow. This has the effect of increasing the B Block minimum flow.

7.25. OWL along with three other submitters identify that no definition has been provided in Part B of PC7 to clarify the difference between A, B and C permit classifications within the Temuka FMU. OWL seeks the insertion of new dentitions for “A Permit”, “B Permit” and “C Permit” to align with Environment Canterbury’s historic approach to permits under the ORRP. Timaru DC, TCWP and TCG seek similar relief insofar as the definition of ‘A Permit’. In relation to A and B Permits, we consider the permit type is implicit in the Environmental Flow and Allocation Tables. Given this, we do not consider a definition of ‘C Permit’ is necessary.

7.26. Several submissions were received on the change in stream depletion methodology from the ORRP to Schedule 9 of the LWRP, and the effects this may have on currently consented takes. This affects both the Temuka and Opihi FMUs, with a full discussion provided in the Quantity – Opihi Specific Provisions section below.

Recommendation

7.27. We recommend the following:

a. Amend Tables 14(i) and 14(l) to delete the cultural allocation;
b. Delete Table 14(k) (C Permit regime);
c. Merge Tables 14(i) to 14(l);
d. Amend B Permit minimum flows to remove any overlap with A permits;
e. Bring forward pro-rata partial restriction regime.

---

1261 We note that Jellyman 2018 indicated that habitat for some key Temuka River values peak around the naturalised MALF, but a number of native fish and juvenile salmonid values have 80% of their maximum habitat met at 1,400 L/s.
1262 PC7-65.35, PC7-65.36, PC7-65.37
1263 PC7-5.6
1264 PC7-381.21
1265 Timaru DC (PC7-292.50), TCWP (PC7-318.5), TCG (PC7-319.3)
1266 Specifically Tables 14(l), 14(j), 14(k) and 14(l)

Introduction and provisions

8.1. The Timaru FMU is one of six FMUs to manage water quantity and quality in the OTOP sub-region. Part B of PC7 includes provisions that will apply in the Timaru FMU. This includes a definition of the ‘Timaru Freshwater Management Unit’ and an environmental flow and allocation regime for Levels and Seadown Plains Area (contained in Table 14(z)). There are no additional polices or rules specific to the Timaru FMU proposed, so the applicable sub-region wide provisions or region-wide provisions will apply. This section of the report discusses the environmental flow and allocation regime for the Levels and Seadown Plains Area. The Freshwater Outcomes, Limits and Targets are discussed in the Outcomes section of this report.

8.2. We understand the flow and allocation regime for Seadown Drain is currently managed via the consent process and has a common minimum flow of 150L/s. Table 14(z) sets out the environmental flow and allocation regime for the Levels and Seadown Plains Area (including Seadown Drain). The regime in Table 14(z) caps allocation at current levels, formalises the minimum flow of 150L/s and requires partial restriction as per existing resource consent conditions.

8.3. Several similar submissions were made in relation to Table 14(z) and a number of submissions also sought a new suite of provisions to enable the augmentation of Seadown Drain, all relevant submission points have been grouped and considered together in the section below.

Submission and Analysis

8.4. Ten submitters seek the minimum flow of 150L/s in Table 14(z) is decreased to 100L/s with partial restrictions commencing at a flow of 150L/s at the minimum flow measuring point. We understand this change is sought on the basis of an assessment undertaken by Ryder Consulting which completed a report for consent holders with minimum flows on Seadown Drain as part of a resource consent application to change minimum flows. This report proposed to replace minimum flow conditions on existing consents with conditions that managed restrictions based on a water level of 200 mm to protect in-stream values. The report prepared by Ryder Consulting concluded that a water depth of 200 mm equates to a flow of 100L/s.

8.5. We understand a number of water permits have minimum flow restrictions monitored on Seadown Drain, with a common minimum flow of 150L/s. Given this, we consider it is unlikely the proposed minimum flow will result in a significant departure from the status quo for many permit holders. Nevertheless, there is a balance to be struck between decreasing the minimum flow being unlikely to align with Te Mana o te Wai and the need to recognise this waterbody functions as a drain, rather than a natural watercourse. The drain does also contribute a substantial flow to Waitarakao/Washdyke Lagoon. Further, over time, it is expected that this drain will be increasingly affected by climate change and coastal processes. Environment Canterbury has initiated a further study to calculate the water balance for Waitarakao/Washdyke Lagoon. It is anticipated that this study may further clarify the role of

---

1267 For example; J Kyle (PC7-411.6), M E Oldfield (PC7-134.6), Waipopo Farm Limited (PC7-375.6), Belpher Farm Ltd (PC7-120.6), Meridian Energy (PC7-364.6)

1268 Ryder Consulting, 2016. Seadown Drain, Minimum flow requirement assessment
flow in Seadown Drain and the health of Waitarakao/Washdyke Lagoon. It is intended this information will be used to inform plan reviews in future.\textsuperscript{1269} Even if the Hearing Panel was of a view to decrease the minimum flow, we would recommend partial restrictions begin at the minimum flow plus the total allocation.

8.6. Several submitters\textsuperscript{1270} consider augmentation of Seadown Drain could assist in improving flows and water quality in Seadown Drain. To achieve this, all nine submitters seek a suite of provisions (including policies, rules and a new definition for “augmentation”) be included in Chapter 14 that specifically enables the augmentation of Seadown Drain. The proposed provisions include:

- A new policy to require the improvement of water quantity and/or quality by facilitating the augmentation of Seadown Drain;
- A restricted discretionary activity rule for the discharge of water into Seadown Drain for augmentation purposes, including proposed matters of restricted discretion; and
- A discretionary activity rule in the event any conditions of the restricted discretionary activity rule are unable to be complied with.

8.7. In addition, K & K O’Kane\textsuperscript{1271} also seeks the inclusion of a Seadown Drain Irrigation users group with the purpose of managing flows and nitrogen levels in Seadown Drain. This is sought by K & K Kane as a new definition, but it is unclear whether it sought the ‘Seadown Drain Irrigation users group’ as a definition in itself or as an addition to the definition of ‘augmentation’.

8.8. Specific policies and rules enabling augmentation in the Opihi and Pareora FMUs are proposed as part of PC7. These provisions provide for the operation of Opuha Dam and enable Timaru DC to augment the Pareora River. There are no region-wide provisions in the CLWRP that specifically allow augmentation to occur. However, region-wide policies 4.55 and 4.56 set out standards regarding the discharge and allocation of water as a result of moving water between catchments and water bodies. Policy 4.56 requires that, where water is introduced from outside a catchment (whether or not from outside a zone), the additional surface water flows are not available for abstraction unless either a new or revised environmental flow and allocation regime is introduced through a plan change or the existing environmental flow and allocation regime has been developed in anticipation of the additional surface water flows. We have not been able to find such detail in the submission, nor is there any information in the submissions regarding the source of water used to augment. Given the wider issue of overallocation in the OTOP sub-region, we consider the use of flows to augment may contribute to overallocation in the sub-region. Given this, we recommend the rejection of these submission points and continued reliance on the region-wide provisions to manage this.


\textsuperscript{1270} For example; Belpher Farm Ltd (PC7-120.2, PC7-120.3, PC7-120.4, PC7-120.5), D & D Cotter (PC7-284.2, PC7-284.3, PC7-284.4, PC7-284.5), D & D Cotter (PC7-284.2, PC7-284.3, PC7-284.4, PC7-284.5), J Kyle (PC7-411.2, PC7-411.3, PC7-411.4, PC7-411.5), M Oldfield (PC7-134.2), Phillips Farming Ltd (PC7-364.2, PC7-364.3, PC7-364.4, PC7-364.5), Waipopo Farm Ltd (PC7-375.2, PC7-375.3, PC7-375.4, PC7-375.5)

\textsuperscript{1271} PC7-354.3
9. Quantity – Opihi Specific Provisions\textsuperscript{1272}

Introduction and Provisions

9.1. The Opihi FMU is one of six FMUs established through PC7 for the purpose of managing water quality and quantity. Part B of PC7 contains a range of provisions that will apply within the Opihi FMU. This includes a description of the FMU in the introduction to Section 14, a definition of ‘Opihi Freshwater Management Unit’ in section 14.1A, and Freshwater Outcomes, Limits and Targets applicable to water bodies within the Opihi FMU (contained in Tables 14(a) and (c)). It also includes an environmental flow and allocation regime for the Opihi FMU (Tables 14(m) to (y)) supported by twelve new definitions, a series of specific policies setting out the approach to the flow and allocation regime, and rules for mainstem augmentation and transferring water permits to a Principal Water Supplier. This section of the report discusses these Opihi-specific provisions, except the Freshwater Outcomes, Limits and Targets and the surface water transfer provisions which are discussed in the Outcomes and Transfers sections (respectively) of this report.

9.2. Currently, the ORRP is the operative regional plan that aims to promote sustainable and integrated management of the natural and physical resources of the Opihi River and its tributaries as well as hydraulically-connected groundwater. The ORRP regulates the flows from Lake Opuha, in part by allowing the OEFRAG to provide advice to OWL on transitioning between variable monthly minimum flows and the release of water for ‘artificial’ freshes. The ORRP does not set environmental flow and allocation regimes for the tributaries of the Opihi River, instead relying on the consent process for setting and determining allocation limits for abstractors. In recent times, OEFRAG has also requested that Environment Canterbury issue water shortage directions under the RMA, although this is not prescribed by the ORRP.

9.3. The provisions in Part B of PC7 propose new environmental flow and allocation regimes for the un-augmented tributaries of the Opihi River and for the augmented Opihi mainstem that give effect to the freshwater outcomes sought by the community and the objectives of the CLWRP. For un-augmented tributaries, the regime includes either a two or three staged approach for increasing minimum flows, a cap on water allocation (reflecting current consented rates) and the introduction of partial restrictions. This approach is outlined in Policy 14.4.34. Despite the incremental improvement driven by these steps, the technical reporting shows that the improvements will only be ‘minor’ for some rivers\textsuperscript{1273}.

9.4. For augmented sections of the Opuha and Opihi mainstems, Part B of PC7 includes minimum flows as well as an ‘alternative management regime’ that applies to releases of water from Lake Opuha via the Opuha Dam to meet minimum flow requirements in the Opuha and Opihi mainstem. The alternative regime allows reduced minimum flows, taking into account lake level, the amount of snow pack in the catchment, and inflows into Lake Opuha from contributing tributaries of the North and South Opuha Rivers, Station Creek and Deep Creek. The aim of this regime is to extend the ability of the Opuha Dam to continue to augment the mainstem in times of dry climatic conditions. This approach is outlined in Policy 14.4.35.

\textsuperscript{1272} The planning author of this section is Matthew McCallum-Clark, and the technical authors are Daniel Clark and Shirley Hayward

9.5. Policies 14.4.34 and 14.4.35 are supported by Policies 14.4.36 to 14.4.40 which set out in detail the framework for the flow and allocation regimes. The regime is, in part, implemented through Rules 14.5.29 and 14.5.30 which manage discharges for augmenting the mainstems and Rules 14.5.31 and 14.5.32 which provide for transfers of AA and BA water permits to a Principal Water Supplier. Tables 14(m) to 14(y) establish the minimum flows, allocation limits and any restrictions for the Opihi FMU.

The Opuha Dam and its operation

9.6. Central to water quantity and quality in the Opihi FMU is OWL, which owns and operates Lake Opuha and the Opuha Dam.

9.7. The Opuha Dam, forming Lake Opuha, was commissioned in November 1998 and designed as a means to maintain environmental flows in the downstream catchment as a first priority, while also providing a supply of water for irrigation, urban and industrial purposes. Consequentially, the lake also provides amenity and recreational benefits to the local community, including fisheries and water sports. We acknowledge that the first priority of environmental flows may not have transpired in practice to the extent that was envisioned, with storage appearing to be prioritised over river flows.

9.8. The North and South branches of the Opuha River flow into Lake Opuha, which has a maximum operating capacity of 71.8 million m$^3$ (at an operating level of RL 392.2 m). The lake has a 22.2 m operating range, meaning the minimum operating level for the lake is RL 370 m.

9.9. Water from the lake is discharged via the dam, through a downstream weir and into the Opuha River. Consent limits require that:

- Water from the dam shall be discharged to maintain a flow of at least 1.5 m$^3$/s from the weir into the Opuha River; except
- When the lake level falls below RL 370 m, the discharge of water from the dam is limited to the sum of the flows in the North and South branches of the Opuha River. This restriction effectively allows for the Opuha River to maintain its natural flow when the lake is low, but not deplete lake levels.

9.10. Discharged water flows down the Opuha River, eventually joining the Opihi River below the Raincliff Bridge.

9.11. The take of water from the scheme is managed by OWL. Shareholders in OWL receive an entitlement to water, based on the number of shares they hold, with 1 share providing a theoretical 5,625 m$^3$ per season, based on a flow rate of 0.41336 L/s for an application rate of 25 mm/ha/week. Takes associated with the scheme can be split into two categories:

- Below the dam, from the Opuha and Opihi Rivers either with direct takes, or via four sub-schemes; and
- Above the dam, from tributaries to the North and South branches of the Opuha River, Te Ana Wai River and the Upper Opihi River.

---

1274 Resource consent CRC950579.3, condition (1)
1275 We understand the majority of the substantive resource consents for the Opuha dam and its operation expire around 2030.
1276 Resource consent CRC155950, condition (1)
1277 Resource consent CRC950577.5, condition (4)
9.12. Across both of these categories, only those abstractions from the Opuha River below the dam, and Opihi River below the confluence with the Opuha are able to physically utilise the discharged water. The remaining takes abstract natural flows that have not been augmented by the discharge from the lake. For the takes above the dam, OWL effectively offset the resulting reduced flows into the below dam rivers.

9.13. Within these physical categories, there are also different permit types for abstractions from the wider Opihi catchment, split out by being granted before or after the start of dam construction in 1994 (A and B), and whether or not the consent holder has shares in OWL (A or N).

9.14. Where affiliated with OWL, both types of take are effectively offset by the discharge of water from the lake, with minimum flow levels for the Opihi River at Saleyards Bridge to be maintained by OWL. These minimum flows are currently set out in the Opihi River Regional Plan, as well as on the OWL consent conditions\(^\text{1278}\). In the case of the Opuha and lower Opihi River, this offset is direct, while for the tributaries, the offset is to cover the reduced flows into the Opihi River from the tributaries.

9.15. In addition to maintaining the minimum flow in the Opihi River and providing for abstractive uses, OWL at times discharges water into the Opuha River to provide for artificial flushing flows.

9.16. While OWL operates the dam, some elements of the flow regime take more of a ‘system’ approach, almost a half-way house between a simple dam operator and an irrigation scheme. This is further complicated by the use of a natural watercourse to ‘convey’ irrigation water and takes being enabled on tributaries, provided additional water is released into the mainstem.

**Ecological flow needs of the lower Opihi River\(^{1279}\)**

9.17. References for ecological minimum flow recommendations put in front of the OTOP ZC for the Opihi catchment are in Memorandum 6 (Appendix 1, pages 56-71) in the Hayward 2019 report R19/80, prior to the NIWA ecological flow work being completed.

9.18. NIWA completed an ecological flow assessment of the lower Opihi River (below Saleyards Bridge) in August 2019 (Jellyman 2018)\(^{1280}\). This assessment was scheduled to occur earlier, with other ecological assessments of the Opihi FMU, but was delayed due to flow conditions caused by Cyclone Gita.

9.19. The key findings of this study for this reach of the river were:

- Flows in the range of 5.8 to 9.8 m\(^3\)/s provided adequate habitat for the four invertebrate taxa modelled and for food production.
- Flows of around 2.5 m\(^3\)/s provided adequate habitat for a range of native and introduced fish species and life stages including small and large eels, juvenile brown trout and salmonid spawning.
- Adequate habitat for adult brown trout was achieved at flows above 4.5 m\(^3\)/s.

---

\(^{1278}\) Resource consent CRC155950, condition (4).

\(^{1279}\) This section authored by Shirley Hayward.

9.20. Other ecological flow needs include consideration of flows needed to maintain a healthy lagoon and an open mouth to the sea, particularly to allow for fish migrations. The Opihi Lagoon has historically exhibited poor health during periods of prolonged mouth closure resulting in elevated water temperatures, and pH and dissolved oxygen levels that were detrimental to aquatic life.

9.21. Maintaining an open mouth to the sea depends on a complex interaction of river flow regimes and sea conditions. Todd (1983) determined that river inflows to the lagoon below 6 m$^3$/s greatly increased the likelihood of mouth closure, while river inflows of at least 12 to 17 m$^3$/s were generally required to naturally breach the coastal barrier. McSweeny et al (2016) suggested that mouth closures appeared more likely when flows of less than 10 m$^3$/s occurred for longer than several weeks.

9.22. Natural flow variability including floods and freshes are important components of flow regimes that support healthy river ecosystems. One of the significant impacts of installation of a dam across a flowing river is loss of flow variability downstream and therefore loss of the many instream biological and morphological benefits of flow variability. Of course, this is also the purpose of the storage facility to capture and store high flow events to provide for consumptive, non-consumptive and environmental flow releases at a later date. Therefore, incorporating an element of flow variability is an important consideration when designing on-river artificial storage systems (Lessard et al., 2012).

9.23. One of the key adverse downstream effects of damming a river is increased persistence of nuisance and potentially toxic periphyton communities. This has certainly been the case in the flow-regulated reaches of the Opuha and Opihi rivers. The potentially toxic Phormidium cyanobacteria rapidly became established after the dam was commissioned, followed by establishment of the invasive algae, Didymosphenia geminata (didymo). Kilroy and Wech (2017) determined that flows in the order of 5 times the median flow were required to effectively scour nuisance periphyton from the lower Opihi River and flows 10 times median flows were needed to effectively remove Phormidium. That is flows in the range of 50 to 100 m$^3$/s are needed to remove periphyton (including Phormidium) growths.

**Submissions and Analysis**

9.24. There are numerous submitters on the Opihi FMU flow regime, seeking a range of outcomes, however the majority express relatively consistent views that reflect the submission and decisions requested by OWL. OWL, and other submitters supporting OWL, generally seek to retain something close to the status quo (with the addition of an amended alternative management regime) and consider that it is necessary to retain the flexibility provided by the current approach. In relation to the alternative management regime proposed through

---

1284 For example, Timaru DC, AMWG, OFAWP, Glenfield Farm, Wainono Dairy Ltd, Raumea Farms Ltd, I & H McMillan, H Jackson.
1285 For example; Morelea Farm (PC7-67.6), J R Hart (PC7-137.2), P Brosnahan (PC7-248.11), VIBERi New Zealand Ltd (PC7-418.2), H Pearse (PC7-445.35)
PC7, the majority of submitters support the intent of an alternative regime to better manage extreme climatic conditions but suggest amendments to improve the flexibility or clarity of the regime.

9.25. The existing regime managing surface water quantity in the Opihi FMU is complex. PC7 has introduced a more complex regime, largely due to the number of water bodies affected, varying dates for changes to the regimes, and the operating requirements and management of the dam. We consider that the content of the policies in particular is highly prescriptive and repeats elements of the flow and allocation regime set out in the relevant tables, or matters that would be expected to be canvassed during the resource consent process. To simplify the provisions while retaining the overall intent, we recommend a range of amendments to the policies to ensure that they outline how the objectives will be achieved but do not duplicate the content of the rules and flow and allocation regimes.

9.26. The following sections group the submissions and analysis by topics, as follows:

- General submissions
- Terminology
- Role of OEFRAG
- Minimum flows and alternative management regime
- Artificial freshes
- Partial restrictions
- Recognition of the current regime
- Augmentation
- Surface water transfers to a principal water supplier

9.27. For each of these topics there are compromises and different options available to the Hearing Panel.

**General submissions**

9.28. J Richardson has provided a general submission on all minimum environmental flow and allocation regime tables in the Opihi section, seeking that minimum flows use more realistic figures that might make a practical difference, rather than appearing to be merely cosmetic. The submitter has provided no further details on whether the minimum flows be increased or decreased, outside stating that some of the changes to minimum flows appear to be merely cosmetic.

9.29. P Driver has provided a general submission on minimum environmental flow and allocation regimes across the OTOP zone, seeking that PC7 needs to be improved to create ecologically, culturally and socially healthy flows across the catchment. Dr Driver considers that the proposed flow and allocation regime does not reflect the preferences of the zone committee or the wider community as a whole, given the regime gives first priority to economic factors, rather than the environmental, cultural and social uses prioritised by the CWMS. Dr Driver highlights the Temuka river as one that will remain over-allocated for at least a decade under the PC7 regime.

9.30. We acknowledge the submitters’ concerns around the outcomes of the PC7 regime, and the priorities on which these are based. Overall, we consider the PC7 minimum flow and

---

1286 PC7-65.38, PC7-65.43, PC7-65.48
1287 PC7-22.1
allocation regimes have been designed to have a tangible positive effect on the ecosystem health of surface water bodies in the Opihi catchment, while also balancing and providing for the ongoing take and use of water for irrigation, urban, industrial and other uses. As discussed elsewhere in this report, the need to further progress toward Te Mana o te Wai, with flow regimes that protect the health of waterbodies.

9.31. While many submitters seeking changes that are set out in detail are water users, there remain a number of submitters who raise concerns and seek greater environmental improvement and shorter timeframes for implementation. We understand this diversity of views was an issue that the ZC struggled with and ultimately was not able to reconcile. While the assessment below focusses on the outcomes sought by OWL, we have considered those submissions seeking greater environmental improvement, and in a shorter timeframe, and particularly those seeking recognition of Te Mana o te Wai closely.

9.32. Overall, we have suggested some significant changes to the flow regime set out in PC7, but still within the context of the notified provisions. Only a further incremental step towards recognition of Te Mana o te Wai is recommended – in our opinion, to recognise Te Mana o te Wai and place the health of these waterbodies at the forefront of decision making would involve some fundamental changes to the flow regimes, the frequency of freshes, and management of the lake to reduce stratification. These kinds of changes would have obvious consequences for farming activities in this FMU.

**Submissions substantially different to that of OWL**

9.33. Forest & Bird\(^\text{1288}\) questions the need for separate reference to shareholders and non-shareholders in relation to the policy guidance for surface water flows in the Opihi FMU. Through the ORRP, and to be continued in PC7, affiliated and non-affiliated water takes have different levels of reliability and restriction. For affiliated permits:

- All takes are subject to a minimum flow on the Opihi River at Salesyards Bridge; and
- All takes on tributaries receive the same tributary specific minimum flow.

9.34. For non-affiliated permits:

- A permit takes are subject to an unmodified minimum flow on the Opihi River at Salesyards Bridge;
- B permit takes are to a recorded minimum flow on the Opihi River at Salesyards Bridge;
- A permit takes on tributaries receive the same tributary specific minimum flow as affiliated takes; and
- B permit takes on tributaries receive higher tributary specific minimum flows.

9.35. We consider it useful to retain the references to the different permit types and flow regimes, particularly in clauses (b)-(d) of Policy 14.4.36, as this reflects the reality of the dam structure and operating regime on the river.

9.36. SCCC\(^\text{1289}\) seeks that more time is provided for affected consent holders to adjust to the proposed minimum flows and partial restrictions across the OTOP sub-region. The reasoning for this is that some existing consented takes may see a significant drop in reliability, which will need to be navigated by consent holders in relation to their future operations. The

\(^{1288}\) PC7-472.178, PC7-472.179, PC7-472.182

\(^{1289}\) PC7-340.2, PC7-340.3, PC7-340.19
modelling provided by Daniel Clark\textsuperscript{1290} shows the availability for either PC7 regime sits at or above 95% for mainstem affiliated takes, although we acknowledge that this is likely to differ for tributary takes. We appreciate the submitter’s concern in relation to existing users, but acknowledge that without change, the existing conditions will persist, with little recognition of Te Mana o te Wai.

**Terminology**

9.37. This section discusses the provisions in Part B of PC7 that introduce proposed definitions for ‘AA’, ‘AN’, ‘BA’, ‘BN’ and ‘KIL’ Permits.

9.38. The type of permit in the Opihi FMU (AA, BA, AN, BN) depends on: whether a water permit to take and use surface water, or groundwater with a direct, high or moderate stream depletion effect was granted prior to or after 30 July 1994 (before construction began on the Opuha Dam in 1995); and whether the consent holder holds shares in OWL. The four types of permits dependent on these two conditions are identified in Table 1.

**Table 1: Types of Permits in the Opihi FMU**

<table>
<thead>
<tr>
<th></th>
<th>PRIOR to 30 July 1994</th>
<th>AFTER 30 July 1994</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opuha Water Ltd</td>
<td>AA</td>
<td>BA</td>
</tr>
<tr>
<td>Shareholder</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NOT Opuha Water Ltd</td>
<td>AN</td>
<td>BN</td>
</tr>
<tr>
<td>Shareholder</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9.39. The KIL Permit is a permit to take and use surface water, or groundwater from the Kakahu Irrigation Scheme which has a direct, high or moderate stream depletion effect, if the consent holder has shares in OWL.

**Submissions and Analysis**

9.40. There were two submissions made which both partially oppose the ‘AA’, ‘BA’, ‘AN’ and ‘BN’ water permit definitions. OWL\textsuperscript{1291} and Timaru DC\textsuperscript{1292} seek amendment to recognise that shares in OWL are not the only means by which consent holders can be supplied water in the Opihi FMU. OWL identify that permits have historically been granted by Environment Canterbury to parties who hold an entitlement by way of “shares, agreements or other entitlement” (and refer to condition (4) of CRC92010A.3 as an example). Timaru DC highlight inconsistencies due to shares being leased to irrigators by Timaru DC and agreements to extract water for the community water supply take. Both submitters agree that consent holders should be entitled to water supply by OWL “by way of shares, agreements or other entitlements”. Mill Farm\textsuperscript{1293} opposes all water permit definitions on the basis that the definitions refer to ‘shares’ rather than entitlements or agreements from the dam company.

9.41. We consider that changing ‘AA’, ‘AN’, ‘BA’, ‘BN’ and ‘KIL’ Permits to not only include shares in, but also agreements and other entitlements with, OWL has the potential to result in overallocation of the water. This would be inconsistent with the NPSFM and require recalculation of water allocations for the catchments. It could also put the management of

\textsuperscript{1290} Additional technical reporting included in Appendix D6
\textsuperscript{1291} PC7-381.12, PC7-381.13, PC7-381.14, PC7-381.15
\textsuperscript{1292} PC7-292.46, PC7-292.47, PC7-292.48
\textsuperscript{1293} PC7-471.4
water and prioritisation effectively in the hands of OWL. While inclusion of shares, agreements or other entitlements would appear to be consistent with historical reference to water supplied by OWL, we are concerned that there is a lack of transparency about what water is subject to these agreements. Clarity from the submitters, and potentially some limitations on what could be included, would be appreciated.

9.42. OWL and Timaru DC also submitted on the ‘KIL Permit’ definition. Timaru DC seek an amendment to the ‘KIL’ definition concerning the limitation of shares in OWL, similar to the change sought for ‘AA’, ‘BA’, ‘AN’ and ‘BN’ water permit definitions. OWL supports the definition of ‘KIL Permit’, however, it seeks to replace the term with ‘Kakahu Permit’. They consider that use of the term ‘KIL Permit’ has potential to be confused with the former “Kakahu Irrigation Ltd”, which was the irrigation company that originally established the Kakahu Irrigation Scheme.

9.43. We consider that it is useful (marginally) to change the name of ‘KIL permits’ to ‘Kakahu Permit’ to clarify that reference is being made to permits in this catchment area, as opposed to the former ‘Kakahu Irrigation Ltd’.

Role of OEFRAG

9.44. OEFRAG was established through the ORRP as the group responsible for advising on modifying the environmental release flows, within the provisions of the ORRP. Currently, OEFRAG advises OWL on transitioning between variable monthly minimum flows required under the ORRP and the release of water for artificial freshes. OEFRAG has also played a role in advising Environment Canterbury on the issuing of Water Shortage Directions under the RMA, some of which have been put in place pre-emptively to prevent a potential shortage of water. A number of submitters have sought that PC7 recognises the existing role OEFRAG plays in managing the flow in the Opihi mainstem.

9.45. The need for pre-emptive measures and the number of Water Shortage Directions issued in recent years indicates that the current flow and allocation regime in the ORRP is not meeting the needs of the community. To address this issue, PC7 provides an alternative management regime that may be adapted to manage releases from the Opuha Dam that is based on triggers set in the Plan. While we recognise the knowledge and experience of OEFRAG, the provisions of PC7 are considered to provide a more certain and enforceable flow and allocation regime that will clearly specify the minimum flows set in the CLWRP and the circumstances when changing between minimum flows is appropriate. We therefore do not support submissions seeking that PC7 retain the existing role of OEFRAG.

Minimum flows and alternative management regime

9.46. PC7 proposes a policy and rule framework which enables augmentation of the Opihi and Opuha Rivers, via the Opuha Dam, to provide supplementary flows for abstraction while protecting the ecological health of the rivers and their tributaries through minimum flow requirements. In addition, PC7 provides for a two-tiered alternative minimum flow regime which is intended to respond to periods of climatic dry conditions and climate change by reducing minimum flow requirements in the Opihi River based on specified triggers. The

---

1294 PC7-381.16, PC7-381.17
1295 PC7-292.49
1296 For example; J R Hart (PC7-137.2), SCCC (PC7-340.22), J Pearse (PC7-396.2), G P Scott (PC7-403.2), VIBERi New Zealand Ltd (PC7-418.2), Mill Farm (PC7-471.3).
alternative management regime revises minimum flow restrictions for AA and BA permits when either Level 1 or Level 2 triggers are met.

9.47. The minimum flows proposed in PC7 are staged increases from the current minimum flows set out in the ORRP or through consent conditions. Submissions on these provisions range from those in full support1297 to those in full opposition1298. Some submitters have sought specific alternative flows while others have stated more general preferences, such as to revise the flows based on data/evidence/further consultation1299, to require higher flows1300, or to provide for the ecological health of rivers within the life of the CLWRP1301. The majority of submitters have sought amendments to the tables setting out the minimum flows that would revert back to the existing minimum flows as set out in the ORRP and current consent conditions. While we agree in principle with OWL and AMWG that there may be a better way of managing the lake and discharges to meet environmental and irrigators needs under various climate scenarios, we do not consider retaining the status quo is appropriate as the technical reporting shows that the existing flow regime is resulting in degraded waterbodies. Simply put, retaining the status quo would not recognise Te Mana o te Wai and the need to improve degraded waterbodies.

9.48. OWL1302 and other submitters1303 have sought amendments to the alternative management regime on the basis that the model proposed by PC7 does not provide sufficient flexibility for the management of storage in the Lake Opuha catchment and would compromise achievement of the outcomes sought by the OTOP ZIPA. The amendments proposed by these submitters broadly provide more water for the river during the summer and less at other times of the year. Specifically, the amendments sought include new policies1304 and rules1305, amendments to proposed policies1306 and rules1307 and a range of new tables1308 be included in Part B of PC7.

9.49. The alternative flow regime proposed by OWL and AMWG for the Opihi River at Saleyards Bridge differs from the current and PC7 regime most notably in higher minimum flows in the January and February summer period (for full availability and Level 1 regimes). Based on the NIWA assessment, the proposed AMWG minimum flow regime for this period would provide adequate habitat for adult brown trout (which supports a locally important trout fishery). This would also support invertebrate habitat and food production. The proportion of suitable habitat for some native species would be less at this flow than at the current January/February flow regime, but this is unlikely to constrain native species because of the overall high total habitat availability for most species across a wide range of base flows.

1297 A McGregor (PC7-98.8)
1298 J Pearse (PC7-396.1), H & J Pearse (PC7-448.1)
1299 Guiney Family Trust (PC7-87.5, PC7-87.6)
1300 A Brown (PC7-109.18)
1301 For example; L Black (PC7-128.7), A Cockburn (PC7-163.7), S Campbell (PC7-164.7), C Bebbington (PC7-320.7), C Christensen (PC7-321.7)
1302 PC7-381.149, PC7-381.162
1303 For example; M Hawkins (PC7-97.50), Raumea Farms Ltd (PC7-110.12), Biggs Agriculture Ltd (PC7-221.22), W D O’Sullivan (PC7-240.30), P Brosnan (PC7-248.13)
1304 Referred to in submissions as Policy 14.4.X
1305 Referred to in submission as Rules 14.5.4A and 14.5.5A
1306 Including Policies 14.4.35, 14.4.36, 14.4.37, 14.4.38, 14.4.39
1307 Including Rules 14.5.4, 14.5.6, 14.5.7, 14.5.8, 14.5.12, 14.5.13, 14.5.29, 14.5.30, 14.5.31, 14.5.32
1308 Referred to in submissions as Tables 14(v)(i), 14(v)(ii), 14(v)(iii), 14(x)(i), 14(x)(ii) and 14(x)(iii)
9.50. The proposed spring and autumn minimum flows are, amongst other things, aiming to provide for fish passage and fish migrations, particularly through the Opihi Lagoon mouth. Higher flows during these periods (especially April and October) as provided by PC7 Step 2 increase the likelihood of maintaining an open lagoon mouth. The AMWG proposed full availability flow regime is unlikely to significantly impact on maintaining an open mouth during these months. However, the proposed Level 1 regime may impact on the ability to maintain an open mouth during these critical fish migration periods. This could also impact on the whitebait fishing season (August to November).

9.51. The Level 2 regime proposed by AMWG could at times have a significant impact on the ability to maintain an open mouth, particularly if the proposed minimum flows were sustained for several weeks.

9.52. We understand that there is a fine balance between minimum flows in the river, the amount of water made available for abstraction, climate variability, the level of the lake and the frequency and size of summer freshes. Analysis by Environment Canterbury\(^\text{1309}\) indicates that the amendments proposed may result in higher lake levels, requiring outflows to be reduced earlier than under the PC7 framework. It also increases the frequency with which Level 1 and Level 2 flows are triggered (15 out of 20 years and 4 out of 20 years respectively; Clark, 2020). Overall, lake levels are retained at higher levels under the OWL proposal and flows are reduced earlier to protect flows in more extreme years, serving to prioritise lake storage over river flows and water availability. The availability of water for abstraction therefore varies across the year, with less water available through spring and early summer. An important and valuable component is an increased summer minimum flow.

9.53. Based on this analysis, we note that the proposal by OWL has a slightly different emphasis, and has some environmental benefits in terms of summer minimum flows. However, the regime proposed by OWL introduces considerable additional complexity into a regime that is already highly complex, and we have concerns about the ability to undertake compliance monitoring as required by Section 35(2)(d) of the RMA. In our opinion, with these difficulties, it is difficult to say if the submitters’ proposal is more or less efficient or effective. Environment Canterbury has undertaken additional modelling and considers that there is an alternative option available to the regimes proposed by PC7 and OWL, which may be better for both abstractors and the river system, at the expense of maintaining lake levels. This has increased risk of the lake emptying in dry years (as has happened before), and may provide less water availability for artificial freshes to be released in summer.

9.54. At this time, we are recommending a simplified regime, similar to that sought by OWL, but with a more outcomes-focused set of policies, a simpler (and formula-based) two-tiered minimum flow regime, and allocation limits that capture all “A” and “B” permits. However, evidence from the submitters on how to best achieve the balance between competing interests and the information requirements to implement the formula-based approach would be very helpful.

**Artificial freshes**

9.55. Artificial flushing flows, or freshes, are needed in the Opihi catchment to prevent the accumulation of periphyton and to assist with managing nuisance algal blooms that have been an ongoing issue in the Opuha River downstream of the dam (Jellyman, 2018). Currently freshes can be recouped by OWL reducing minimum flows following the flushing flow being

\(^{1309}\) See Appendix D.6
released. Policy 14.4.35(e) directs the size and frequency of the artificial freshes required under the regime proposed by PC7. OWL\textsuperscript{1310} and other submitters\textsuperscript{1311} have sought amendments to provide for alternative regimes, most commonly three small freshes or alternatively one large and one small fresh with supporting definitions for these terms\textsuperscript{1312}. The definitions sought specify that freshes are voluntary releases of water. The AWMG\textsuperscript{1313} has sought amendments to the minimum requirements for artificial freshes that take into account the duration of the Level 2 regime.

9.56. The type of small freshes proposed by submitters have been described as ‘operational’ and assist with clearing didymo in the Opuha Gorge that can cause blockages in the intake of the Kakahu Irrigation Scheme but have limited effectiveness for clearing periphyton in the Opuha River downstream of Skipton Bridge and almost no influence on the Opihi River (Measures, 2020\textsuperscript{1314}). Modelling shows that the types of freshes sought by submitters would occur many times, including when changing between monthly requirements, irrigation demands requiring more water, or there are high flows in the Upper Opihi or Te Ana Wai. The amendments proposed by AMWG would increase the complexity of the regime considerably, posing problems for compliance monitoring by Environment Canterbury.

9.57. As stated earlier, the river system is now highly modified, due to the dam structure, but the need for freshes that are effective at clearing periphyton and opening the river mouth, particularly in summer months is clear. Whether the PC7 regime is adequate for this is doubtful, and most submitters appear to seek a regime with reduced (either volume or frequency, or both) summer freshes. We do not support this further reduction of freshes. The changes proposed by submitters would also allow OWL to recoup volume for changes in flow which occur as part of day-to-day operations or changes in natural flows (Clark, 2020). We consider that the ‘recovery’ of water used for a fresh is difficult to justify – it would appear to be exacerbating the very conditions that a fresh is intending to mitigate. Broadly, we consider that the less onerous changes proposed by submitters would not achieve the objectives of the Plan or restore the health of the river. For this reason, we recommend the submission points seeking new definitions in relation to freshes be rejected.

9.58. We are also troubled by the highly prescriptive nature of Policy 14.4.35, particularly in its specification of the size and frequency of freshes. We are of the view that the policies of the CLWRP should explain outcomes and how they are to be achieved. As notified, the policy specifies a ‘formula’, with only limited identification of what it is trying to achieve. We consider this kind of detail is better set at the time of renewing or reviewing resource consents held by OWL, when current knowledge and higher-level policy frameworks and caselaw can be taken into account.

**Partial restrictions**

9.59. Lake Opuha is fed by the North and South Opuha rivers. The Opuha River exits Lake Opuha and is joined by the Upper Opihi and Te Ana Wai rivers further down the mainstem. The ORRP

\textsuperscript{1310} PC7-381.129
\textsuperscript{1311} For example; Fish & Game (PC7-351.55), AMWG (PC7-385.27), Phillips Farming Ltd (PC7-364.34), Mackenzie College (PC7-487.36)
\textsuperscript{1312} For example; AMWG (PC7-385.6), Fish & Game (PC7-351.32), OWL (PC7-381.122), Tepuni Partnership (PC7-412.13), R Fraser (PC7-358.5),
\textsuperscript{1313} PC7-385.27
\textsuperscript{1314} Measures, R (2019) Including variability within the minimum flow regime for the Opuha and Opihi rivers.
NIWA client report for Opuha Water Limited, NIWA client report 2019109CH, May 2019
does not set partial restrictions for any of these tributaries which creates a risk that minimum flows are breached by abstractions. Some partial restrictions have been initiated in the tributaries – for example, the Cascade Irrigation Scheme on the South Opuha River has self-imposed restrictions in order to maintain a residual flow at the minimum flow monitoring point. PC7 introduces two types of partial restrictions: pro rata and stepped. Tables 14(m) to 14(y) contain the flow and allocation regimes for the Opihi and Opuha Rivers as well as their tributaries and set either pro rata or stepped partial restriction requirements depending on the water body and the type of permit exercised.

9.60. Pro rata partial restrictions are defined in Section 14 and are proportional reductions in abstractions whenever the minimum flow is less than the sum of the minimum flow and the applicable allocation limit. The purpose of pro rata partial restrictions is to prevent minimum flows being breached as a result of abstractions. OWL\textsuperscript{1315} and other submitters\textsuperscript{1316} have sought amendments to the pro rata provisions and definition to limit the restrictions on the North Opuha, Upper Opihi and Te Ana Wai Rivers only to AA and BA permits, on the basis that AN permits are already subject to Opihi mainstem minimum flows which would require ceasing abstraction before the restrictions in the tributaries are triggered, and the inclusion of AN permits in the partial restriction “management block” would reduce the amount of water available for abstraction under AA and BA permits. We do not consider the current provisions are problematic, despite the different effects of the restrictions on AN permits. The amendments proposed would add complexity to the concept of pro rata partial restrictions without changing the implementation or effect of the provisions, and risk the tributary minimum flows being breached.

9.61. Stepped partial restrictions are also defined and are the flows at which abstractions must reduce at either 25%, 50% or 75% increments to avoid the minimum flows being breached as a result of abstractions. OWL\textsuperscript{1317}, supported by other submitters\textsuperscript{1318}, considers that the stepped partial restrictions at Levels 1 and 2 of the alternative management regime do not provide sufficient flexibility to respond to changes in climatic conditions and so do not achieve the concept of adaptability expressed in OTOP ZIPA Recommendation 5.3.1. They have sought the inclusion of an additional table setting out fortnightly volumetric restrictions for Levels 1 and 2 and when the level of Lake Opuha is less than 373 metres. OWL has sought the deletion of the definition of ‘stepped partial restrictions’ on the basis that the term does not appear anywhere in Section 14.

9.62. As noted in the submission by OWL, Environment Canterbury staff have previously expressed concerns about the ability to monitor and enforce earlier proposals by the AMWG. We accept that OWL has access to considerable data. However, we consider it is a primary responsibility of Environment Canterbury to monitor and enforce flow regimes and ultimately protect the environment. We hold strong reservations about the stepped reductions regimes\textsuperscript{1319}, their timeframes for implementation, and the requested fortnightly volumetric limit. We are concerned that these aspects will not actually prevent flows being drawn below the minimum flow by abstraction and we question the ability to monitor the regime. This is particularly

\textsuperscript{1315} PC7-381.19
\textsuperscript{1316} For example; M Hawkins (PC7-97.1), T Henderson (PC7-115.1), P H Ulrich (PC7-252.1), S & J McAtamney (PC7-440.1)
\textsuperscript{1317} PC7-381.149
\textsuperscript{1318} For example; Raumea Farms Ltd (PC7-110.12), B Caird (PC7-175.35), Biggs Agriculture Ltd (PC7-221.22), Ashwick Flat Dairy Farms (PC7-283.24), J & E Dawson (PC7-378.3)
\textsuperscript{1319} While we are generally supportive of a stepped reductions regime, without specification of a block size in Tables 14(v) and 14(w), it is impossible for Environment Canterbury, or consent holders to administer or for the public to have confidence that the flow is not being induced to fall below the minimum flow.
relevant during periods when the minimum flow is reduced below the ‘normal’ minimum flow, due to a shortage of water. In our opinion, that period of reduced minimum flow should be minimised and a return to the ‘normal’ minimum flow occur as possible, with an effective partial restriction, rather than a ‘stepped partial restriction’ regime being introduced as soon as possible.

**Recognition of the current regime**

9.63. OWL\(^{1320}\) and other submitters\(^{1321}\) have sought inclusion of an additional table that incorporates the current Opihi mainstem environmental flow and partial restriction regime into Section 14. The stated purpose is to provide for continuation of the existing flow and allocation regime set out in the ORRP until the stepped increases in minimum flows are required in 2022 and/or 2025, and 2030 (as applicable). In our view, that is of negligible benefit, as any resource consents that are sought in the intervening period can take into account the existing flow regimes in the currently operative plans, as well as looking forward to the (near) future regimes in PC7.

**Augmentation**

9.64. Proposed Plan Change 7 to the CLWRP proposes new Rules 14.5.29 and 14.5.30 which provide for the augmentation of the Opuha and Opihi mainstems through discharges of water from Lake Opuha via the Opuha Dam. Rule 14.5.29 provides for these discharges as a discretionary activity subject to conditions (including compliance with the flow and allocation regime) and Rule 14.5.30 prohibits discharges which do not comply with the conditions of Rule 14.5.29. OWL\(^{1322}\) and other submitters\(^{1323}\) have sought amendments to Rule 14.5.29 to replace the discretionary activity status with controlled activity status, and include matters of control (mirroring those of region-wide Rule 5.125C) and a requirement for an operational management plan setting out how the consent holder will decide when to apply the alternative management regime, the timing and volume of releases from the Opuha Dam, and the methodology for transitioning flows between months. Those submitters\(^{1324}\) have also sought amendments to Rule 14.5.30 to change the activity status from prohibited to non-complying.

9.65. Environment Canterbury must grant consent for controlled activities but may impose conditions. In our opinion, it is important that Environment Canterbury retains the ability to decline consents where augmentation would not support the achievement of the objectives of the CLWRP or the adverse effects are not acceptable. This is particularly relevant where we recommend policies to be rather more outcome oriented. The condition proposed by submitters requiring an operational management plan is linked to the amendments sought regarding the construct and operation of the alternative management regime proposed by PC7. We do not consider it is appropriate to afford the level of discretion sought by submitters to consent holders. As outlined previously, we consider that a regime which operates via

---

\(^{1320}\) PC7-381.150

\(^{1321}\) For example; Cascade Irrigation Race Ltd (PC7-159.21), J & L Chapman (PC7-182.2), Coles Farms (PC7-223.21), Tregellen Farm Ltd (PC7-361.36), T Lambie (PC7-410.7), Vetlife Ltd (PC7-456.26)

\(^{1322}\) PC7-381.141, PC7-381.142, PC7-381.143, PC7-381.144, PC7-381.145

\(^{1323}\) For example; W D O’Sullivan (PC7-240.28, PC7-240.29, PC7-240.46, 2 PC7-40.47), Monument Road Farm Ltd (PC7-370.16, PC7-370.17, PC7-370.52, PC7-370.53), H Pearse (PC7-445.33, PC7-445.34, PC7-445.61, PC7-445.62)

\(^{1324}\) For example; Fox Peak Station Ltd (PC7-166.39), TDC (PC7-292.115), OWL (PC7-381.146), AMWG (PC7-385.15), Tepuni Partnership (PC7-412.22)
parameters set in the CLWRP rather than discretionary decision-making is more certain for the wider community and will assist with preventing breaches of minimum flows. Overall, we do not support the amendments described above to Rules 14.5.29 or 14.5.30.

9.66. Similarly, we do not support the change in activity status in Rule 14.5.30 from prohibited to non-complying. This is primarily because Rule 14.5.29 only provides a consenting pathway for discharges that meet the flow and allocation regimes set out in the relevant tables in Section 14. Those which do not meet those requirements risk over-allocation of the water bodies. Prohibited activity status is appropriate for implementing the direction of the NPSFM to prevent over-allocation of the quantity of water.

**Surface water transfers to a principal water supplier**

9.67. Policy 14.4.40 provides for the transfer of AA and BA surface water permits to a principal water supplier where the result is a single permit authorising all of the transferred abstractions. Rule 14.5.31 provides for these transfers as a discretionary activity subject to meeting specified conditions (including that there is no net increase in the total instantaneous rate of take beyond what is authorised by the existing permit, determined as the lesser of either the consented rates or shareholding entitlements). Applications that do not comply with the conditions of Rule 14.5.31 are non-complying activities under Rule 14.5.32.

9.68. OWL and other submitters have sought to delete the part of condition (1) of Rule 14.5.31 that prevents increases beyond either the current consented rate or shareholding entitlements with OWL (whichever is the lesser). This is requested on the basis that the condition does not recognise the role of “carriage water” for sub-scheme consents that are not covered by shareholding entitlements or water supply agreements with OWL. Discrepancies between consented abstractions and shareholding entitlements creates difficulties for Environment Canterbury in monitoring compliance with consents and flows in the rivers. Given water quantity in the Opihi FMU is generally considered to be fully allocated, and PC7 proposes a stepped increase in minimum flows in the rivers, we consider it is appropriate for Rule 14.5.31 to require the lesser of the two potential rates of take in order to facilitate a transfer.

9.69. OWL supported by Federated Farmers has sought to retain Rule 14.5.32 subject to one amendment discussed below. Mackenzie College has sought deletion of the rule. We consider it is appropriate to have a specific rule setting out the planning requirements if the conditions of Rule 14.5.31 are not met and therefore do not support its deletion.

9.70. OWL has also sought amendments to both rules to expand their scope to include Kakahu permits. Kakahu permits are affiliated to OWL in the same way as AA and BA permits, therefore we agree it is appropriate to amend the rule as sought.

---

1325 PC7-381.79
1326 For example, D Davies (PC7-168.43), Coles Farms (PC7-223.44), Annfield Dairies (PC7-373.26), Ashwick Flat Dairy Farms (PC7-283.48), Barwoods Ltd (PC7-298.43)
1327 PC7-381.81
1328 PC7-430.264
1329 PC7-487.31
**Tributaries**

9.71. As part of its wider flow and allocation proposal, OWL\textsuperscript{1330} seeks that a flow and allocation regime is included in Table 14(m) for an unnamed tributary to Lake Opuha. Fox Peak Station\textsuperscript{1331} make the same request, (but reference Table 14(n)) as the owner of the property to which affiliated resource consent CRC150164 is linked. Both submitters seek that the tributary is included at its consented rate. The tributary runs parallel to the South Opuha River, at a distance of 500 m to the south\textsuperscript{1332}, and flows directly into Lake Opuha. Daniel Clark has advised that this take has been included in the Resource Consents Inventory in the South Opuha Allocation at the consented rate of 8.3 L/s, and as a BA take would receive the South Opuha minimum flow.

9.72. Fox Peak Station\textsuperscript{1333} has also requested the inclusion of Station Stream and Deep Stream in Table 14(y), which sets the flow and allocation regime for BN permits across the Opihi FMU. The submitter holds consents for BN takes from these waterways, and seeks that they are included at their consented rates\textsuperscript{1334}.

9.73. We acknowledge the omission of these waterways in setting the flow and allocation regimes in the OTOP sub-region. All three waterways flow directly into Lake Opuha, so are not otherwise covered by proposed regimes. Under the proposed rule framework, any takes from waterways that do not have a minimum flow or allocation limit set are unable to meet Rules 14.5.4 or 14.5.5, so would be prohibited under Rule 14.5.6, effectively ruling out the replacement of these consents when they eventually expire. We agree that it would be useful to include all three waterways in the relevant table, to provide for these existing takes going forward, with Daniel Clark recommending that the North Opuha BN minimum flow would likely reflect the flow conditions of these smaller tributaries that flow directly into the lake.

**Tables and Non-affiliated takes**

9.74. Several submissions have been received regarding the inclusion of specific takes in the flow and allocation tables for the Opihi FMU.

9.75. In relation to Table 14(m), Anderson\textsuperscript{1335} and Hay\textsuperscript{1336} seek that the North Opuha AN allocation is not included in pro-rata allocations for the North Opuha River, as such takes are already restricted to the unmodified flow of the Opihi River. Table 14(u) sets out an environmental flow and allocation regime for AN permits in the Opihi FMU, with minimum flows linked to the unmodified flow at State Highway 1. Both submitters seek that including AN allocations in the pro-rata restrictions would result in practical difficulties through the separate minimum flow sites, as well as a doubling up on restrictions for other takes. While we agree with submitters that it is not constructive to have AN takes restricted via two flow regimes, given the confusion this would case, with Table 14(u) providing a more restrictive minimum flow regime, we also acknowledge a wider issue with the high allocation to AN permits and other fundamental errors in the tables of the notified version.

\begin{footnotesize}
\footnote{1330} PC7-381.99
\footnote{1331} PC7-166.20
\footnote{1332} Resource consent CRC150164
\footnote{1333} PC7-166.21, PC7-166.22
\footnote{1334} Resource consents CRC171315 and CRC192381
\footnote{1335} PC7-74.1
\footnote{1336} PC7-249.1
\end{footnotesize}
9.76. Several submitters including OWL and supporters seek that the Opihi River minimum flow and allocation regime in Table 14(u) includes all AA and AN permits, being surface water takes, and all high or direct stream depleting groundwater takes. In the same vein, several submitters including OWL and supporters seek that the Opihi River minimum flow and allocation regime in Table 14(y) includes all BA and BN permits, being surface water takes, and all high or direct stream depleting groundwater takes. Submitters are concerned that the current allocation limits do not include all of these existing takes, although none of the submitters have advised what the correct allocation limit could or should be.

9.77. We consider that there are some errors in the tables associated with the Opihi flow regimes that require fixing. This includes the high allocation for AN permits in Table 14(u), and lack of limits for other allocation blocks. We consider this high allocation would lead to a further degrading of waterbodies if it was taken up and therefore PC7 would be contrary to the NPSFM. On the other hand, we are also concerned not to unduly constrain the operation of the Opuha dam through setting of allocation blocks inconsistent with their shareholding.

9.78. Schedule 9 of the LWRP sets out how stream depleting takes are managed and accounted for. All takes with a moderate, high or direct hydraulic connection are to be partially or wholly counted towards the surface water allocation limit, while only high and direct takes are to be subject to minimum flow restrictions. The Resource Consents Inventory, which has been used to set the allocation limits in the Opihi FMU and Temuka FMU, was undertaken in accordance with Schedule 9 for stream depleting takes. Given the current allocation figures have been determined in accordance with Schedule 9 methodology, we consider the allocation figures are an accurate representation of the relevant AN and BN allocations, with compliance with the minimum flow regime determined on a case by case basis, using the Schedule 9 guidance.

9.79. Rathkeale Farming Partnership and P Brosnahan oppose the “150 day stream depletion methodology” set out in Schedule 9 and request that stream depletion is determined over a 30 day pumping rate as set out in the ORRP. Mr Brosnahan identified that he has a currently unrestricted groundwater consent that would likely be tied to a minimum flow on the Opihi Mainstem under the Schedule 9 methodology. Also related to stream depletion, R Lundie has submitted on the change in the calculation of stream depletion, through the transition from the ORRP to PC7 methodologies, and the effects it will have on his irrigation consent. Mr Lundie has identified that under PC7, his take will shift from being unrestricted groundwater, to stream depleting groundwater, requiring minimum flow restrictions. Mr Lundie currently holds a groundwater consent authorising a maximum rate of take of 15 L/s from three points approximately 1000 m from the Te Ana Wai River. Mr Lundie submits that being subject to BN minimum flows would result in near to no ability to abstract water, based on past use and flows.

9.80. Under the ORRP, the level of hydraulic connection of a groundwater take to surface water is calculated over a 30 day pumping period, while under PC7, using the existing Schedule 9 methodology, stream depletion is calculated over a 150 day pumping period. In his submission, Mr Lundie has calculated the following depletion rates for his consent:

---

1337 For example; TWUG (PC7-68.12), M Hawkins (PC7-97.6), T Henderson (PC7-115.10), Mackenzie College (PC7-487.10), Phillips Farming Ltd (PC7-364.22)
1338 For example; R O’Sullivan (PC7-439.8), Biggs Agriculture Ltd (PC7-221.5), Federated Farmers (PC7-430.282), OWL (PC7-381.109), Barwoods Ltd (PC7-298.18), Cascade Creek Ltd (PC7-294.14)
1339 PC7-181.2
1340 PC7-248.1
1341 PC7-82.1
1342 Resource consent CRC020220.2
• A 30 day depletion rate of 3.3 L/s (which is under the 5 L/s exemption threshold);
• A 150 day depletion rate of 8.1 L/s; and
• A maximum pump rate of 9.25 L/s to achieve a 150 day depletion rate of less than 5 L/s. Mr Lundie has provided past use data to show that his average rate of take in a season is less than 9.25 L/s.

9.81. For Mr Lundie, the change in calculation means at the current consented rate, his take will shift from having a low connection, to a moderate level of hydraulic connection to the Te Ana Wai River.

9.82. Under the permit definitions introduced in PC7, the now moderately connected take would be classified as a BN permit, meaning the take would be subject to Table 14(y) minimum flow restrictions on the Te Ana Wai River. Mr Lundie has used his past use records alongside the river flows at Cave for the corresponding period, and determined that he would only have been able to irrigate for 2.2 days per season under the proposed regime, as opposed to his range of 67 – 172 days in the last five seasons.

9.83. Mr Lundie seeks that for those groundwater takes affected by the change to stream depletion methodology, a new rule be introduced to PC7 that allows for the use of past use records in determining the actual average extraction rate over 150 days. The proffered rule would limit consents such that they can continue to take water in accordance with the ORRP 30 day calculation rate, but in future must ensure their annual average rate of take does not exceed the 150 rate at which they would be considered not hydraulically connected.

9.84. We acknowledge Mr Lundie’s submission, and appreciate that the change in calculation methodology will have some significant consequences for takes such as his.

9.85. The potentially stream depleting takes in the OTOP sub-region have been identified in the Resource Consent Inventory. All bores screened at a depth of less than 30 metres had their stream depletion potential assessed to identify how many consents might be affected by the change in methodology from the ORRP to Schedule 9. While the analysis is conservative, it lists 92 newly identified stream depleting groundwater consents in the Opihi catchment, and 47 in the Temuka catchment.

9.86. The identification of these new stream depleting takes has two implications:
• Changes to the allocation status of both ground and surface water allocation zones; and
• Changes in reliability of the identified consents.

9.87. As discussed earlier, the allocation limits in the Temuka and Opihi FMUs were determined in accordance with the Schedule 9 methodology, so should reflect the newly identified depleting takes.

9.88. In terms of how individual consent holders will be affected, little work has been done beyond identification, so the magnitude of the effect on reliability is currently unknown. In some cases, like that of Mr Lundie, takes that currently experience near 100% reliability are likely to be severely affected, particularly if they effectively become B permits in the Opihi FMU and do not hold an entitlement to water through OWL.

9.89. We consider the introduction of a bespoke rule as proposed by Mr Lundie is likely to be unworkable in a consenting context due to the likely variability in existing consents, particularly without further knowledge as to what extent the takes identified by Daniel Clark
will be affected. However, we acknowledge that there are some means available in the consenting space to offer solutions for affected consent holders, where the proposed minimum flows provide too low a reliability to sustain the take.

9.90. In all cases, site specific testing will be required to establish the effects, which may result in a lesser stream depletion effect than estimated by Daniel Clark.

9.91. For Mr Lundie specifically, the take could be limited through the introduction of a 150 day volume limit on his consent to ensure the average flow rate is at or under the 9.25 L/s calculated to ensure the depletion rate is under 5 L/s. With a depletion rate under 5 L/s, the take would be classified as having a low level of hydraulic connection, so would not be considered as a BN permit, and would not require minimum flow restrictions. The outcome of such a volume restriction may allow Mr Lundie a greater transition time. However, we acknowledge that this type of solution may be unworkable for consent holders with a greater rate of take, where the reduction in volume would be unsustainable.

9.92. Mackenzie DC is concerned that the location of minimum flow recorder sites for AA, BA, KIL, AN and BN permits are in different locations, which could influence the extent of water take reductions required by consent holders. Mackenzie DC seeks the location of recorder sites for the Mackenzie DC abstractions are located within the Mackenzie District. The submitter considers that this will provide a more accurate relationship between the location of the flow measurement and mechanism for the placement of restrictions in the Mackenzie District. Mackenzie DC has not proposed alternative locations for minimum flow recorder sites in their submission, rather it seeks, more generally, that it is located within the Mackenzie District. As no specific alternatives have been advanced, we are unsure of the implications of this change, and at this point in time, do not consider that a change to be within a specific territorial authority’s geographic area should have any implications for management.

---

1343 PC7-457.11
10. **Quantity – Pareora Specific Provisions**¹³⁴⁴

**Introduction and Provisions**

10.1. Proposed Plan Change 7 to the CLWRP proposes to divide the sub-region of OTOP into six FMUs for the purpose of managing water quality and quantity, one of which is the Pareora FMU. Part B of PC7 includes a range of provisions that will apply within the Pareora FMU. This includes a definition for the ‘Pareora Freshwater Management Unit’, Freshwater Outcomes, Limits and Targets applicable to water bodies within the Pareora FMU, an environmental flow and allocation regime for Pareora River (Table 14(za)) and some specific policies relating to cumulative effects of small takes (Policy 14.4.42), dams and damming (Policy 14.4.43) and augmentation of the South Branch of the Pareora River (Policy 14.4.44), as well as three proposed Rules - 14.5.33, 14.5.34 and 14.5.35. Where an activity is proposed within the Pareora FMU and is not a matter covered by the above policies and rules, the applicable sub-region wide provisions, or region-wide provisions will apply. This section of the Section 42A Report addresses the Pareora-specific policies and rules set out above, as well as the regime set out in Table 14(za).

10.2. With respect to the flow and allocation regime, the PCEFWARP is the operative regional plan that aims for the sustainable management of water in the Pareora River catchment. It was made operative in July 2012 and includes an environmental flow and allocation regime. It does not manage water quality. Water permits have been reviewed and brought into line with the PCEFWARP regime. As there have been no significant changes in values since the introduction of the PCEFWARP regime, the provisions in PC7 largely replicate the flow and allocation regime from the PCEFWARP¹³⁴⁵. As noted earlier, this general approach of ‘maintaining the status quo’ for this catchment raises questions about alignment with current understandings of Te Mana o te Wai. For the Hearing Panel’s information, if adjustments were to be considered, Memorandum 10 (Appendix 1 pages 98 – 102) in the Hayward 2019 report R19/80 presented a summary of ecologically based minimum flow recommendations for the Orari and Pareora rivers that was part of previous work for the LWRP or Pareora River flow plan..

10.3. Policy 14.4.42 reads:

*Assist with addressing over-allocation of the quantity of freshwater in the Pareora Freshwater Management Unit, by avoiding all further abstractions of surface water and groundwater, except as provided for by s14(3)(b) of the RMA.*

10.4. The Policy is implemented through Rule 14.5.33, which states that regional Rules 5.111 and 5.113 to 5.115 do not apply. Rules 5.111, 5.113 and 5.114 provide for small permitted takes, subject to various conditions. Rule 5.115 specifies that taking and using of water for a community water supply from groundwater or surface water is a restricted discretionary activity, where specified conditions are met. The effect of Rule 14.5.33 is that small surface water takes that would have been permitted under the region-wide rules will either require resource consent under the proposed sub-regional Rules 14.5.4 or 14.5.5, or will be prohibited under proposed Rule 14.5.6, if they exceed the relevant allocation limits. For small groundwater takes, the small takes that would have been permitted under the region-wide

---

¹³⁴⁴ The planning author of this section is Matthew McCallum-Clark, and the technical author is Daniel Clark.

¹³⁴⁵ Section 32 Evaluation Report for Plan Change 7 (Omnibus, Orari-Temuka-Opihi-Pareora and Waimakariri) to the Canterbury Land and Water Regional Plan and Plan Change 2 to the Waimakariri River Regional Plan, p. 153.
rules, would be subject to region-wide Rules 5.128 to 5.130. This again, would result in a prohibited activity status where the take would exceed the relevant allocation limits.

10.5. Policy 14.4.43 reads:

*Damming of surface water in the mainstem of any waterbody in the Pareora Freshwater Management Unit, is avoided, except where the damming was lawfully established prior to 21 July 2012, the water that is dammed is used for community supply, and the water permit is affected by the provisions of Sections 124 – 124C of the RMA.*

10.6. Rule 14.5.34 provides for the damming of water in the bed of the Pareora River for a community water supply scheme, and associated activities, as a restricted discretionary activity, where a number of conditions are met. Where the conditions are not met, the damming and associated activities are a non-complying activity under Rule 14.5.35.

10.7. Policy 14.4.44 reads:

*Enable the augmentation of the South Branch of the Pareora River by Timaru District Council at a rate of 70 L/s, during the months of October and November each year.*

10.8. The ‘enabling’ aspect of this policy provides direction for any the consenting of augmentation. In addition, the minimum flow requirements in Table 14(za) accommodate for the intention that this water is to be used for augmentation purposes, by increasing the minimum flow by 70 L/s in the South Branch of the Pareora River, during October and November. This avoids the potential for the augmentation water to be extracted.

10.9. As a limited number of submissions were received on the proposed Pareora FMU provisions, all submission points have been considered together in one section below, with the analysis following each change sought.

**Submissions and Analysis**

10.10. Fish & Game\(^{1346}\) supports and seeks retention of Policy 14.4.42, as it will help to address over-allocation to safeguard life-supporting capacity and ecosystem health and will give effect to the NPSFM, CRPS, and CLWRP. Timaru DC\(^{1347}\) is also supportive of the Policy as it considers that the exception given to community drinking water and stock water would help protect its interest in providing for community drinking water and community water supplies. It is not clear what exception Timaru DC is referring to as Section 14(3)(b) of the RMA provides for the take and use of water for an “individual’s reasonable domestic needs” or the “reasonable needs of a person’s animals for drinking water”. Our understanding is that this does not extend to community supplies.

10.11. Federated Farmers\(^{1348}\) seeks that Policy 14.4.42 is amended so that in addition to domestic and stock water takes provided for by Section 14(3)(b) of the RMA, the Policy also allows an exception for “relatively small quantities of water...for essential activities such as dairy shed wash-down, where there are product hygiene and animal welfare requirements”. In our view, the Policy is intended to address the existing over-allocation within the Pareora FMU by not providing for any further abstractions of water. However, some further takes are provided for under Section 14(3)(b) and cannot be overridden by the CLWRP, with the Policy effectively

\(^{1346}\) PC7-351.65

\(^{1347}\) PC7-292.87

\(^{1348}\) PC7-430.226
acknowledging those situations. In our view, it is not appropriate to extend the Policy to provide for further exemptions, the likes of which are not provided for under Section 14(3)(b), and the provision for which would be inconsistent with phasing out over-allocation.

10.12. Silver Fern Farms Ltd\textsuperscript{1349} seeks that Policy 14.4.42 is amended to make it clear that it only applies to ‘new’ takes. They state that nothing in the policy wording suggests that the direction is intended to exclude large and/or industrial water takes. While acknowledging that the Policy does use the word “further”, they consider it would be assisted by also referring to “new”, to avoid suggestion that “further” is being used in the context of ‘continuing’. We agree with the submitter that the intent of the Policy is to avoid ‘new’ allocations, rather than seeking to avoid ‘further’ abstractions in the sense of further meaning continuing abstractions of existing takes, including renewal of existing resource consents. This is reflected in the way these are distinguished through the rule framework, where takes that breach the relevant allocation limits are prohibited, but replacement consents for lawfully established takes affected by Section 124 of the RMA are provided for as a restricted discretionary activity (Rule 15.5.4). Regardless of this, we consider that it would be more appropriate to replace “further” with “new”, to ensure clarity in this Policy.

10.13. The only submission made on Rule 14.5.33, is from Timaru DC,\textsuperscript{1350} which conditionally supports Rule 14.5.33 and the note above it that states that the Rule prevails over the regional rules specified, subject to their requested amendments to Rule 14.5.34 being implemented. It is not clear what, if any, changes are sought to Rule 14.5.33 and the note, should the changes to Rule 14.5.34 not be accepted.

10.14. Fish & Game\textsuperscript{1351} supports and seeks retention of Policy 14.4.43 as it will help to support fish passage in the catchment and provide for ecosystem health. Fish & Game\textsuperscript{1352} similarly support Rule 14.5.34. Ngāi Tahu\textsuperscript{1353} also supports the Policy and Rule and seek their retention. A Midgley\textsuperscript{1354} also supports Rule 14.5.34, stating that it caps extraction at the current levels.

10.15. Timaru DC\textsuperscript{1355} seeks that Policy 14.4.43 is amended to refer to “community water supply”, rather than “community supply”, in order to protect their interest in providing for community water supplies. We note that within the CLWRP, “Community Water Supply” is a defined term, whereas “community supply”, as proposed in this Policy, is not. Rule 14.5.34, which provides a restricted discretionary status for damming in the bed of the Pareora River and related activities applies to a “lawfully established community water supply” scheme. It therefore seems likely that the Policy is intended to apply to “Community Water Supplies” and we agree with the addition sought by the submitter.

10.16. Forest & Bird\textsuperscript{1356} is concerned that Rule 14.5.34 does not include anything, in the matters of discretion, to avoid adverse effects on significant indigenous biodiversity or significant habitats of indigenous fauna and other matters of national importance and seek that it is amended to do so. We note that the region-wide rule for taking and using water for a community water supply (Rule 5.115) does not currently include a similar matter of discretion, but Part A of PC7 proposes to add an additional matter of discretion to this rule allowing

\begin{footnotes}
\item[1349] PC7-468.3
\item[1350] PC7-292.119, PC7-292.120
\item[1351] PC7-351.66
\item[1352] PC7-351.76
\item[1353] PC7-424.12, PC7-424.36
\item[1354] PC7-72.8
\item[1355] PC7-292.88
\item[1356] PC7-472.195
\end{footnotes}
consideration to be given to “the potential adverse effects on significant habitats of indigenous fauna and flora”. We note that while the rule that is specific to the Pareora FMU has a number of differences to the region-wide rule, there does not seem to be any reason why the effects on significant habitats of indigenous fauna and flora should not be considered in this particular FMU. We also consider that this matter of discretion would more closely align reconsenting of the damming of water with Te Mana o te Wai.

10.17. Timaru DC\textsuperscript{1357} conditionally supports the note above Rule 14.5.34, subject to the amendments sought to the rule itself. In relation to Rule 14.5.34, Timaru DC states that the dam at the source of the Timaru community water supply in the Pareora River currently has indigenous and a salmonid species that are predated by trout above the dam. Below the dam trout and salmon are present further downstream. The submitter considers that the Rule does not link to Policy 4.102 and that fish passage should be a matter for discretion, rather than a condition. It states that this would not help protect Timaru DC’s interest in that it could require fish passage above the dam for trout and salmon. The submitter is further concerned that it is unclear what Ngāi Tahu values or sites of significance to Ngāi Tahu apply for this Rule. It also notes that the existing consent to dam, take and use water from the Pareora River includes a condition to maintain a residual flow beneath the dam, and as it considers this to be beneficial for the River, it thinks it should be maintained going forward.

10.18. As a consequence of the above, the submitter seeks that the rule is amended to:

- Clarify the listed and/or mapped Ngāi Tahu values or sites of significance to Ngāi Tahu that apply for this rule for consideration on how it affects Timaru DC interests
- Delete condition (4), which requires that fish passage is not impeded\textsuperscript{1358}
- Include a new condition requiring that a residual flow of at least 30 litres per second is maintained below the dam\textsuperscript{1359}
- Amend the matter of discretion (8) to refer to “listed and/or mapped” Ngāi Tahu values\textsuperscript{1360}
- Include a new matter of discretion allowing consideration of “the effects of the structure on any indigenous fish above and below the dam”\textsuperscript{1361}.

10.19. Policy 4.102 is part of the broader package of provisions proposed as part of PC7 and directs that structures enable the safe passage of indigenous fish, while avoiding, as far as practicable, the passage of any invasive, pest or nuisance fish species. Condition (4) of proposed Rule 14.5.34 requires that any passage of fish is not impeded. We agree with Timaru DC that there is tension between condition (4) of Rule 14.5.34 and Policy 4.102. As discussed in Part 3, Section 5 of this report, Policy 4.102 is recommended to be deleted. Therefore, the conflict between Rule 14.5.34 and Policy 4.102 will be resolved should the Hearing Panel choose to adopt this recommendation. However, if Policy 4.102 is retained, we consider that amendments are required to the Policy and/or Rule 14.5.34 to ensure greater alignment between the provisions.

10.20. We note that Policy 14.4.43 provides for the damming of surface water in the Pareora River where the damming was lawfully established prior to 21 July 2012, the water that is dammed is used for community supply, and the water permit is affected by the provisions of Sections 124-124C of the RMA. Therefore, despite the non-complying activity status that results from

\textsuperscript{1357}PC7-292.121
\textsuperscript{1358}PC7-292.117
\textsuperscript{1359}PC7-292.116
\textsuperscript{1360}PC7-292.118
\textsuperscript{1361}PC7-292.136
not complying with condition (4) of Rule 14.5.34, Policy 14.4.43 provides for such an activity to occur. Given the above, we recommend that the request from Timaru DC to delete condition (4) of Rule 14.5.34 be rejected. In terms of Timaru DC’s requested additional matter of discretion, we note that this will be provided for within the matter of discretion recommended in response to Forest & Bird’s submission on Rule 14.5.34. As such, we recommend that this relief is accepted in part.

10.21. In relation to Ngāi Tahu values or sites of significance to Ngāi Tahu, we note that this is a matter for discretion. In our view this appropriately allows for discussion with the relevant rūnanga at the time an application is proposed, in order to identify what values or sites may be affected, and how such effects can be appropriately managed. We do not consider further clarification or mapping is required or appropriate in relation to this Rule.

10.22. In relation to the requirement to maintain a residual flow, we note that this is typically currently a condition of consent, and can be included on any replacement consent going forwards, without needing to be stipulated as a pre-requisite condition. In our view this is appropriate as it allows for flexibility as to what residual flow or other conditions may be appropriate.

10.23. Only one submission was received on Rule 14.5.35, from Timaru DC, which is neutral on the rule, seeking only that it is not amended to be any more restrictive than currently proposed.

10.24. Five submitters support Policy 14.4.44, with reasons including that allowing for augmentation will help meet minimum flows and recognises the need for adequate flows for ecosystem health, it provides a means of improving surface and groundwater quality, and will help to provide for community drinking-water and community water supplies. Forest & Bird opposes the Policy on the basis that they do not generally support augmentation as they consider there is too much uncertainty. We note that the Policy essentially provides direction that would be considered through any resource consent application for augmentation undertaken by Timaru DC. Through the resource consent process, the specific details regarding the proposed augmentation can be considered, at which time, there would be greater certainty regarding the effects of augmentation. The purpose of the Policy is to more broadly provide support for the augmentation.

10.25. In relation to the flow and allocation regime contained in Table 14(za), no specific submissions were made on the proposed regime. However, Federated Farmers comments more broadly on Tables 14(h) – 14(za) seeking deletion of amendment to any aspects within these tables which are inconsistent with the recommendations of the Flow and Allocation Committee of the OTOP ZC, the submissions of OWL, or the submissions of the TCWP. The latter two parties did not submit on the regime proposed in Table 14(za) and the OTOP ZC did

---

1362 PC7-292.122
1363 Timaru DC (PC7-292.89), Fish & Game (PC7-351.67), Moffitt Dairy (PC7-435.59), Darby Farm Partnership (PC7-464.3), Orton Down Farm Partnership (PC7-469.59)
1364 Fish & Game (PC7-351.67)
1365 Moffitt Dairy (PC7-435.59), Orton Down Farm Partnership (PC7-469.59)
1366 Timaru DC (PC7-292.89)
1367 PC7-472.184
1368 PC7-430.284
1369 While some submissions refer to the “flow and allocation working party” being a “sub-committee of the zone committee”, it does not appear that the working party, being an irrigator interest group led by OWL that provided feedback to the ZC, had any formal status or shared membership with the ZC.
not recommend changes to the existing flow regime, which is reflected in Table 14(za). It is therefore assumed that no changes are sought by Federated Farmers.

10.26. While no submissions specific to the Pareora FMU raise the issue, we note that the flow regime, largely unadjusted from the Pareora Plan, is unlikely to be viewed as upholding Te Mana o te Wai. For example, summertime minimum flows of 660 L/s were recommended to provide for ecological values, compared to the minimum flow of 400 L/s in the Pareora Plan, which was carried over to PC71370.

1370 See Memorandum 10 (Appendix 1 pages 98 – 102) in the Hayward 2019 report R19/80

Introduction and Provisions

11.1. This section of the report discusses the provisions in Part B of PC7 that propose a new framework for the management of groundwater quantity within the OTOP sub-region.

11.2. Policy 14.4.7 directs that groundwater in the OTOP sub-region is managed through establishing A and T allocation limits, with the former providing for existing lawfully established groundwater abstractions and the latter providing for abstraction of groundwater in circumstances where an existing lawfully established surface water permit or stream-depleting groundwater permit with a direct, high or moderate stream depletion effect will be surrendered.

11.3. In accordance with Schedule 9 of the CLWRP, groundwater abstractions with a direct, high or moderate stream depletion effect are included in the relevant surface water allocation limit. The amount of water included as surface water allocation is dependent on the degree of stream depletion effect attributed to the take, as set out within Table S9.1 of Schedule 9. Groundwater abstractions with a direct or high (if above the stream depletion cut-off) stream depletion effect are also subject to minimum flow restrictions.

11.4. Policy 14.4.8 directs that granting applications from within the T Allocation Block is only considered in the circumstances specified. Policy 14.4.9 adds two further criteria to the grant of consent, where applications will affect the reliability of supply of any existing lawfully established groundwater abstraction.

11.5. The above policies are implemented by Rules 14.5.7 to 14.5.11. Rules 14.5.7 and 14.5.8 apply to the taking and use of groundwater that will replace an existing surface water or stream depleting groundwater permit. Rules 14.5.9 to 14.5.11 apply to groundwater abstractions that are not captured under the above provisions.

11.6. Table 14(ze) sets out groundwater allocation limits for the seven GAZs in the OTOP sub-region. The proposed table includes an allocation limit from the T Allocation Block for the Orari-Opihi GAZ.

11.7. Part B of PC7 also proposes to extend the boundaries of the existing GAZs so the whole OTOP sub-region is included in one of the seven GAZs. No submissions were received on the revised extent of the GAZ boundaries within the CLWRP Planning Maps.

Summary of recommendations on the swap provisions

11.8. This section discusses the background to the “swap” provisions for the OTOP sub-region introduced within Part B of PC7, and includes a summary of our overall recommendations for these provisions.

11.9. Part B of PC7 introduces several methods to reduce over-allocation within the OTOP sub-region. For replacement water permits, PC7 proposes, in some areas, a new framework to

---

1371 The planning authors for this section are Tim Stoddart and Matthew McCallum-Clark and the technical author is Daniel Clark.
provide the ability for consent holders to substitute an existing surface water or stream depleting groundwater for a non-stream depleting take.

11.10. Provisions which enable the substitution of existing surface water or stream depleting groundwater takes for non-stream depleting sources exist under the operative CLWRP within parts of other sub-regions in Canterbury including Selwyn-Te Waihora, Ashburton\textsuperscript{1372} and South-Coastal Canterbury. Part C of PC7 also proposes to introduce a similar framework within the Waimakariri sub-region.

11.11. Part B of PC7 proposes to enable this framework through the introduction of three new policies\textsuperscript{1373}, two new rules\textsuperscript{1374} and amendments to Table 14(zb) to include a new allocation limit for the activity (the T Allocation Block). The T Allocation Block is only available in circumstances where the relevant SWAZ is over-allocated, and a proposed A Allocation limit for the GAZ is below the current operative plan limit. Within the OTOP sub-region, these factors only exist within the Orari-Opihi GAZ. As such, only one T Allocation block is provided for in this zone within Table 14(zb).

11.12. In Table 16 of the operative CLWRP, the existing A Allocation limit for the Orari-Opihi GAZ is 71.1 million m\(^3\)/yr. However, this GAZ is presently over-allocated with approximately 85.2 million m\(^3\)/yr consented to be abstracted. From the Resource Consent Inventory\textsuperscript{1375}, it is estimated that 41.4 million m\(^3\)/yr of this current allocation can be attributed to takes that are stream depleting. The remaining volume of 43.8 million m\(^3\)/yr is attributed to takes that are solely from groundwater (i.e. categorised as having a low stream depletion effect in Schedule 9 of the CLWRP).

11.13. Under PC7, the A Allocation limit for the Orari-Opihi GAZ is proposed to be reduced to 43.8 million m\(^3\)/yr. The proposed T Allocation block of 27.3 million m\(^3\)/yr was calculated as the difference between the current plan limit for the Orari-Opihi GAZ of 71.1 million m\(^3\)/yr, and 43.8 million m\(^3\)/yr. Therefore, the technical reports\textsuperscript{1376} supporting PC7 acknowledge that the proposed combined A and T Allocation block limits will not exceed the existing CLWRP limit for the Orari-Opihi GAZ, and in theory, will not allow any further groundwater allocation.

11.14. While this may appear to be the case in terms of “paper allocation”, we note that in reality the provisions will result in the A Allocation block becoming significantly over-allocated (if the revised limit of 43.8 million m\(^3\)/yr is compared to the actual consented abstraction from this block). Additionally, the provision of a new T allocation block will allow further abstraction beyond the current allocation within the Orari-Opihi GAZ by providing a consenting pathway for other permit holders within this zone (such as those with direct surface water takes) to abstract groundwater from the T Allocation Block. Therefore, in the short to medium term, there is potential for an additional 27.3 million m\(^3\)/yr to be abstracted in addition to the existing 85.2 million m\(^3\)/yr from the Orari-Opihi GAZ. The actual situation will likely be less significant than this, as some is already ‘counted’ in stream depleting groundwater takes, but there is no certainty that a large part of the new T block will not be taken up by existing surface water abstractors.

\textsuperscript{1372} Within the Lower Hinds/Hekeao Plains Area.
\textsuperscript{1373} Proposed policies 14.4.7 to 14.4.9
\textsuperscript{1374} Proposed rules 14.5.7 and 14.5.8
\textsuperscript{1376} Rosado, C. (2019). Groundwater technical report to support the Orari-Temuka-Opihi-Pareora limit-setting process.
11.15. Other Plan mechanisms seek to “claw back” existing over-allocation within the Orari-Opihi GAZ, including the surrender of volume through the expiry or transfer of water permits, records of past water use for renewals, and consent reviews. However, we note that this existing over-allocation will not be immediately recovered, and will likely be addressed over the duration of the Plan as current consents expire or stream depleting groundwater consents are reviewed.

11.16. Therefore, we consider that the provision of a T Allocation block that will lead to further overallocation is inconsistent with the direction of the NPSFM, CRPS and CLWRP. The relevant objectives and policies within these planning instruments are discussed below.

11.17. Objective B2 of the NPSFM provides direction to avoid any further over-allocation of fresh water and phase out existing over-allocation. Policy B5 of the NPSFM directs regional councils to ensure that no decision will likely result in future over-allocation, including managing fresh water so that the aggregate of all amounts of fresh water in a freshwater management unit that are authorised to be taken, used, dammed or diverted does not over-allocate the water in the FMU.

11.18. The CRPS also includes direction to address over-allocation of water. Policy 7.3.4(2) of the CRPS states that where the quantum of water allocated for abstraction from a water body is at or exceeds the maximum amount provided for in an environmental flow and water allocation regime, any additional allocation of water for abstraction is avoided, as well as any other action which would result in further over-allocation. In addition to setting a timeframe for identifying and undertaking actions to phase-out over-allocation, Policy 7.4.3(2) also states that any adverse effects of over-allocation must be effectively addressed in the interim.

11.19. The CLWRP sets out clear direction for the sustainable management of water quantity. This is evident through Objective 3.8 which states that the quality and quantity of water in fresh waterbodies and their catchments is managed to safeguard and support a number of ecosystems. Strategic Policy 4.5 of the CLWRP directs that water is managed through the setting of limits to safeguard the life-supporting capacity of ecosystems, and support and provide for several uses.

11.20. It is our view that while the provision of a T Allocation block in the form proposed in PC7 may assist with the recovery of some surface water flows, it will result in further over-allocation of groundwater within the Orari-Opihi GAZ, which is inconsistent with the objectives and policies of the documents discussed above. We also note that the T block is not large enough for all existing stream depleting groundwater takes (estimated above at 41.1 million m$^3$) or surface water takes subject to reduced reliability, so only some consent holders would benefit.

11.21. Therefore, at this point, we recommend that the T Allocation block for the Orari-Opihi GAZ is deleted to prevent any further over-allocation within the OTOP sub-region. However, there may also be benefit in a more nuanced set of provisions that set the A block at 43.8 million m$^3$, and provides a smaller T block, to ensure overallocation does not increase. To provide for this deletion, at this time we recommend the following amendments in relation to the groundwater “swap” provisions in Section 14:

- That policies 14.4.7, 14.4.8 and 14.4.9 are deleted.
- That rules 14.5.7 and 14.5.8 are deleted.

\footnote{We would welcome input from submitters, but estimate that the existing T block would need to be around half the size.}
• That Table 14(zb) is amended to:
  o delete the T Allocation limit from the Orari-Opihi GAZ; and
  o amend the A Allocation limit for Orari-Opihi GAZ to 71.1 million m³/yr (being
    the existing CLWRP block size).

11.22. However, should the Hearings Panel choose to retain a framework for swaps within the OTOP
sub-region, the submissions on the relevant groundwater provisions have been assessed
below for completeness. An assessment of the provisions which are not related to the “swap”
of groundwater to surface water1378 is also provided within the following section.

Submissions

11.23. The submissions on the groundwater abstraction provisions have been grouped into and
considered according to the following topics:
• General submissions on multiple provisions
• Submissions on Policy 14.4.7
• Submissions on Policy 14.4.8
• Submissions on Policy 14.4.9
• Submissions on Rules 14.5.7 to 14.5.11
• Submissions on Table 14(zb)

11.24. One submission point from Waimate DC1379 was allocated to Table 14(zb) within the SoDR.
However, the matters raised within the submission appear to be more relevant to Policy
14.4.8. For this reason, this submission point is addressed in conjunction with other
submissions on Policy 14.4.8.

11.25. Seaforth Farm Ltd requests that Levels Valley and the Washdyke industrial zone are included
in the Levels Plain area, noting that they have a “huge impact” on this area. We consider this
relief relates to the proposed water quality provisions in Section 14 (i.e. the spatial extent of
the HNCA). As such, this submission point is not discussed further and is addressed in the
HNCA section of this report.

General submissions on multiple provisions

11.26. A number of submission points received are applicable to several provisions within the wider
package of groundwater quantity provisions. These submission points are either repeated
against multiple provisions within this section, or they address the groundwater quantity
regime in its entirety.

11.27. Timaru DC1380 considers that Policies 14.4.7 to 14.4.9 would help protect their interest in
providing for community water supplies and seek that they are retained as notified, provided
that Policy 14.4.10 (which enables the taking of water for community water supply) is
retained.

11.28. Forest & Bird1381 opposes Policies 14.4.7 to 14.4.9 and seeks their deletion. It considers the
provisions are uncertain and will not provide for ecosystem health as required for Te Mana o

---

1378 Proposed Rules 14.5.9 to 14.5.11 and the A Allocation limits within Table 14(zb).
1379 PC7-279.5
1380 PC7-292.57, PC7-292.58, PC7-292.59
1381 PC7-472.153, PC7-472.154, PC7-472.155
te Wai. The submitter does not include any particular reasoning to support this requested relief within its submission.

11.29. With limited reasoning provided by the submitter as to why it considers the policies do not provide for ecosystem health or Te Mana o te Wai, it is difficult to understand what specific relief would appropriately address the concerns raised in the submission. However, as discussed above, we do acknowledge concerns in relation to the ability of the proposed T Allocation block, and associated provisions, to provide for Te Mana o te Wai.

11.30. Synlait\textsuperscript{1382} agrees that provisions are required to phase out over-allocation within the OTOP sub-region. However, the submitter requests that Policies 14.4.7 to 14.4.9 are amended to allow for, and encourage, the transfer of water permits to industrial use in situations where the new take and use will result in a neutral or positive water balance. This matter has been discussed more broadly in relation to water takes as a whole.

11.31. VIBERi New Zealand Ltd\textsuperscript{1383} states that under the direction of the proposed policies, new groundwater takes will only be considered in the OTOP sub-region if existing surface water takes are substituted. The submitter is concerned that this approach to cap all future groundwater consent applications would impact sustainable horticultural systems, which rely heavily on irrigation for their operation. The submitter requests that all new “bore applications” be considered, provided they are assessed against strict criteria. Although the submitter has referred to bore applications, we consider that it can be reasonably inferred from the submission that the requested relief relates to new water takes.

11.32. We note that PC7 does provide a consenting pathway for granting new and replacement groundwater takes within the OTOP sub-region, without substituting existing surface water takes or stream depleting groundwater takes, through Rules 14.5.9 and 14.5.10. Therefore, the submitter will have the ability to apply for a replacement or new groundwater take, provided it can comply with all of the relevant conditions of the rules.

11.33. To allow further new groundwater abstractions beyond the allocation limits would be inconsistent with the direction provided under the NPSFM to avoid any further over-allocation of fresh water and phase out existing over-allocation (particularly Objective B2 and Policy B5), and would undermine the objectives of the CLWRP. Therefore, we recommend rejecting the submission.

11.34. Silver Fern Farms Ltd\textsuperscript{1384} submits on all of the proposed groundwater policies and rules in Section 14, seeking clarification as to how they are intended to work together, particularly in relation to stream depleting takes. The submitter also notes that they support the provision made in the rule framework for the renewal of existing consents affected by sections 124 to 124C of the RMA.

Submissions on Policy 14.4.7

11.35. Sixteen submission points were received on Policy 14.4.7. One supports\textsuperscript{1385} the Policy, and four seek its deletion.

\textsuperscript{1382} PC7-188.10, PC7-188.11, PC7-188.12
\textsuperscript{1383} PC7-418.6, PC7-418.7, PC7-418.8
\textsuperscript{1384} PC7-468.31, PC7-468.32, PC7-468.34, PC7-468.35, PC7-468.36, PC7-468.37, PC7-468.38
\textsuperscript{1385} Rangitata Dairies (PC7-316.1)
11.36. Aotearoa Water Action\(^\text{1386}\) oppose allowing abstractors to surrender stream-depleting groundwater and surface water takes in exchange for the right to abstract from deeper groundwater sources. The submitter considers this approach is contrary to responsible guardianship of resources and can result in environmental damage. No specific rules are referenced within the submission, rather the submitter refers to abstractions from deep groundwater generally throughout PC7.

11.37. As discussed elsewhere in this report, in the absence of any specific evidence of the adverse effects caused by abstractions of deeper groundwater, it is difficult for us to appropriately address the concerns raised in the submission. Therefore, we recommend rejecting this submission based on limited context and supporting information. However, as discussed above, we do hold concerns with the potential adverse effects on the environment from allowing these swaps to occur as currently notified within the OTOP sub-region specifically.

11.38. OWL\(^\text{1387}\), TCWP\(^\text{1388}\), and TCG\(^\text{1389}\) are “fundamentally opposed” to the approach taken in PC7 to setting groundwater allocation limits in the OTOP sub-region. They consider that Policy 14.4.7 is “superfluous” and seek that it is deleted and replaced with the following policy:

\textit{To assist with phasing out over-allocation of surface water in the Temuka FMU enable taking of low stream depleting or direct groundwater provided the applicant holds a lawfully established surface water take or direct, high or moderate stream depleting groundwater take for an equal or greater rate and volume than is sought from the low stream depleting or direct groundwater, and the surface water take or direct, high or medium stream depleting groundwater take is surrendered.}

11.39. Three submitters\(^\text{1390}\) support the setting of groundwater allocation limits which provide for all existing established groundwater abstractions within Policy 14.4.7 but request further amendments to the Policy.

11.40. Federated Farmers\(^\text{1391}\) seeks further clarification of the intent of clause (b) of Policy 14.4.7 which it considers is to address over-allocation of surface water. The submitter requests the following amendments to clause (b) of Policy 14.4.7:

\textit{To address the over-allocation of surface water, provide for the abstraction of deep groundwater in circumstances where...}

11.41. In response to the submissions from OWL, TCWP, TCG and Federated Farmers, we agree that there should more certainty in terms of the outcomes Policy 14.4.7 is trying to achieve. Therefore, should the Hearings Panel choose to retain the “swap” provisions, we recommend that Policy 14.4.17 be amended to ensure that these higher level statements are explicit, and to provide more consistency with other sub-regional sections of the CLWRP.

11.42. In terms of Federated Farmers request to specify the abstraction of “deep” groundwater, Part B of PC7 does not require groundwater abstractions from the proposed T Allocation block to be from “deep groundwater”, and there is no definition for this term within Section 14. Rather, clause (c) of Policy 14.4.8 requires an assessment be provided as part of an application for resource consent to abstract groundwater from the T Allocation block which demonstrates

\(^{1386}\) PC7-209.6
\(^{1387}\) PC7-381.32
\(^{1388}\) PC7-318.32
\(^{1389}\) PC7-319.22
\(^{1390}\) Fonterra (PC7-416.1), Federated Farmers (PC7-430.186), Silver Fern Farms Ltd (PC7-468.1)
\(^{1391}\) PC7-430.186
that the abstraction has a low stream depletion effect. As such, we recommend that this specific relief is rejected as it does not assist the implementation of the rules. However, we note the difference between these provisions and those in Part C (Waimakariri) of PC7, where locality-specific modelling was undertaken.

11.43. Silver Fern Farms Ltd\textsuperscript{1392} requests greater certainty with regard to its future ability to access groundwater from the Pareora GAZ to ensure that its water takes for industrial purposes are protected and enabled. The submitter requests amendments to the wider policy and rule framework to reflect clause (a) of Policy 14.4.7 (i.e. provide for existing lawfully established groundwater abstractions within the A Allocation limit), and to specify how the revised A Allocation limits are proposed to be achieved over time in over-allocated catchments. We note that the Pareora GAZ is significantly overallocated\textsuperscript{1393} and is subject to region-wide policies and rules for the replacement of existing water takes. This would typically include a reduction in the volume of replacement consents to reduce overallocation. We do not consider it appropriate to depart from this region-wide framework, unless some other mechanism to reduce overallocation is advanced.

11.44. Fonterra considers that it is unclear how the proposed A Allocation limit for the Orari-Opihi GAZ provides for “all existing authorised groundwater abstractions” as stated within Policy 14.4.7. The submitter notes that the Orari-Opihi GAZ is 119% allocated, yet the A Allocation limit is reducing from 71.1 to 43.8 million m\textsuperscript{3}/yr (while providing 27.3 million m\textsuperscript{3}/yr for T allocation). Therefore, the submitter considers that the existing level of allocation within the Orari-Opihi GAZ is not provided for under PC7, and queries whether all existing lawfully established groundwater takes will have access to A and T allocation. Fonterra requests that Policy 14.4.7 is amended to more accurately reflect Table 14(zb) and/or vice versa. Additionally, the submitter seeks that if there is shortfall in allocation then clause (b) of Policy 14.4.7 (or Section 14 more generally) should be amended to provide greater clarity on how allocation might reduce over time.\textsuperscript{1394}

11.45. We acknowledge the concerns raised by Silver Fern Farms Ltd and Fonterra, and consider that clause (a) of Policy 14.4.7 is not necessarily reflected in the associated rule framework, particularly for over-allocated catchments such as the Pareora GAZ. Should the Hearings Panel choose to retain the “swap” provisions, we recommend amendments to the wider policy framework to ensure that they accurately reflect the outcomes Part B of PC7 is trying to achieve.

11.46. M A Orchards et al\textsuperscript{1395} are concerned that new groundwater takes from the Levels Plain GAZ will be prohibited under the new framework. The submitters consider that this approach fails to take into account that allocation was still available for this GAZ under the operative CLWRP. They consider that further sustainable groundwater abstraction is still possible from the Levels Plain GAZ. The submitter requests the following amendments to clause (a) of Policy 14.4.7:

provide for all existing lawfully established groundwater abstractions, and for the Levels Plain GAZ, abstraction of groundwater within sustainable limits (the A allocation limit);

\textsuperscript{1392} PC7-468.1
\textsuperscript{1393} 21.6 million m\textsuperscript{3} allocated, and an A allocation limit of 7.19 million m\textsuperscript{3}
\textsuperscript{1394} PC7-416.1, PC7-416.18
\textsuperscript{1395} PC7-488.1
11.47. According to resource consent data held by Environment Canterbury, the Levels Plain GAZ is currently 153% allocated\textsuperscript{1396}. Therefore, further sustainable groundwater abstraction would not be possible from this zone given it is 53% over-allocated. On this basis, we recommend that the submission is rejected.

**Submissions on Policy 14.4.8**

11.48. Twenty-five submissions from eleven submitters were received on Policy 14.4.8. One supports\textsuperscript{1397} the Policy conditionally, and four oppose the Policy.

11.49. In relation to clause (c) of Policy 14.4.8, several submitters oppose the requirement to consider records of past use for the surrendered permit when calculating a proposed volume for the replacement groundwater permit from the T Allocation block.

11.50. OWL\textsuperscript{1398}, TCWP\textsuperscript{1399}, and TCG\textsuperscript{1400} consider that clause (c) of Policy 14.4.8 unnecessarily limits the volume authorised by any new permit granted from the T Allocation block, and request that any proposed volumes are calculated with the use of Schedule 10 of the CLWRP. The submitters note that the use of Schedule 10 would reflect the approach taken for other operative ‘swap’ provisions in the CLWRP (such as Rule 13.5.30 for the Lower Hinds/Hekeao Plains catchment). The submitters also note that the use of Schedule 10 is referenced in matter of discretion (2) of associated Rule 14.5.7.

11.51. Federated Farmers\textsuperscript{1401} also considers that the use of Schedule 10 should be provided for in clause (c) of Policy 14.4.8, alongside reasonable use records for the surrendered permit. The submitter states that the current wording is too narrow and does not take several other factors into account such as annual climatic variations and seasonal distribution of rainfall. The submitter has included the proposed amendments to the clause within its submission.

11.52. Waimate DC\textsuperscript{1402} considers historic surface water allocations were only fully utilised during one-in-ten year droughts, and capping deep groundwater takes to average surface water usage will remove the essential “fall-back position” in times of severe drought. It considers that that in order for swaps to deep groundwater to be effective and practical, there should be a “quid pro quo exchange”. The submitter also seeks an appropriate lead-in time for adaption and change to the provisions, and suggests time frames should be re-negotiated with key stakeholders. A Midgley\textsuperscript{1403} requests amendments to Policy 14.4.8 to ensure that past use is defined and considers that it should include at least the last 12 years of past water use.

11.53. We note that these matters have largely been addressed in previous sections of this report and consider that restricting renewals to past use is an effective and efficient method to reduce over-allocation in the sub-region, primarily through the removal of “paper allocations”. In any event, it should be noted that clause (c) of Policy 14.4.8 does not restrict the determination of seasonal irrigation demand to the use of only one method (i.e. records of past use). Rather, this clause requires records of past water use to be considered when...


\textsuperscript{1397} Fonterra (PC7-416.2)

\textsuperscript{1398} PC7-381.40

\textsuperscript{1399} PC7-319.26

\textsuperscript{1400} PC7-318.79

\textsuperscript{1401} PC7-430.187

\textsuperscript{1402} PC7-279.5

\textsuperscript{1403} PC7-72.1, 72.2
determining an appropriate demand for a replacement water permit regardless of which method is adopted within Schedule 10. The rule framework also reflects this approach (i.e. matter of discretion (2) of Rule 14.5.7).

11.54. Therefore, we recommend rejecting these submissions on the grounds that the requests are already provided for within the proposed framework.

11.55. OWL\textsuperscript{1404}, TCWP\textsuperscript{1405}, and TCG\textsuperscript{1406} also note that clause (d) of Policy 14.4.8 requires applicants to demonstrate that the proposed take has a low stream depletion effect. They consider that this would consequently preclude the allocation of groundwater from the T Allocation block where a proposed take had no stream depletion effect. As such, the submitters request that clause (d) is amended to clarify that a resource consent should demonstrate that the proposed take has a low or no stream depletion effect.

11.56. In response to the relief sought above, we wish to clarify that Schedule 9 of the CLWRP does not include a stream depletion category titled ‘no stream depletion effect’. The lowest extent of stream depletion provided by Schedule 9 is ‘low stream depletion effect’. This is where no allocation is apportioned from groundwater allocation to surface water. We agree that it was not the intent of this clause to preclude takes with low stream depletion effects. Therefore, should the Hearings Panel choose to preclude the “swap” provisions, we recommend adopting the relief sought.

11.57. Overall, with reference to the Common Issues section of this report, we note that Policy 14.4.8 essentially sets the same criteria as relevant Rule 14.5.7. We consider that this adds very limited value, nor provide guidance to decision-makers with respect to resource consents sought under this rule. Policy 14.4.8 directs that granting applications from within the T Allocation Block is only considered in the circumstances specified. However, in this case, these circumstances are conditions of Rule 14.5.7, that if not complied with, would result in the activity being prohibited. As such, the policy would not provide any additional direction to a decision maker as an application that does not comply with this criterion would not be accepted for processing by Environment Canterbury.

11.58. Based on the above, and if the Hearings Panel choose to retain the “swap” provisions within Section 14, we recommend the deletion of Policy 14.4.8 and the inclusion of a revised policy, which sets out a higher level statement of what the policy is trying to achieve, and ensures greater consistency with similar sub-regional provisions within other sections of the CLWRP.

**Submissions on Policy 14.4.9**

11.59. Eleven submissions from ten submitters were received on Policy 14.4.9.

11.60. Several submitters support Policy 14.4.9 and seek that it is retained as notified\textsuperscript{1407}. Federated Farmers notes that its support is conditional provided every effort is made to protect the reliability of water supply to existing users.\textsuperscript{1408}

\textsuperscript{1404} PC7-381.41
\textsuperscript{1405} PC7-319.27
\textsuperscript{1406} PC7-318.80
\textsuperscript{1407} Fonterra (PC7-416.4), OWL (PC7-381.31), TCWP (PC7-318.31), TCG (PC7-319.21)
\textsuperscript{1408} PC7-430.188
11.61. We note that condition (4) of proposed Rule 14.5.7 requires applicants to demonstrate that any bore interference effects are acceptable in accordance with Schedule 12 of the CLWRP. If this condition is unable to be met, then the activity is prohibited under Rule 14.5.8. If the intent of Policy 14.4.9 is to provide additional direction for decision makers where a groundwater take has bore interference effects that are determined to be unacceptable in accordance with Schedule 12, which we believe is the case, then this policy is ineffective as it essentially seeks to provide direction for a prohibited activity.

11.62. On this basis, should the Hearings Panel choose to retain the “swap” provisions, we recommend that, in line with other recommendations on PC7, that the policy be retained, and failure to meet condition (4) of Rule 14.5.7 be made a non-complying activity, rather than a prohibited activity. That will at least allow for assessment and the obtaining of written approvals from affected persons.

Submissions on Rules 14.5.7 to 14.5.11

11.63. The submissions on Rules 14.5.7 to 14.5.11 have been grouped into and considered according to the following topics:

- General submissions on the rules
- Submissions on Rules 14.5.7 and 14.5.8 (the “swap” rules)
- Submissions on Rules 14.5.9 to 14.5.11

General submissions on the rules

11.64. A number of submitters address the groundwater take and use rules in their entirety and/or request similar relief for more than one of the rules within this section. These submission points are discussed below.

11.65. A Midgley\textsuperscript{1409} supports Rules 14.5.7 and 14.5.9, with no specific decision requested. The submitter does not provide any reasoning for the support.

11.66. Arowhenua and Te Rūnanga\textsuperscript{1410} supports further consideration of Ngāi Tahu values within the groundwater take and use rules. However, the submitter seeks the inclusion of new matters of discretion for the consideration of adverse effects on tuhituhi neherā (rock art) and Mātaitai Reserves for several rules. We note that the submitter also requests this relief for multiple provisions introduced within Part B of PC7. These submission points are addressed in Part 4 Section 4 of this report.

11.67. Conversely, Federated Farmers\textsuperscript{1411} requests the deletion of the matters of discretion within Rules 14.5.7 and 14.5.9 which relate to the consideration of adverse effects on Ngāi Tahu values. The submitter has not referred specifically to Rule 14.5.9, although the original submission references the deletion of this requirement “throughout the plan”. These submission points have also been addressed in Section 4 above and Part 3 (Omnibus) Section 4 of this report. Based on the conclusions reached in that section, we recommend rejecting these submission points.

\textsuperscript{1409}PC7-72.6, PC7-72.7
\textsuperscript{1410}PC7-424.19, PC7-424.20, PC7-424.96
\textsuperscript{1411}PC7-430.23
11.68. Beef + Lamb\textsuperscript{1412} and Te Moana Dairy\textsuperscript{1413} state that PC7 permits farming activities with up to 50 ha of irrigation under proposed Rule 14.5.17, provided all other conditions of this rule are met, including the preparation and implementation of a Management Plan (instead of a Farm Environment Plan). The submitter considers that the exclusion of Management Plans from matters of discretion (7) and (12) of Rules 14.5.7 and 14.5.9 respectively would effectively require permitted farming land use activities to produce an FEP in order to renew their existing water permits once they expire. The submitters state that this would “significantly disadvantage” these permitted farming land use activities and result in additional expenses and regulation, which would be out of proportion to the risk of these activities. Therefore, the submitters seek that matter of discretion (14) is amended to include Management Plans. If the relief sought is not adopted, the submitter requests the deletion of Rules 14.5.7 and 14.5.9. We note that the relevant matter of discretion is identically worded in region-wide Rule 5.123, and do not consider a relaxation from the region-wide requirements is appropriate.

11.69. Forest & Bird\textsuperscript{1414} seeks the addition of a new matter of discretion for several groundwater take and use rules to consider potential adverse effects on groundwater indigenous biodiversity.

11.70. We acknowledge that research into groundwater ecosystems, and the potential effects of activities on these communities, is ongoing. The potential adverse effects on groundwater ecosystems within the OTOP sub-region will largely be managed through the setting and implementation of revised allocation limits, and other land use controls such as restrictions on farming related activities. On this basis, we recommend rejecting the relief sought, while acknowledging that further information and research may assist future decision making.

11.71. The Egg Producer Federation NZ and Poultry Industry Association NZ\textsuperscript{1415} states that the proposed groundwater take and use rules are too restrictive and may result in replacement water takes for existing poultry operations not being granted. The submitter requests that the above provisions are amended to provide exemptions for reasonable water use for lawfully established poultry farms requiring replacement consents for shed washdown and irrigation.

11.72. While we acknowledge that complying with the revised groundwater allocation limits within the OTOP sub-region may be challenging for some moving forward, these limits are applicable to all water uses, and no special exemptions should be provided for particular land uses. Allowing further over-allocation of fresh water to continue, regardless of what the intended use of the water is, would be inconsistent with Objective B2 of the NPSFM. On this basis, we recommend rejecting this submission.

11.73. Fonterra\textsuperscript{1416} submits on all of the groundwater take and use rules, seeking further clarification as to how replacement stream-depleting takes within the Orari-Opihi GAZ will be treated and which takes will be able to access the T allocation. It considers that under the proposed framework, an applicant would be able to access the T allocation block through either Rule 14.5.7 or 14.5.9, which creates uncertainty. They seek that Rule 14.5.8 is deleted and Rule 14.5.7 and Rules 14.5.9 to 14.5.11 amended to address the concerns above. No specific amendments to the rules are proposed.

\textsuperscript{1412} PC7-214.139, PC7-214.140
\textsuperscript{1413} PC7-174.6, PC7-174.4
\textsuperscript{1414} PC7-472.185, PC7-472.186, PC7-472.187, PC7-472.188, PC7-472.189
\textsuperscript{1415} PC7-197.7, PC7-197.8, PC7-197.9, PC7-197.10, PC7-197.11
\textsuperscript{1416} PC7-416.13, PC7-416.20, PC7-416.12, PC7-416.14, PC7-416.22, PC7-416.15, PC7-416.16, PC7-416.23, PC7-416.21
11.74. We consider that the wording of the relevant rules is clear and the circumstances in which an applicant can access the T Allocation Block is distinguishable between Rule 14.5.7 and 14.5.9. The policy framework and other notes within Section 14 also clearly set out the circumstances in which the T Allocation Block can be accessed. On this basis, we recommend rejecting this submission point.

11.75. DHL similarly raises concerns in relation to the status of one of its stream depleting takes. It states that the take is connected groundwater but there is no T allocation provided for in the relevant Rangitata-Orton GAZ in Table 14(zb). The submitter notes that given that the same water permit authorises the take of the same water as ‘A allocation’ from deep groundwater, they are unsure where this permit sits within the proposed rule framework. Given the above, DHL requests that Rules 14.5.7 to 14.5.11 are reworded to make it clear how different takes are to be treated.

11.76. As discussed earlier, Part B of PC7 only introduces a T Allocation Block for the Orari-Opipi GAZ. For all other takes from different GAZs, regardless of whether they abstract from deeper groundwater sources, the allocation is treated as A Allocation. We do not consider that any further amendments to the rule framework are necessary and recommend rejecting this submission.

11.77. Several submitters request amendments to the notes associated with the groundwater take and use rules. Timaru DC, OWL and Barker Fruit Processing Limited state that ‘Note 2’ above Rule 14.5.1 refers to the groundwater abstraction rules rather than the surface water abstraction rules. As such, they seek that this note is added to the groundwater take and use rules. Timaru DC requests that an exception for the Pareora FMU is added to this note, while it seeks that this exception is removed from the existing ‘Note 2’ above Rule 14.5.7.

11.78. We consider that the reference to the groundwater take and use rules within ‘Note 2’ above Rule 14.5.1 is likely to be an error. Therefore, we recommend adopting the relief sought to the notes in both sections to provide clarity.

**Submissions on Rules 14.5.7 and 14.5.8 (the “swap” rules)**

11.79. Thirty-three submissions were received on Rules 14.5.7 and 14.5.8.

11.80. Several submitters request the deletion of condition (5) of Rule 14.5.7 which requires the existing surface water or groundwater permit being replaced to be for a take from an over-allocated surface water catchment. They note that this would only enable permit “swaps” within the Temuka catchment and preclude those that have changed status from direct groundwater to stream-depleting groundwater permits.

11.81. Several submitters consider that the wording of condition (2) of Rule 14.5.7 is confusing and request that the condition refers to the “proposed” take. We agree that this minor change would provide greater clarity for the intent of the condition and recommend adopting the relief sought.

---

1417 In relation to groundwater permit CRC143128 for DHL’s ‘Tata’ property.
1418 PC7-292.91, PC7-292.133
1419 PC7-381.53
1420 PC7-391.5
1421 OWL (PC7-381.53), Barker Fruit Processing Ltd (PC7-391.5)
1422 For example; Federated Farmers (430.235), OWL (381.65), TCWP (318.70), TCG (319.55), GWS (295.25)
1423 For example; OWL (381.64), TCWP (318.69), TCG (319.54), GWS (295.24),
11.82. The same submitters also consider that there should be greater alignment between the "swap" provisions throughout the CLWRP and request that the term ‘replace’ is amended to ‘substitute’ within Rule 14.5.7 and 14.5.8 as per the wording used in other sections.\footnote{1424}

11.83. We agree that while the terms ‘replace’ and ‘substitute’ essentially meant the same thing, there is merit in ensuring consistency between provisions within the CLWRP. On this basis, should the rule be retained, we recommend adopting the relief sought.

11.84. Federated Farmers states that non-compliance with one or more of the conditions of Rule 14.5.7 does not justify a prohibited activity status. It requests that the activity status of Rule 14.5.8 is amended\footnote{1425} to non-complying.

11.85. Given the intent of these provisions is to reduce the over-allocation of surface water resources and improve flows, the potential granting of a replacement water permit that exceeds an allocation limit or contributes further to stream depletion would likely undermine the freshwater outcomes for the OTOP sub-region. On this basis, we consider (other than with respect to bore interference effects) the prohibited activity status is appropriate to ensure that any water permits granted under these provisions do not result in further over allocation of resources which is consistent with the requirements set out in Policy B5 of the NPSFM.

Submissions on Rules 14.5.9 to 14.5.11

11.86. Thirty-six submissions were received on Rules 14.5.9 to 14.5.11.

11.87. Rangitata Dairies\footnote{1426} supports Rule 14.5.9 and seeks its retention. M A Orchards et al\footnote{1427} support Rule 14.5.9 and 14.5.10, subject to the adoption of their other relief sought for the wider groundwater provisions.

11.88. Several submitters\footnote{1428} seek the deletion of matter of discretion (7) which directs, for stream depleting groundwater takes, the consideration of the matters of discretion under Rule 14.5.7. Federated Farmers states that it is unclear why these matters have been added to the rule. The remaining submitters consider that the matters of discretion are already consistent between the rules and it appears that it has been included in error.

11.89. Under the operative region-wide provisions of the CLWRP, stream-depleting groundwater takes applied for under Rule 5.128 are also subject to the matters of discretion under the surface water take Rule 5.123. This is to capture other potential effects of groundwater takes with connections to surface water including, but not limited to, required reductions in over-allocated surface water catchments, minimum flows and the provisions of Water Conservation Orders. We agree with submitters that there is no difference between the matters of discretion for Rules 14.5.7 and 14.5.9, as they both apply to the take and use of groundwater.

11.90. We acknowledge that this is likely the result of a drafting error, and the matter of discretion should instead refer to the relevant surface water take and use rule for the OTOP sub-region,

\footnote{1424}{For example; OWL (PC7-381.63, 381.66), TWCP (PC7-318.53, PC7-318.54), GWS (PC7-295.19, 295.20), TCGI (PC7-319.53, 319.57)}
\footnote{1425}{Federated Farmers (PC7-430.236)}
\footnote{1426}{PC7-316.7}
\footnote{1427}{PC7-488.3, PC7-488.4}
\footnote{1428}{For example; TCWP (318.55), GWS (295.21), TCGI (319.58), Federated Farmers (430.237), OWL (PC7-381.67)
Rule 14.5.4. Therefore, we recommend that these submissions are accepted in part, and that matter of discretion (7) is amended to refer to Rule 14.5.4.

11.91. Federated Farmers\textsuperscript{1429} and OWL\textsuperscript{1430} support Rules 14.5.10 and 14.5.11, and seek that they are retained as notified.

**Submissions on Table 14(zb)**

11.92. Twenty-four submissions were received on Table 14(zb).

11.93. DHL\textsuperscript{1431} supports the replication of A Allocation limits from the current CLWRP framework for the Rangitata-Orton GAZ, on the basis that one of the submitter’s permits which authorises the take of both deep groundwater and shallow connected groundwater continues to be reflected as A Allocation. DHL\textsuperscript{1432} also requests the addition of a new note in Table 14(zb) that clarifies that where no T Allocation is provided, all takes are to be treated as A Allocation.

11.94. Eight submitters raise concerns with the methodology used to calculate the allocation limits within Table 14(zb), and either seek further clarification and/or amendments to the notified limits for one or several of the GAZs.

11.95. Rangitata Dairies\textsuperscript{1433} seeks to ensure all of the allocation limits specified in Table 14(zb) reflect the actual allocations at the time PC7 was notified.

11.96. TCWP\textsuperscript{1434}, GWS\textsuperscript{1435} and TCG\textsuperscript{1436} consider Table 14(zb) incorrectly caps existing groundwater at current allocation, and are concerned that T Allocation is only provided if transferring from surface water. They note that advice from TCWP’s consultants, which informed the OTOP ZC recommendations, suggested that only approximately 10 million m\(^3\)/yr was required to enable swaps to deep groundwater in the Orari-Opihi GAZ. However, the submitters note that the T Allocation limit as notified is the difference between the existing limit for the zone within the CLWRP of 71.1 million m\(^3\)/yr and what is considered to be the current allocation for the zone of 43.8 million m\(^3\)/yr. The submitters consider this “current” allocation is out of date (i.e. up to July 2017) and has not taken into account many consented takes and renewals prior to the notification of PC7.

11.97. The same submitters as above accept that where zones are over-allocated, it is appropriate to cap allocation at current consented abstraction. However, where zones are not over-allocated, they seek to retain the ability for further groundwater abstractions. The submitters have requested the following amendments to the allocation limits in Table 14(zb) to reflect their submissions:

<table>
<thead>
<tr>
<th>Zone (see Planning Maps)</th>
<th>A Allocation Limit (million m(^3)/yr)</th>
<th>T Allocation Limit (million m(^3)/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rangitata-Orton</td>
<td>42.5 Sum of consented allocation at 20 July 2019</td>
<td>N/A</td>
</tr>
</tbody>
</table>

\textsuperscript{1429} PC7-430.238, PC7-430.239  
\textsuperscript{1430} PC7-381.68, PC7-381.163  
\textsuperscript{1431} PC7-415.5  
\textsuperscript{1432} PC7-415.22  
\textsuperscript{1433} PC7-316.2  
\textsuperscript{1434} PC7-318.61  
\textsuperscript{1435} PC7-295.11  
\textsuperscript{1436} PC7-319.63
11.98. OWUG\textsuperscript{1437} also queries the accuracy of the methodology used to calculate the allocation limits within the Orari-Opihi GAZ. It states that some takes in the Resource Consent Inventory have been attributed to the wrong GAZ or SWAZ, and note that there are other errors. The submitter has provided examples of consent numbers and scenarios which they believe have been dealt with incorrectly. The submitter also considers there is uncertainty with whether any changes to allocation limits have been made with respect to the extended boundaries of the Orari-Opihi GAZ. The submitter supports a T Allocation block but considers the proposed limit for this block is too high. As such, the submitter requests that the A and T Allocation limits for the Orari-Opihi GAZ should be amended in Table 14(zb) to 61.1 million m\textsuperscript{3}/yr and 10 million m\textsuperscript{3}/yr respectively.

11.99. Fonterra\textsuperscript{1438} also queries how the allocation limits for the Orari-Opihi GAZ, in particular, have been determined. The submitter understands that the A Allocation limit for this zone is based on an estimate of the volume of groundwater takes from a consent inventory that are not anticipated to be stream depleting, with the T Allocation limit then being the difference between that estimated figure and the maximum allocation identified for the zone. The submitter states that it is unclear which permits have, or haven’t, been identified as stream depleting, which may lead to confusion and uncertainty for groundwater users. As such, the submitter requests greater certainty with regard to the appropriateness of the proposed limits. The submitter also seeks clarity as to why the maximum allocation for the Orari-Opihi GAZ didn’t change following amendments to its boundaries. We have made some general points earlier in this report, including in the legal analysis, regarding the appropriateness of using the sum of existing resource consents as a means of setting an allocation limit, and we continue to suggest caution on this. Debates over the inclusion of every last consent potentially misses the point. In response to the last matter, we note that while the area of the zone changed, the area where land surface recharge is occurring did not change, and hence the groundwater allocation did not change.

11.100. OWL is concerned with the robustness of the methodology used and considers that the following matters have not been accounted for in setting the proposed limits within Table 14(zb):

- all groundwater allocations consented at the date of notification of PC7;
- all consented groundwater allocations outside of pre-PC7 GAZ boundaries;
- all permits deemed to authorise direct or high stream depleting groundwater abstractions as a result of PC7 (and therefore which should fall within surface water allocation limits, not groundwater allocation); and

\textsuperscript{1437} PC7-145.8, PC7-145.9

\textsuperscript{1438} PC7-416.3
• the estimated annual volume of Land Surface Recharge for all of the new extended GAZs (being the basis for the CLWRP limits, which were set at half the estimated annual volume of Land Surface Recharge for each pre-PC7 GAZ).

11.101. OWL also considers supporting technical information indicates that the change in status of any permits from direct groundwater to stream depleting groundwater will free up allocation within the majority of the GAZ in the OTOP sub-region for further sustainable abstraction. The submitter considers this is not reflected in the proposed limits in Table 14(zb). The submitter also considers that the estimate of allocation from water permits is outdated and contains errors. OWL request the following amendments to Table 14(zb) (until further analysis is completed to inform the development of a robust set of GAZ allocation limits):

• Amend A Allocation limits for the Rangitata-Orton, Fairlie, Pareora, Timaru and Upper Pareora GAZs to include a narrative such as “sum of consented allocation at 20 July 2019”;
• Reduce the T Allocation limit for the Orari-Opihi GAZ to 10 million m³/yr, and increase the A Allocation limit to 61.1 million m³/yr;
• Include a new T Allocation limit for the Levels Plain GAZ of 10 million m³/yr, and reduce the A Allocation limit to 22.9 million m³/yr.

11.102. We note that aside from the Fairlie GAZ (which is currently below the operative CLWRP allocation limits) the intent of the proposed limits within Table 14(zb) is not to adopt the sum of the consented takes as a maximum limit moving forward. We do not consider that such an allocation methodology is well supported technically, as it does not consider sustainability or the environmental effects of the allocation. Rather, the proposed limits seek to ensure that over-allocation is addressed by reducing groundwater allocation back to the maximum limits originally intended by the planning framework. Simply enabling over-allocation to continue is inconsistent with the objectives of the CLWRP, Te Mana o te Wai, the CRPS and the direction of the NPSFM. On this basis, we recommend rejection of OWL’s request to amend A Allocation limits for the listed GAZs to the sum of consented allocation at 20 July 2019.

11.103. M A Orchards et al request that the allocation limit for the Levels Plain GAZ is re-assessed based on a robust scientific methodology which takes into account all of the matters set out by OWL above.

11.104. Ten submitters, in addition to OWL, also request a new T allocation block to be provided for the Levels Plain GAZ. The submitters state that water users within this zone should have the option to transfer to deep groundwater given that many will be subject to new minimum flows under PC7. The submitters request that the A allocation limit for the Levels Plain GAZ is amended to 22.9 million m³/yr and a new T allocation limit of 10 million m³/yr while retaining the total allocation of 32.9 million m³/yr.

11.105. We note that T Allocation blocks have only been provided where a surface water allocation block within that GAZ is over-allocated and the proposed A Allocation block limit is below the current operative CLWRP limit. These factors only exist in the Orari-Opihi GAZ.

---

1439 PC7-488.6
1440 For example; J Kyle (PC7-411.7), Tronnoco Farming Co Ltd (PC7-210.9), K & K O’Kane (PC7-354.10), M E Oldfield (PC7-134.7), Waipopo Farm Ltd (PC7-375.7)
12. Quality – Nutrient Management

Introduction

12.1. This section discusses the provisions in Part B of PC7 that propose new water quality limits for all waterbody types in the OTOP sub-region and methods to achieve those limits. These methods include the introduction of additional requirements for the management of farming activities and diffuse discharges of nitrate nitrogen within the OTOP sub-region.

12.2. Proposed Plan Change 7 to the CLWRP introduces new water quality outcomes, limits and targets for OTOP rivers (Table 14(c)), lakes (Table 14(e)) and groundwater (Table 14(g)).

12.3. Proposed Plan Change 7 to the CLWRP also introduces seven new policies to Section 14 of the CLWRP for nutrient management. These policies are implemented by fifteen new rules, which replace the existing region-wide policies and rules for nutrient management. PC7 also includes new policies and rules to exclude stock from surface waterbodies.

12.4. The package of provisions also includes new definitions of ‘Fairlie Basin High Nitrogen Concentration Area’ and ‘Level Plain High Nitrogen Concentration Area’ and ‘Rangitata Orton High Nitrogen Concentration Area’ (including changes to the planning maps to define these areas).

12.5. These provisions are a key component of the solutions package for the OTOP sub-region for the management of farming activities and, in particular, the diffuse discharge of nitrate nitrogen.

12.6. Nitrate is a significant issue for the OTOP sub-region, as nitrate nitrogen levels are increasing in surface water and groundwater in many parts of the zone, posing a risk to ecological values and for human health for drinking.

12.7. The Orari River currently experiences cyanobacteria mats in the lower reaches during summer, it is also susceptible to excessive macrophyte growth. The upper Temuka River has good ecosystem health; however, the lower reaches have poor ecosystem health. The Opihi River also has issues with the lower reaches. The Opuha River can experience high periphyton levels and has shown to have a decreasing trend since the construction of the Ophua Dam. The Pareora River also has nutrient issues in the lower reaches and can experience frequent nuisance periphyton.

12.8. Part C of PC7 also proposes similar (but not identical) extensions to the policy and rule framework applicable within the Waimakariri sub-region. While common submissions have been made on both the OTOP and Waimakariri stock exclusion provisions, these have been considered separately, as both are ultimately part of a wider set of provisions that are collectively aimed at meeting the specific outcomes for the relevant sub-region. As a consequence, there is inevitably some repetition between the discussion and analysis of submissions in both the OTOP and Waimakariri parts of this Section 42A Report.

---

1441 Policies 14.4. 17 to 14.4.20C
1442 Nutrient Management Rules 14.5.14; 14.5.1514.5.16; 14.5.16A; 14.5.16B; 14.5.17; 14.5.18; 14.5.19; 14.5.20; 14.5.21; 14.5.22. Irrigation Scheme Rules 14.5.23; 14.5.23A. Incidental Nutrient Discharges Rules 14.5.24 and 14.5.24A.
12.9. The provisions are grouped and considered according to the following topics:

- Farming land use and nitrate management
- Stock Exclusion
- High Nitrogen Concentration Areas

12.10. We also note that the relevant water quality limits and targets\textsuperscript{1444} for the sub-region are discussed in Part 4 Section 3 ‘OTOP Outcomes’ of this Report.

**Farming Land Use and Nitrate Management\textsuperscript{1445}**

**Topic-wide themes and submissions**

12.11. There are various submitters\textsuperscript{1446} who comment on a broad range of provisions within Chapter 14, i.e. by reference to “Nutrient Management Provisions Policy 14.4.17 – 14.4.28 (p 136 – 139) Rule 14.5.14 – 14.4.23A (p 149 – 153)”. However, the matters raised in these submissions and other discrete submission points\textsuperscript{1447} do not appear to relate to the specific direction in the Nutrient Management provisions. For example, they comment on use of the Farm Portal, GMP calculations, scientific methodology, and request further or ongoing scientific investigations. These are not matters relating to the provisions in this topic, and so are not addressed in this section of the Section 42A Report.

12.12. The submission from Trellegan Farm Ltd\textsuperscript{1448} requests that time frames be extended by five years for HNCA nitrogen reductions and changes to flow regimes for farmers who are affected by both parts of the plan change. Wainono Dairy and the Upper Opihi Opuha Catchment Board’s submissions also note concern about compounding changes to both nutrient management provisions and flow regimes and how they might affect wider community. We appreciate that there are compounding circumstances which cause concern for affected businesses. However, extending timeframes for selected discharge consents might be considered inequitable, and would delay water quality improvement in the HNCAs and throughout the sub-region. We consider that this would not be giving proper recognition to Te Mana o te Wai.

12.13. A number of submissions\textsuperscript{1449} request delays/deletion of provisions which refer to Baseline GMP on the grounds that the effects of GMP have been modelled for the purposes of PC7. These submissions generally request that GMP be implemented, the effects measured, and from there further reductions can be calculated from a definitive starting point. We

\textsuperscript{1444} Table 14(c), Table 14(d), Table 14(e), Table 14(g).

\textsuperscript{1445} The planning authors of this section are Lochiel McKellar and Matthew McCallum-Clark.

\textsuperscript{1446} For example; Orari Estate Holdings Ltd (PC7-161.4, PC7-161.6, PC7-161.7, PC7-161.9, PC7-161.34, PC7-161.36), Dairy Farm Management Services Ltd (PC7-219.10, PC7-219.11, PC7-219.23, PC7-219.35, PC7-219.36, PC7-219.37), Biggs Agriculture Ltd (PC7-221.7, PC7-221.14), Trellegan Farm Ltd, Moffitt Dairy Ltd (PC7-435.2, PC7-435.3, PC7-435.15, PC7-435.17, PC7-435.18, PC7-435.30, PC7-435.42, PC7-435.43, PC7-435.55, PC7-435.56, PC7-435.57, PC7-435.58), Darby Farm Partnership (PC7-464.7, PC7-464.8, 464.20, PC7-464.22, PC7-464.23, PC7-464.35, PC7-464.47, PC7-464.48, PC7-464.60, PC7-464.61, PC7-464.62, PC7-464.63) Orton Downs Farm Partnership (PC7-469.2, PC7-469.3, PC7-469.15, PC7-469.17, PC7-469.18, PC7-469.30, PC7-469.42, PC7-469.43, PC7-469.55, PC7-469.56, PC7-469.57, PC7-469.58)

\textsuperscript{1447} Cascade Irrigation Race Ltd (PC7-159.15)

\textsuperscript{1448} J Downward (PC7-361.21, PC7-361.24, PC7-361.25, PC7-361.26, PC7-361.28, PC7-361.29)

\textsuperscript{1449} For example; Tepuni Partnership (PC7-412.1), Wainono Dairy Ltd (PC7-237.15), Biggs Agriculture Ltd (PC7-221.8), M Adams (PC7-554.5, PC7-554.6), G P Scott (PC7-403.3)
acknowledge that there is frustration stemming from the use of scientific modelling rather than measured starting points. Regardless there is a statutory requirement in the NPSFM (Policy A2) to implement methods to achieve water quality targets within a defined timeframe. Technical work indicates that implementation of GMP alone is unlikely to be enough to achieve these standards. Waiting to measure the need for and extent of further reductions will only delay changes and prolong poor water quality (with the potential to allow further deterioration). This is particularly true for the Rangitata Orton and Fairle Basin HNCA which are unlikely to meet water quality targets within the life of this plan even with the first step of reductions.

12.14. Beef + Lamb declares that the HNCA framework and other nutrient management provisions in Part B of PC7 asserting they would not provide for the social or economic wellbeing of the communities affected. It claims this is a grandparenting framework which does not incentivise land use change and unfairly disadvantages past/current low emitters. Furthermore, unlike the equivalent provisions in Part C of PC7 (Table 8-9), the Part B percentage reductions do not include a reduction threshold below which emitters are exempt from any requirement to meet the reduction for that timestep (this is addressed below).

12.15. Instead Beef + Lamb’s submission requests the development of an alternative nutrient management framework to meet the list of criteria set out in its submission. The submitter proposes two alternative approaches to manage nutrient allocation in the sub-region. The first is to set a flat rate of permitted nitrogen discharge per ha based on the sub catchment load. The second option is based on the natural productive potential of soil and would manage nitrogen allocation based on the LUC classification system. Using one of these methods the framework would:

- Retain flexibility for operations which operate with a low impact or at a “sustainable” level;
- Require “non-sustainable” farming activities to make progressive reductions to meet environmental outcomes; and
- Enable the transfer or sharing of nutrient discharges through establishment of nutrient user groups.

12.16. While there may be benefits to a land use capacity system Beef + Lamb does not provide specific direction for how such a regime would be drafted and implemented. There is also no evidence provided to support these approaches in the submission, for example a flat rate limit of 20 kg N/ha/year is suggested but there is no accompanying information explaining why this is an appropriate threshold. Regardless, we consider that such a regime is inappropriate for Canterbury. This system would effectively favour some farm systems by enabling development and flexibility for primarily dryland or partially irrigated sheep, beef and cropping farms. Also, LUC does not consider changes in land capability resulting from activities on the land. Instead it is informed by a field assessment of the physical profile of the land. Given the widespread measures throughout rural Canterbury to enhance soil productivity (i.e. irrigation) these would not accurately reflect the carrying capacity of the land and what behaviour change is required by users to manage nutrient losses. We are also concerned that this regime would allow low emitters the immediate flexibility to increase their nitrogen leaching, while the reductions required by high emitters would be incremental, over an unspecified time period. These compounding circumstances could increase nitrogen leaching throughout the catchment in the early stages of the plan, resulting in further degradation of

---

waterbodies before there is any progress towards meeting the freshwater targets in the NPSFM and drinking water standards in the DWSNZ. Finally, such a regime would be inconsistent with the provisions and approach taken in other chapters of the CLWRP. We consider it important that this process delivers a cohesive and consistent regional framework for Canterbury.

12.17. Ravensdown\textsuperscript{1451} seeks a number of changes to the Nutrient Management framework which are best considered as a whole rather than by each provision. It supports the identification of the HNCA but seeks deletion of Table 14(2c) and the staged reductions, submitting that instead the aim of nitrogen losses should be to achieve the freshwater limits and targets in Tables 14(d), 14(f) and 14(g). Ravensdown submitted the same changes to the equivalent provisions in Section 8 of PC7 and we refer to the analysis in Part 4 Section 8 of this Report.

12.18. Arowhenua and Te Rūnanga\textsuperscript{1452} also requests that various provisions be amended to align with or “exceed” what is proposed by the draft NES for Freshwater 2019. At this stage we do not think it is appropriate to make specific amendments to the plan change in response to draft national direction.

12.19. RSIL\textsuperscript{1453} seeks Part B of PC7 is amended to include additional definitions, policies and rules to enable the formation of nutrient user groups within the OTOP sub-region. As the CLWRP already provides for farming enterprises at a region-wide level, we are doubtful whether nutrient user groups would provide additional value. Given this, we recommend the relief sought be rejected. RSIL\textsuperscript{1454} also seeks that ‘nitrogen baseline’ is defined in Section 14. The definition sought is largely similar to the region-wide definition of nitrogen baseline, but includes an additional clause which states that where shares were purchased with RSIL prior to 31 December 2013, the calculation of the nitrogen baseline in accordance with clause (a) of the definition will be on the basis that the farming activity enabled by these shares was operational. The submitter considers this relief will recognise the “significant investment” by shareholders which occurred prior to the notification of the CLWRP. We consider the relief sought by the submitter is already provided by region-wide nutrient management policies and do not consider an additional definition to cover this scenario is required.

Submissions and Analysis on Policy 14.4.17

12.20. Policy 14.4.17 is a new Policy which lists methods by which water quality outcomes, limits and targets elsewhere in Section 14 will be met. Forty-eight submissions have been received on Policy 14.4.17. Seven submissions support the Policy and request it is retained, including Timaru DC which supports the intent of the Policy, and OWL whose support is conditional on its relief sought to Tables 14(a) – 14(g) being granted. Six submissions oppose the Policy, all of which seek the deletion of clause (d). The remaining thirty-five submissions seek various amendments to Policy 14.4.17.

12.21. Submitters in support\textsuperscript{1455} note the consistency with the region-wide framework in the CLWRP. Fish & Game notes that clauses (d) and (e) will help to ensure appropriate management of

\begin{footnotes}
\textsuperscript{1451}PC7-114.27, PC7-114.35, PC7-114.36, PC7-114.38, PC7-114.37, PC7-114.43, PC7-114.49, PC7-114.53, PC7-114.54, PC7-114.59, PC7-114.103
\textsuperscript{1452}PC7-424.22, PC7-424.23, PC7-424.24, PC7-424.25, PC7-424.26
\textsuperscript{1453}PC7-235.30
\textsuperscript{1454}PC7-235.21
\textsuperscript{1455}For example; Ravensdown (PC7-114.34), Timaru DC (PC7-292.66), Ballance (PC7-441.29), Fish & Game (PC7-351.41), OWL (PC7-381.45), Synlait (PC7-188.35), Silver Fern Farms Ltd (PC7-468.16)
\end{footnotes}
these sensitive areas. Ballance notes clause (d) is consistent with Policy 4.38I and clause (b) sets up the FEP and GMP framework. Synlait also mentions the use of the Mātaitai Zone, and OWL notes that this Policy will help the Council deliver on requirements of the NPSFM.

12.22. Some submissions seek recognition in the Policy that different winter feeding practices have different impacts on the environment. The submissions do not give examples for how this might be included in the Policy. Overall, we do not agree that the Policy is an appropriate place for this information. I & H McMillan request for the Policy to be amended to clarify which land parcels it applies to. We note that the Policy should be read in conjunction with the region-wide and chapter definitions, along with the Planning Maps volume of the CLWRP and do not believe that amendments to Policy 14.4.17 are necessary in response to this submission.

12.23. Beef + Lamb made submissions on this Policy about the necessity of livestock exclusion from all waterbodies and requesting Environment Canterbury funded cultural advisors to support land users. These issues have been considered in the next section of this report and we refer to those recommendations. Orari Estate Holdings seeks that the Policy is amended to provide longer timeframes to seek outcomes. We note that specific timeframes are not included in Policy 14.4.17, but acknowledge that related provisions including the outcomes and limits tables do, and these are addressed earlier in this report.

12.24. Forest & Bird requests that the threshold in clause (a) is reduced from 10 ha to 0.5 ha. Gibson Family Trust requests that the same threshold is increased to 20 ha. We note that this clause, and threshold, is a duplication of Policy 4.36(b) and do not consider any amendments to the threshold necessary at this stage. Rooney Farms seeks deletion of deer from the wording of clause (d).

12.25. The submissions opposing clause (d) do so on the grounds that the money spent on a consent could be better spent on environmental initiatives in the area. Moreover, they consider the 10% winter grazing rule to be sufficient, and that the Catchment Group is an appropriate forum to identify problems and work towards change. In addition, other submissions request amendments to clause (d). Tepuni Partnership requests that the consent requirement in clause (d) is removed. G B Patterson, V J Patterson and NZDFA request, through suggested drafting changes, that the requirement for an audited FEP be amended to a Farm Management Plan. They also submit that the clause should specify the winter grazing of deer and cattle within the HRRPZ, and that the 20 ha threshold be changed to 10% of the property, as do Knocklyn Holdings and Woodbury Deer Industry Environment Group. KW & CJ Orange Partnership also request that the threshold is amended, they suggest

---

1456 For example; Knocklyn Holdings Limited (173.7), Orari Gorge Station (PC7-259.5), Woodsbury Deer Industry Environment Group (PC7-271.6)
1457 PC7-568.41
1458 PC7-214.119, PC7-214.120
1459 PC7-161.2
1460 PC7-472.162
1461 PC7-341.8
1462 PC7-453.7.
1463 We note that the submission and SoDR reference clause (c) however the submission itself is related to clause (d)
1464 For example; Biggs Agriculture Limited (PC7-221.11), Federated Farmers (PC7-430.196), S & J McAtamney (PC7-440.5), Wainono Dairy Ltd (PC7-237.37), Upper Opihi-Opuha Catchment Group (PC7-238.37)
1465 For example; Tepuni Partnership (PC7-412.6), G B Patterson (PC7-75.4), V J Patterson (PC7-73.3), NZDFA (PC7-296.7), Woodbury Deer Industry Environment Group (PC7-271.5, PC7-271.4, PC7-271.9, PC7-271.10)
15%. Woodbury Deer Industry also requests that the clause does not restrict the area of winter grazing outside of the HRRPZ.

12.26. We note that some clauses in Policy 14.4.17 replicate and/or seek to achieve the same outcomes as region-wide policies 4.36 and 4.38I. Section 2 of the CLWRP is clear that the region-wide provisions apply throughout the region, so we recommend deleting some clauses from Policy 14.4.17 to avoid duplication. We also note similar provisions within PC7 which duplicate the outcome of clauses within Policy 14.4.17. A number of further amendments are recommended to streamline the nutrient management framework introduced by PC7. These changes are recommended on the basis that the region-wide thresholds are considered to still be broadly appropriate for the majority of farming in the OTOP Zone.

12.27. HNZPT and Forest & Bird both request that the word “minimised” in clause (f) be deleted and replaced with “avoided”. HNZPT note that this would be consistent with the wording in Schedule 7. As assessed in Section 4 of this part of the Section 42A Report, we agree that stronger protection for the RAMA within the policy framework is appropriate and would provide a consistent approach for activities occurring in RAMAs in PC7.

**Recommendation**

12.28. That Policy 14.4.17 is amended as per Appendix E.

**Policy 14.4.20**

12.29. Policy 14.4.20 describes the circumstances where a decision maker may consider granting an application for a land use consent for a farming activity to exceed the Baseline GMP Loss Rate. The Policy sets out that, for properties within an HNCA, applications must demonstrate how they will achieve the further reductions set out in Table 14(zc).

12.30. Twenty-six submissions were received on Policy 14.4.20. Five of these support the Policy, including Timaru DC which supports its intent. Twenty submissions support the Policy in part, requesting various amendments. Beef + Lamb opposes Policy 14.4.20, requesting an alternative framework. Our response to Beef + Lamb’s submission point is addressed a few pages earlier in this report.

12.31. Ballance, Federated Farmers and Silver Fern Farms Ltd support the Policy as it enables, in limited circumstances, the consideration of land use consent applications where a farming activity will exceed GMP. DOC supports that the Policy works towards reducing nitrogen losses to achieve freshwater outcomes. Timaru DC also supports this intent of the Policy and acknowledges that it helps protect its interest in providing community drinking-water supplies.

12.32. Of the submissions which request amendments to the Policy, a number raise issues with Environment Canterbury’s use of GMP and OVERSEER®. These submissions are addressed in

---

1466 PC7-331.4
1467 PC7-472.163
1468 DOC (PC7-160.86), Timaru DC (PC7-292.69), Ballance (PC7-441.33), Federated Farmers (PC7-430.199), Silver Fern Farms Ltd (PC7-468.19)
1469 PC7-214.125
1470 For example; Dairy Farm Management Services Ltd (PC7-219.12), Orari Estate Holdings Ltd (PC7-161.10), Moffit Dairy Ltd (PC7-435.4), Orton Downs Partnerships (PC7-469.4), Darby Farm Partnership (PC7-464.9)
the Common Themes section of this report. Numerous submissions\textsuperscript{1471} also request a more intensive scientific monitoring and review process going forward. Our position on this matter has been discussed earlier in this report. Orari Estate Holding Ltd’s submission\textsuperscript{1472} on timeframes for achieving outcomes primarily relates to the dates in Table 14(zc) of PC7. Submissions on the timeframes for achieving nutrient reductions are addressed in relation to Table 14(zc), and therefore, are not discussed further within this section of the report. Tepuni Partnership’s submission\textsuperscript{1473} on Policy 14.4.20 to delete the percentage reductions within the HNCAs is also addressed alongside submissions on Table 14(zc). RSIL\textsuperscript{1474} and DairyNZ\textsuperscript{1475} both seek amendments relating to the cessation of reductions in the HNCAs when water quality outcomes have been met. This matter is addressed below in relation to HNCAs.

12.33. Ravensdown’s submission\textsuperscript{1476} is generally supportive of the Policy and clauses (a) and (b), but it requests changes to clause (c) which are a consequential change to its objection to parts of the proposed nutrient management framework. For an evaluation of Ravensdown’s alternative refer to Part 4 Section 8 of this report.

12.34. DHL\textsuperscript{1477} requests that provision be included for activities to exceed Baseline GMP where the applicant can show that the proposed increase would not have an adverse effect on the environment. The submitter is concerned with the intent of this Policy. We note that no such exception is in the region-wide Red NAZ Policy framework so do not consider it an appropriate addition to the OTOP framework.

12.35. Raumea Farms Ltd\textsuperscript{1478} seek amendments to clauses (b) and (c) on the ground that these clauses are unfair to farms with a history of actively managing nitrogen leaching. We note that the wording of clause (b) is based on the region-wide Policy 4.38C(b). We do not consider additional pathways to acquiring a consent where the Baseline GMP Loss Rate is exceeded is appropriate.

12.36. RSIL\textsuperscript{1479} seek an amendment to clause (a) and a corresponding change to Rule 14.5.19(2) to allow shareholders of their scheme to begin and continue application processes for farming land use consents. We note that the Irrigation Scheme provisions, Rules 14.5.23 14.5.23A, allow for consideration of consent applications which do not meet the staged reductions in nitrogen loss so consider that further amendments to this effect in other rules of the plan are unnecessary.

**Recommendation**

12.37. That Policy 14.4.20 is amended as per Appendix E.

\textsuperscript{1471} For example; Orari Estate Holdings Ltd (PC7-161.12), Moffit Dairy Ltd (PC7-435.19), Orton Downs Partnerships (PC7-469.19), Darby Farm Partnership (PC7-464.24)

\textsuperscript{1472} PC7-161.11

\textsuperscript{1473} PC7-412.3

\textsuperscript{1474} PC7-235.35

\textsuperscript{1475} PC7-357.51

\textsuperscript{1476} PC7-114.37

\textsuperscript{1477} PC7-415.13

\textsuperscript{1478} PC7-110.2, PC7-110.3

\textsuperscript{1479} PC7-235.24, PC7-235.25
Policy 14.4.20A

12.38. Policy 14.4.20A provides guidance for consent applications for farming land use activities within the HNCA where the nitrogen loss rate reductions required by Policy 14.4.20C are unable to be achieved within the timeframes set out in Table 14(zc).

12.39. Forty-three submissions were received on Policy 14.4.20A. Five submissions support the Policy and seek it be retained. RSIL’s support specifically seeks that clause (c) be retained. Two submissions oppose the Policy, with Beef + Lamb seeking an alternative nutrient management framework, and Forest & Bird requesting the deletion of clause (c) of the Policy. The remaining thirty-six submissions oppose the Policy in part and seek a variety of amendments.

12.40. Support for the Policy is generally cited as being because it provides an opportunity for applications to extend the timeframes for meeting the staged reductions in Table 14(zc). Timaru DC supports the intent of the Policy as it will contribute to reduction in nitrogen losses and protect drinking water quality.

12.41. Beef + Lamb’s alternative framework is addressed elsewhere in this Report. We note Forest & Bird’s opposition to clause (c) and agree that it would be appropriate to delete the clause.

12.42. Twenty-one of the submissions requesting amendments support enabling farmers to apply for an extension in time to meet the staged reductions. They request that the policy be widened to allow existing consent holders to apply for an extension as it currently only applies to consent applications. Three submitters include specific suggestions for how this might be drafted.

12.43. Springfield Partnership seeks a threshold where no further reductions are required where 15 kg N/ha loss has been achieved (we presume the submitter’s intent is 15 kg N/ha/yr). The submitter does not provide drafting for this, or evidence to support why a 15 kg N/ha floor is an appropriate limit.

12.44. DairyNZ request the insertion of a new clause as follows:

14.3. The effects of achieving the environmental flow and allocation regimes set out in tables 14(h) to 14(za).

12.45. Tepuni Partnership’s submission seeks deletion of the percentage reductions in the HNCAs which are associated with this Policy. The submission points from Ravensdown are also consequential amendments stemming from its submission on Table 14(zc). The evaluation and response to both of these submission points is covered in that section of this report. RSIL has requested the Policy be amended to allow for the cessation of reductions when

---

1480 Beef + Lamb (PC7-214.126), Forest & Bird (PC7-472.171)
1481 For example; Timaru DC (PC7-292.70), Ballance (PC7-441.34), SCCC (PC7-340.20), Silver Fern Farms Ltd (PC7-468.20), RSIL (PC7-235.31)
1482 OWL (PC7-381.48), Federated Farmers (PC7-430.200), DairyNZ (PC7-357.52)
1483 PC7-306.10
1484 PC7-357.75
1485 PC7-412.4
1486 PC7-114.38, PC7-114.103
1487 PC7-235.36
water quality targets have been achieved. Our consideration of this matter is set out earlier in this report.

**Recommendation**

12.46. That Policy 14.4.20A is amended as per Appendix E.

**Policies 14.4.20B and 14.4.20C – ‘Equivalent Pathway’**

12.47. Policy 14.4.20B provides for the use of an “equivalent pathway” to determine GMP loss rates where the Farm Portal is unable to generate a number, or the number is demonstrated to be erroneous.

12.48. Thirty-nine submissions were received on Policy 14.4.20B. Twenty-seven submissions are in support of the Policy or its intent. Beef + Lamb oppose the Policy, an evaluation and response to their alternative framework is covered later in this report. Eleven submissions oppose Policy 14.20B in part and seek amendments.

12.49. Submissions generally support the Policy as it explicitly provides a consent pathway which is an alternative to using the Farm Portal. These submissions seek that it is retained as notified. DairyNZ seeks deletion of the phrase “in those limited circumstances” but otherwise supports the Policy. These words were considered in Part 1 of this Report and we refer back to that analysis and recommendation of this submission point.

12.50. Fonterra and Silver Fern Farms Ltd both seek the Policy be amended to “Provide consideration of an” rather than “Provide the use of an…” stating that it is a more appropriate phrase given that compliance with the Equivalent Baseline GMP Rate is not required. We note that Policy 14.4.20B is a duplication of region-wide Policy 4.38D. In the event that the Hearing Panel do not agree with our recommendation below, we do not recommend any changes in response to these submission points to ensure there is consistency throughout the CLWRP in the wording and application of the policies.

12.51. Other requested amendments were repeated submission points which have been addressed elsewhere in this report.

12.52. Policy 14.4.20C provides guidance to enable the review of resource consents that contain an Equivalent Baseline GMP Loss Rate or Equivalent Good Management Practice Loss Rate when the Farm Portal is able to generate a Baseline GMP Loss Rate or GMP Loss Rate. Thirty-eight submissions have been received on Policy 14.4.20C. Five of these are in support of the Policy, three oppose it and thirty seek amendments.

12.53. The submissions supporting the Policy seek that it be retained as notified, including Timaru DC which recognises that the Policy will contribute towards improvement of water quality and

---

1488 PC7-214.135
1489 For example; Ravensdown Ltd (PC7-114.39), Timaru DC (PC7-292.71), OWL (PC7-381.49), RSIL (PC7-235.32), Federated Farmers (PC7-430.201)
1490 PC7-357.53
1491 PC7-416.10
1492 PC7-468.11
1493 For example; Ravensdown (PC7-114.40), Timaru DC (PC7-292.72), Ballance (PC7-441.36), Silver Fern Farms Ltd (PC7-468.12), DHL (PC7-415.9)
seeks that its intent be retained. Silver Fern Farms Ltd and DHL both support the Policy as it provides for an alternative consenting pathway. Ravensdown and Ballance support the provision of an alternative pathway and the clause allowing for a review of consents which could later be brought into the Farm Portal as a matter of equity. Ballance also notes that the Policy is consistent with the region-wide framework.

12.54. Bonifacio Family Trust\textsuperscript{1494} opposes the Policy and seeks its deletion. The Trust reasons that the cost of a consent review should not have to be paid by the consent holder in this situation, and that Policy 14.4.20B itself is sufficient. DairyNZ\textsuperscript{1495} also opposes the Policy and seeks that it be deleted as it removes certainty from farming operations who are operating within the equivalent framework. Beef + Lamb\textsuperscript{1496} opposes the Policy, an evaluation and response to their alternative framework is covered later in this report. With reference to the Common Themes section of this report, we recommend deletion of the Policy as it replicates region-wide Policy 4.38E so we consider it to be redundant.

12.55. Twenty-one of the submissions\textsuperscript{1497} request that the Policy be amended to limit the scope of any potential resource consent review. They request that only conditions relating to the nutrient discharge allowance be reviewed. OWL provides alternative wording which it considers would achieve this change. We note that this Policy replicates regionwide Policy 4.38E which does not limit consent reviews to only consider nutrient discharge allowances.

12.56. Federated Farmers\textsuperscript{1498} requests that the Policy be amended to specify that the Farm Portal must be able to generate a loss rate which is not erroneous. The submitter also submitted this on similar provisions in Part C of PC7. Therefore, this submission point is analysed in the Common Issues section of this report. Other requested amendments were repeated submission points which have been addressed elsewhere in this report.

12.57. We note that Policies 14.4.20B and 14.4.20C duplicate region-wide policies 4.38D and 4.38E. Given that Section 14 of the CLWRP should be read in conjunction with the region-wide policies and rules, we consider that Policies 14.4.20B and 14.4.20C are redundant and recommend they are deleted.

\textbf{Recommendation}


\textbf{Rule 14.5.14}

12.59. Rule 14.5.14 permits the use of land for farming activities on properties 10 ha or less in area. There are fifteen submissions on Rule 14.5.14. Five are supportive\textsuperscript{1499} and seek retention of the Rule, or its intent. Federated Farmers’ support is subject to its requested amendments to Table 14(zc) being granted. Submitters support the Rule for a variety of reasons, including

\textsuperscript{1494} PC7-336.7
\textsuperscript{1495} PC7-357.54
\textsuperscript{1496} PC7-214.136
\textsuperscript{1497} For example; Raumea Farms Ltd (PC7-110.6), TWUG (PC7-68.19), OWL (PC7-381.50), M Hawkins (PC7-97.13)
\textsuperscript{1498} PC7-430.202
\textsuperscript{1499} Ravensdown (PC7-114.42), Timaru DC (292.96), Federated Farmers (PC7-430.243), Egg Producer Federation NZ and Poultry Industry Association NZ (PC7-197.12), Silver Fern Farms Ltd (PC7-468.21)
what it seeks to achieve, that it includes a permitted activity threshold, and that this threshold is the same as in the region-wide framework.

12.60. Ten submissions seeking amendments have been received for Rule 14.5.14. Arowhenua and Te Rūnanga1500 request a condition be added to the Rule so that farming within a RAMA is not a permitted activity.

12.61. Timaru DC1501 also submitted in support of the note preceding Rule 14.5.14. HortNZ1502 also supports this note for the clarification it provides to how the rules are applied.

Recommendation

12.62. That Rule 14.5.14 is retained as notified.

Rule 14.5.15

12.63. Rule 14.5.15 specifies that where any property or farming enterprise includes land within the HNCA, only the part of the property within the HNCA is required to make the nitrogen loss reductions in Table 14(zc). Seventeen submissions have been received on Rule 14.5.15, six support1503 the Rule and eleven seek various amendments.

12.64. Timaru DC supports the intent of the Rule and acknowledge that it contributes to its functions of providing drinking water to the community. Federated Farmers’ support is subject to its requested amendments to Table 14(zc) being granted. Other submitters in support of the Rule request that it is retained as notified.

12.65. Ravensdown1504 and RSIL1505 both request amendments to the Rule which are consequential changes to their respective submissions on Table 14(zc). The submission from M Hawkins1506 regarding fencing and flood events is addressed in the Stock Exclusion section of this Report.

Recommendation

12.66. That Rule 14.5.15 is retained as notified.

Rules 14.5.16, 14.5.16A and 14.5.16B – ‘Equivalent Pathway’

12.67. Rules 14.5.16 to 14.5.16B provide an alternative consenting pathway where for the use of land for a farming activity the Farm Portal is unable to generate a Baseline GMP Loss Rate or Good Management Practice Loss Rate, or the number generated is demonstrated to be erroneous.

12.68. The submissions supporting1507 these rules generally do so as they reflect region-wide provisions, thus maintaining the status quo for the area and providing for a consent pathway...
outside of the Farm Portal. Timaru DC\textsuperscript{1508} acknowledges that they help its interest in providing for community drinking water in the zone.

12.69. Many of the submissions seeking amendments are repeated submission points\textsuperscript{1509} (for example related to GMP, the use of OVERSEER®, ongoing monitoring, and the draft NES for Freshwater) which have been addressed elsewhere in this report.

12.70. There are seventeen submissions on Rule 14.5.16, five of these are in support and one in opposition. Egg Producer Federation NZ and Poultry Industry Association NZ\textsuperscript{1510} opposes the Rule on the grounds that there is no clear standard for assessing nutrient loss for the poultry industry.

12.71. The remaining eleven submissions request changes to the Rule. Agri Magic Ltd\textsuperscript{1511} requests the same changes to Rule 14.5.16 as it does to Rule 8.5.23C. We refer to that section of the report and adopt the analysis and response to these changes. Federated Farmers\textsuperscript{1512} requests that the first matter of discretion is amended to include specific reference to the Baseline GMP Loss Rate to be more consistent with Rules 14.5.19 and 14.5.20.

12.72. Fourteen submissions have been received on Rule 14.5.16A, six are in support of the Rule, or its intent, and the remaining eight seek amendments of the repeated nature discussed above.

12.73. Sixteen submissions have been received on Rule 14.5.16B, six of these are in support of the rule, or its intent, and ten seek changes, including the repeated ones mentioned above. Agri Magic Ltd\textsuperscript{1513} again requests the same changes to this Rule as they do to Rule 8.5.23C. Again, we refer to Part 5, Section 8 of this report for the analysis and response to these requested amendments.

**Recommendation**

12.74. Retain Rules, as per discussion in Waimakariri section.

**Rule 14.5.17**

12.75. Rule 14.5.17 permits the use of land for a farming activity on properties greater than 10 ha, provided the conditions set out in the Rule are met. There are 51 submissions on Rule 14.5.17. Six submissions support\textsuperscript{1514} the Rule. Most of these seek retention of the Rule, including Timaru DC which seeks that the intent of the Rule be retained. M Adams specifically supports condition (4) (based on the region-wide “10% Rule”) and HNZPT specifically supports condition (5) (relating to RAMA). Nine submitters oppose the rule seeking deletion of specific conditions and thirty-six submissions request other amendments.

\textsuperscript{1508} PC7-292.141
\textsuperscript{1509} For example; Dairy Farm Management Services Ltd (PC7-219.26, PC7-219.27, PC7-219.28), Moffit Dairy Ltd (PC7-435.33, PC7-435.45, PC7-435.34, PC7-435.47, PC7-435.35, PC7-435.48), Orton Downs Farm Partnership (PC7-469.33, PC7-469.46, PC7-469.34, PC7-469.47, PC7-469.35, PC7-469.48), Darby Farm Partnership (PC7-464.38, PC7-464.51, PC7-464.39, PC7-464.52, PC7-464.40, PC7-464.53), Arorwenua and Te Rūnanga (PC7-424.24, PC7-424.25, PC7-424.26)
\textsuperscript{1510} PC7-197.13
\textsuperscript{1511} PC7-131.8, PC7-131.9
\textsuperscript{1512} PC7-430.245
\textsuperscript{1513} PC7-131.10, PC7-131.11
\textsuperscript{1514} HNZPT (PC7-331.5), Timaru DC (PC7-292.100), DairyNZ (PC7-357.59), DHL (PC7-415.23), M Adams (PC7-554.7), Silver Fern Farms Ltd (PC7-468.23)
12.76. I & H McMillan\textsuperscript{1515} seek that the Rule clarify which land parcels it applies to. As for Policy 14.4.17, we note that the rule should be read in conjunction with the CLWRP definitions in Section 2 and Section 14, and with the Planning Maps volume of the Plan. We do not believe any amendments to the Rule are necessary in response to this submission.

12.77. Ravensdown\textsuperscript{1516} seeks that condition (3) is amended to refer to the area “authorised to be irrigated” for better consistency with the region wide framework. We agree that this would provide additional clarity and consistency for the condition.

12.78. Federated Farmers\textsuperscript{1517} objects to the use of the MPZ in condition (6). We refer to the previous evaluation of the submitters’ concerns at Policy 14.4.3. Beef + Lamb’s\textsuperscript{1518} submission opposes condition 4, but the reasoning given suggests it objects to condition 6, relating to the MPZ. We invite Beef + Lamb to clarify this at the hearing. OWL\textsuperscript{1519} submits alternative wording for condition (4) with the intent to better reflect the intention of the policy direction. We have considered this alternate wording and believe that it is not merely rewording. We consider that it reduces the scope of the condition from the notified wording. H and J Pearse\textsuperscript{1520} and Beef + Lamb\textsuperscript{1521} request deletion of the MPZ condition in its entirety. We recommend that condition (4) be retained as notified to protect and improve water quality in a vulnerable receiving environment.

12.79. Arowhenua and Te Rūnanga\textsuperscript{1522} requests grammatical changes to condition (5), and that it be extended to include the discharge of contaminants within a RAMA.

12.80. Eight of the submissions\textsuperscript{1523} recorded in opposition to, or oppose in part, condition (7) of Rule 14.5.17 and seek its deletion, or that it not trigger the need for a resource consent. Most of these submissions cite the cost of consents as a main reason for their objection. I Morrison notes the lower threshold than in the region-wide provisions is particularly onerous for dryland farmers with areas in the HRRPZ. Wainono Dairy Limited reasons that the “10% winter grazing rule” (condition (4)) is better suited to properties of scale.

12.81. The majority of the submissions on Rule 14.5.17 request changes to the 20 ha threshold in condition (7). The changes cover the following themes (and various combinations of it):

- Amend the flat rate threshold from 20 ha to a percentage, (suggested alternatives range from 5% to 15%).\textsuperscript{1524}
- Replication of the staged 10% thresholds in condition (4) (and the regionwide rules).\textsuperscript{1525}

\textsuperscript{1515}PC7-568.42
\textsuperscript{1516}PC7-114.47
\textsuperscript{1517}PC7-430.248
\textsuperscript{1518}PC7-214.145
\textsuperscript{1519}PC7-381.153
\textsuperscript{1520}PC7-448.3
\textsuperscript{1521}PC7-214.144
\textsuperscript{1522}PC7-424.27, PC7-424.72
\textsuperscript{1523}For example; I Morrison (PC7-492.1), Federated Farmers (PC7-430.327), Wainono Dairy Ltd (PC7-237.38), Upper Opihi-Opuha Catchment Group (PC7-238.38), NZDFA (PC7-296.11)
\textsuperscript{1524}For example; Blair Farming Company (PC7-155.1), KW & CJ Orange Partnership (PC7-105.3) Knocklyn Holdings Limited (PC7-173.6), Woodbury Deer Industry Environment Group (PC7-21.11)
\textsuperscript{1525}For example; P H Ulrich (PC7-252.9), Orari Station Gorge (PC7-259.6), I Morrison (PC7-492.2)
- Deletion of condition (7) and an amendment to condition (4) to include the winter grazing of deer within the HRRPZ under the 10% threshold rather than a flat rate 20ha threshold\(^{1526}\).
- The threshold (whether ha or percentage) is based on the area of the property within the HRRPZ\(^{1527}\).
- Remove deer from condition (7)\(^{1528}\).
- Unspecified amendments to the Rule to acknowledge that winter feeding practices can differ in the environmental impact they have, and that it allow for determination of actual risk\(^{1529}\). P H Ulrich requests an example of this where an additional 5% of land be permitted for winter grazing where “No Till” technology is used to establish the crops.

12.82. The reasons given for these requests often come down to the cost of being brought into a consenting pathway, and that the current wording of the condition may disproportionately favour small landowners and affect large landowners with small areas in the HRRPZ. G B Patterson and V J Patterson both request that the threshold be simple and consistent. A number of submitters consider that farms with areas in the HRRPZ could be managed by an FMP rather than a consent and audited FEP as a cheaper alternative.

12.83. We note the contention around the threshold set in condition (7), and generally the need for the condition. We consider that the condition is a necessary part of the nutrient management framework to improve water quality and ecology throughout the zone. Regarding where the threshold should be set, while various submitters suggest preferred alternatives they do not include evidence supporting their submissions to show that these options would deliver the same environmental gains as 20 ha. We invite the submitters to elaborate on this in evidence exchange and at the hearing. In the meantime we do not recommend any changes to condition (7).

12.84. Te Moana Dairy Ltd\(^{1530}\) submits that the nutrient management framework should utilise the HNCA, permitting farming at GMP and requiring a consent for more intensive land use. The submitter did not provide drafting for this suggested rule, but we note that this has the potential to be a very permissive framework for farming land use outside of the HNCA. Consequently, we do not recommend this approach being adopted.

**Recommendation**

12.85. That Rule 14.5.17 is amended as per Appendix E.

**Rule 14.5.18**

12.86. Rule 14.5.18 establishes a controlled activity status for farming land use activities which do not comply with the RAMA, MPZ and HRRPZ conditions of Rule 14.5.17. There are twenty-five

---

\(^{1526}\) For example; G B Patterson (PC7-75.5), V J Patterson (PC7-73.4), NZDA (PC7-296.8)

\(^{1527}\) For example; Knocklyn Holdings Ltd (PC7-173.8), Beef + Lamb (PC7-214.143), Orari Gorge Station (PC7-259.8), To Moana Dairy Ltd (PC7-174.3), Woodbury Deer Industry Environment Group (PC7-271.7, PC7-271.8)

\(^{1528}\) For example; Rooney Farms Ltd (PC7-453.8)

\(^{1529}\) For example; Orari Gorge Station (PC7-259.7, PC7-259.9), Woodbury Deer Industry Environment Group (PC7-271.12)

\(^{1530}\) Te Moana Dairy Ltd (PC7-174.3)
submissions on Rule 14.5.18. Six of these support\textsuperscript{1531} the rule, most seek its retention, including Timaru DC which seeks retention of the intent of the Rule. In addition to generally supporting Rule 14.5.18, Arowhenua and Te Rūnanga\textsuperscript{1532} specifically support and seek retention of matter of control (5). Three submissions oppose Rule 14.5.18 and the remaining sixteen submission oppose it in part and seek a variety of changes.

12.87. Of the submissions opposing Rule 14.5.18, Beef + Lamb\textsuperscript{1533} requests deletion of condition (3), and Wainono Dairy Ltd\textsuperscript{1534} and Biggs Agriculture Ltd\textsuperscript{1535} both oppose the rule for its use of the HRRPZ in condition (7) of Rule 14.5.17 and consequently its use in Rule 14.5.18.

12.88. Federated Farmers\textsuperscript{1536} also opposes condition (7) of Rule 14.5.17 (use of the HRRPZ map layer) being included as a trigger for Rule 14.5.18.

12.89. Ravensdown\textsuperscript{1537} seeks that condition (2) is amended to refer to the area “authorised to be irrigated” for better consistency with the region-wide framework. As above, we recommend this change is made.

12.90. Beef + Lamb\textsuperscript{1538} and Federated Farmers\textsuperscript{1539} oppose the inclusion of condition (6) of Rule 14.5.17 as a trigger in Rule 14.5.18. Bonifacio Family Trust\textsuperscript{1540} opposes the requirement for a consent where condition (6) of Rule 14.5.17 (property located within the MPZ) is not met. The Trust reasons that this could be sufficiently managed through an audited FEP, and the cost and time for small operations to get a land use consent could be better used for environmental initiatives. In the current CLWRP framework, farms which are required to prepare an audited FEP are already in a consenting pathway. The alternative is an unaudited Management Plan which is prepared for permitted farming activities on properties greater than 10 ha.

12.91. HNZPT\textsuperscript{1541} is generally supportive of Rule 14.5.18, but requests that “rock art” be removed from the matter of control (5) and inserted as a new matter where effects should be avoided, to align with the FEP targets in Schedule 7. As discussed previously for Policy 14.4.17 we agree that this change is appropriate.

12.92. Arowhenua and Te Rūnanga request that the Rule is amended so that not meeting condition (5) of Rule 14.5.17 (irrigation within in RAMA) classifies the activity as restricted discretionary in Rule 14.5.19, rather than a controlled activity in Rule 14.5.18. As discussed in Section 4 of this report, we agree that this strengthening of activity status is appropriate. We note that condition 7 is not included in the changes shown in the submission and has been summarised as a deletion, we invite the submitter to clarify whether this omission was deliberate.

\textsuperscript{1531} Timaru DC (PC7-292.101), DairyNZ (PC7-357.60), Arowhenua and Te Rūnanga (PC7-424.180, PC7-424.33), DHL (PC7-415.24), Silver Fern Farms Ltd (PC7-468.24)
\textsuperscript{1532} We also note submission point PC7-424.211 in which Arowhenua and Te Rūnanga request amendments to matter of control (5). We have been unable to locate the origin of this submission point in the submitters original submission and invite them to comment further on this matter in the hearing. We note that no further submission points were received on this decision requested.
\textsuperscript{1533} PC7-214.147
\textsuperscript{1534} PC7-237.39
\textsuperscript{1535} PC7-221.13
\textsuperscript{1536} PC7-430.249
\textsuperscript{1537} PC7-114.48
\textsuperscript{1538} PC7-214.146
\textsuperscript{1539} PC7-430.249
\textsuperscript{1540} PC7-336.11
\textsuperscript{1541} PC7-331.6, PC7-331.10
12.93. That Rule 14.5.18 is amended as per Appendix E.

Rule 14.5.19

12.94. Rule 14.5.19 establishes a restricted discretionary activity status for farming land use where one or more of conditions (1) to (4) of Rule 14.5.17 are not met or conditions (2) or (3) of Rule 14.5.18 are not met. Twenty-seven submissions were received on Rule 14.5.19. Seven submissions\textsuperscript{1542} support Rule 14.5.19, most of these support and seek retention of the rule in its entirety, including Timaru DC which seeks the intent of the rule be retained. In addition to generally supporting the Rule Arowhenua and Te Rūnanga specifically supports and seeks retention of matter of discretion (6). A single submission\textsuperscript{1543} opposes the Rule in its entirety, this is from Beef + Lamb and an evaluation of its suggested alternative nutrient management framework is covered earlier in this section. It also requests amendments to the use of the MPZ, which is considered elsewhere in this report. Nineteen submissions oppose Rule 14.5.19 in part and seek various amendments.

12.95. Agri Magic Ltd\textsuperscript{1544} requests the same changes regarding the Farm Portal and term “\textit{equivalent pathway}” to Rule 14.5.19 as they do to Rule 8.5.23C. We refer to that section of the report for the analysis and response to these changes. Ravensdown\textsuperscript{1545} seeks an amendment to matter of discretion (8) which is consequential to its submission to delete Table 14(zc). The response to its suggested framework is in Part 4 Section 8 of this Report.

12.96. DairyNZ\textsuperscript{1546} requests a specific amendment to matter of discretion (8) allowing for the cessation of nitrogen loss reductions when water quality targets have been met. The cessation of targets is discussed below on HNCAs. Forest & Bird\textsuperscript{1547} objects to the use of the word “\textit{efficacy}” and suggests an alternative phrase to include in the Policy. The same submission was made on Rules 8.5.25 and 8.5.26, and we adopt the same evaluation and recommendation for this Rule.

12.97. Arowhenua and Te Rūnanga\textsuperscript{1548} requests that Rule 14.5.19 is amended so that not meeting condition (5) of Rule 14.5.17 (irrigation within in RAMA) classifies the activity as restricted discretionary. We refer to the evaluation of this change at Rule 14.5.18 (above). Finally, Arowhenua and Te Rūnanga request that the phrase “tuhituhi neherā” in matter of discretion (6) be replaced with “rock art”, we recommend this change to Rule 14.5.19.

Recommendation

12.98. That Rule 14.5.19 is amended as per Appendix E.

\textsuperscript{1542} For example; DOC (PC7-160.87), Federated Farmers (PC7-430.250), Arowhenua and Te Rūnanga (PC7-424.181, PC7-424.34), DHL (PC7-415.25), Timaru DC (PC7-292.102)

\textsuperscript{1543} Beef + Lamb (PC7-214.129, PC7-214.149, PC7-148)

\textsuperscript{1544} PC7-131.12, PC7-131.13

\textsuperscript{1545} PC7-114.49

\textsuperscript{1546} PC7-357.61

\textsuperscript{1547} PC7-472.218

\textsuperscript{1548} PC7-424.72, PC7-424.29, PC7-424.206
**Rules 14.5.20, 14.5.21 and 14.5.22**

12.99. Rule 14.5.20 establishes a discretionary activity status and conditions for the use of land for a farming activity as part of a farming enterprise. Rule 14.5.21 establishes a non-complying activity status for farming land use activities where condition (1) of Rule 14.5.18, condition (1) of Rule 14.5.19 or conditions (1) or (3) of Rule 14.5.20 are not met. Rule 14.5.22 mandates prohibited status for farming land use activities where condition (2) of Rule 14.5.19 or condition (2) of Rule 14.5.20 are not met.

12.100. Fifteen submissions were received each on Rules 14.5.20, 14.5.21 and 14.5.22. For each there are six submissions in support, one in opposition, and eight requesting amendments to the Rule.

12.101. The submissions in support generally do so on the basis that the proposed rules are closely aligned with the region-wide rules but adapted to reflect that the NAZ layers have been removed from the OTOP sub-region. Timaru DC acknowledges that the provisions will assist with its interest in providing for community drinking water in the area.

12.102. The submissions in opposition of the Rules are from Beef + Lamb, and the alternative framework it seeks to be inserted into the plan is analysed and responded to earlier in this section.

12.103. The requests for amendments are repeated submission points which primarily relate to the use of GMP and requests for ongoing monitoring in the zone. Arowhenua and Te Rūnanga also request that the rules be amended to align with or "exceed" those proposed in the draft NES for Freshwater 2019. These changes do not relate specifically to the rules and are addressed elsewhere in the Part 1 of this report.

**Recommendation**

12.104. That Rules 14.5.20, 14.5.21 and 14.5.22 are retained as notified.

**Rules 14.5.24 and 14.5.24A – Incidental nutrient discharges**

12.105. Rule 14.5.24 permits the discharge of nutrients where a contaminant may enter water that would otherwise contravene s15(1) of the RMA, provided the land use activity associated with the discharge is authorised under the rules in Section 14 of the LWRP.

---

1549 For example; Ravensdown (PC7-114.50, PC7-114.51, PC7-114.52), Timaru DC (PC7-292.103, PC7-292.104, PC7-292.105), DairyNZ (PC7-357.62, PC7-357.63, PC7-357.64), Federated Farmers (PC7-430.251, PC7-430.252, PC7-430.253), DHL (PC7-415.26, PC7-415.27, PC7-415.28), Silver Fern Farms Ltd (PC7-468.26, PC7-468.27, PC7-468.28)

1550 Beef + Lamb (PC7-214.130, PC7-214.131, PC7-214.132)

1551 For example; Dairy Farm Management Services Ltd (PC7-219.32, PC7-219.33, PC7-219.34), Moffit Dairy Ltd (PC7-435.39, PC7-435.40, PC7-435.41), Orton Downs Farm Partnership (PC7-469.39, PC7-469.40, PC7-469.41), Darby Farm Partnership (PC7-464.44, PC7-464.45, PC7-464.46)

1552 For example; Moffit Dairy Ltd (PC7-435.52, PC7-435.53, PC7-435.54), Orton Downs Farm Partnership (PC7-469.52, PC7-469.53, PC7-469.54), Darby Farm Partnership (PC7-464.57, PC7-464.58, PC7-464.59)

1553 PC7-424.30, PC7-424.31, PC7-424.32
12.106. Six submissions\textsuperscript{1554} have been received on Rule 14.5.24, five of these are in support, seeking that the rule or intent of the rule be retained. Arowhenua and Te Rūnanga\textsuperscript{1555} requests insertion of a condition that the activity does not occur within the RAMA. We consider that Rules 14.5.14 to 14.5.22 are sufficient to manage the risks to rock art from incidental nutrient discharges.

12.107. Egg Producer Federation NZ and Poultry Industry Association NZ supports the Rule as it provides a linkage between permitted and consented poultry farms and incidental nutrient discharge. Ballance also supports the Rule for the linkages it shows between land use activities and the associated discharges. Ravensdown supports Rule 14.5.24 as it is a consistent approach to that in the region-wide rules. Timaru DC acknowledges the rule will assist in its functions of providing drinking water in the area.

12.108. Five submissions have been received on Rule 14.5.24A, four of these are in support\textsuperscript{1556} and seek retention of the rule or intent of the rule. Ravensdown, Timaru DC and Ballance all support the Rule for the same reasons as they support Rule 14.5.24 (see above). Federated Farmers does not give reasoning for its support.

12.109. Forest & Bird\textsuperscript{1557} requests that the Rule be strengthened to a non-complying activity, which we note is already the status of the Rule and wonder if this submission point was intended to be lodged on Rule 14.5.24. We invite the submitter to clarify the intent of this submission point through the hearing process. Regardless, for the reasons discussed in Part 5, Section 8 (Evaluation of Rules 8.5.31 & 8.5.32) of this report we consider that the activity statuses of these rules are appropriate and do not recommend any activity status changes to these rules.

Stock Exclusion

Introduction and Provisions

12.110. This section discusses the provisions in Part B of PC7 that introduce additional requirements for the exclusion of stock from water bodies for the OTOP sub-region. This includes Policies 14.4.15 and 14.4.16, and Rules 14.5.25 and 14.5.25A. The two proposed policies read:

Livestock Exclusion from Waterbodies

Note: Policies 14.4.15 and 14.4.16 apply in addition to regional policies 4.31 and 4.32 (Livestock Exclusion from Water Bodies)

14.4.15 Within the Orari-Temuka-Opihi-Pareora sub-region, the region-wide provisions on livestock exclusion also apply to:

a. permanently or intermittently flowing springs (waipuna); and

b. open drains and other artificial watercourses with surface water in them that discharge into a lake, river or wetland.

\textsuperscript{1554} For example; Ravensdown (PC7-114.55), Timaru DC (PC7-292.109), Ballance (PC7-441.37), Federated Farmers (PC7-430.256), Egg Producer Federation NZ and Poultry Industry Association NZ (PC7-197.15)

\textsuperscript{1555} PC7-424.110

\textsuperscript{1556} Ravensdown (PC7-114.56), Timaru DC (PC7-292.110), Ballance (PC7-441.38), Federated Farmers (PC7-430.257)

\textsuperscript{1557} PC7-472.192
14.4.16 Protect papatipu rūnanga values associated with springs (waipuna), freshwater mātaitai, rivers and lakes and reduce the loss of microbial contaminants, phosphorus and sediment to surface water by:

a. implementing, within the Orari-Temuka-Opihi-Pareora sub-region, the region-wide provisions for stock exclusion; and

b. excluding, within the Mātaitai Protection Zone, all farmed cattle, deer and pigs from the bed (including the banks) of lakes and rivers, any permanently or intermittently flowing spring, and any open drain or artificial watercourse that contains water and that discharges into a lake, river or wetland.

12.111. Policy 14.4.15 is implemented through Rule 14.5.25, which extends the application of regional stock exclusion rules to also apply to springs, and artificial watercourses that discharge into a lake, river or wetland waterbody. Rule 14.5.25 does not apply to sub-surface drains, or artificial watercourses that do not have surface water in them.

12.112. The region-wide stock exclusion rules relate to the use and disturbance of the bed (including the banks) of a lake, river or a wetland by stock and any associated discharge to water, and:

a. only permit this use and disturbance where it is for stock crossing, and in certain limited circumstances (Rule 5.68);

b. where the use and disturbance relates to intensively farmed stock, and to the bed of a lake or wetland, or a river that meets specified parameters, it is a non-complying activity (Rule 5.70);

c. the use and disturbance is prohibited where it relates to farmed cattle, deer or pigs, and to the bed of a lake or wetland, in specified areas, such as salmon spawning sites, and Community Drinking-water Protection Zones (Rule 5.71).

12.113. Policy 14.4.16 is implemented through Rule 14.5.25A, which extends the application of region-wide Rule 5.71 to the MPZ. This, in combination with Rule 14.5.15, makes the use and disturbance of the bed (including the banks) of all the various watercourses by any farmed cattle, farmed deer or farmed pigs, and any associated discharge to water, a prohibited activity within this area.

12.114. The practical effect of these rules is that the identified watercourses will need to be fenced off (permanent or temporarily), or the specified stock otherwise excluded from them.

12.115. The provisions relating to livestock exclusion are part of a wider package of provisions included in Part B of PC7, which are intended to manage activities to meet freshwater outcomes, water quality limits and targets across the sub-region and to better recognise cultural values and protect culturally significant sites. They are expected to assist with further reducing the risk of nutrients, pathogens and sediment entering waterways, improving aquatic ecosystem health and cultural values in the short term and achieving freshwater outcomes in the long term.

12.116. For completeness, it is noted that Part A of PC7 also includes proposed amendments to region-wide Rule 5.71 that also increase the areas within which the prohibition applies. This section of the Section 42A Report does not consider or address any submissions made on Rule 5.71 more broadly.

---

1558 Rules 5.68A, 5.68B, 5.68, 5.69, 5.70 and 5.71

1559 Section 32 Evaluation Report for Plan Change 7 (Omnibus, Orari-Temuka-Opihi-Pareora and Waimakariri) to the Canterbury Land and Water Regional Plan and Plan Change 2 to the Waimakariri River Regional Plan, page 192 and 196.
12.117. The submissions relating to stock provisions have been grouped into and considered according to the following topics:

- Supporting submissions;
- Submissions that particularly relate to the intermittently flowing springs and artificial watercourse;
- Submissions seeking that the provisions are varied depending on stocking rates;
- Submissions relating to stock exclusion within the MPZ;
- Submissions that seek further extension of the provisions; and
- Submissions that raise any other matters.

**Supporting Submissions**

12.118. There is a range of submitters who are supportive of the provisions as notified. This includes fifteen submitters\(^\text{1560}\) who support Policy 14.4.15, eight submitters\(^\text{1561}\) who support Policy 14.4.16, eleven submitters\(^\text{1562}\) who support Rule 14.5.25 and eight submitters\(^\text{1563}\) who support Rule 14.5.25A. In addition, R Devlin\(^\text{1564}\) states broad support for stock exclusion provisions and CACB\(^\text{1565}\) notes support for the proposed rules to prohibit stock from waterways upstream of Waihi and Otaio Gorges to assist with providing safe swimming at popular campsites in these areas.

12.119. The reasons given by various submitters for supporting one or more of the provisions include:

- The implementation of provisions should significantly help improve water quality\(^\text{1566}\) and mahinga kai outcomes for the catchment.\(^\text{1567}\)
- The provisions will enforce requirements on a neighbour to fence off cattle to water races and install water offtakes to stock tanks, as a proper means of providing drinking water to their stock, thus removing the adverse effects on water quality downstream.\(^\text{1568}\)
- They will help meet water quality outcomes as contaminants arising from stock access to waterways and riparian margins have adverse effects on freshwater habitats and ecosystem health.\(^\text{1569}\)
- The provisions reflect responsible stock management, while also ensuring that stock can access open drains and artificial water courses that do not have water in them.\(^\text{1570}\)
- The provisions will assist with the protection of Papatipu Rūnanga values.\(^\text{1571}\)
- They reflect best practice stock management in and around waterways.\(^\text{1572}\)

\(^\text{1560}\)For example; Ashwick Flat Dairy Farms (PC7-283.43), DOC (PC7-160.82), Federated Farmers (PC7-430.194)
\(^\text{1561}\)For example; B Caird (PC7-175.48), Fish & Game (PC7-351.40), Synlait (PC7-188.34)
\(^\text{1562}\)For example; Cascade Creek (PC7-294.47), Fish & Game (PC7-351.70) and Upper Opihi-Opuha Catchment Group (PC7-238.39)
\(^\text{1563}\)For example; DOC (PC7-160.85), H Jackson (PC7-169.46), Ravensdown (PC7-114.58)
\(^\text{1564}\)PC7-56.12
\(^\text{1565}\)PC7-138.11
\(^\text{1566}\)Springfield Partnership Ltd (PC7-306.7)
\(^\text{1567}\)Bonifacio Family Trust (PC7-336.5)
\(^\text{1568}\)A Buxton (PC7-511.1)
\(^\text{1569}\)Fish & Game (PC7-351.39, PC7-351.40, PC7-351.70, PC7-351.71)
\(^\text{1570}\)Federated Farmers (PC7-430.194, PC7-430.195, PC7-430.258, Upper Opihi-Opuha Catchment Group (PC7-238.36, PC7-238.39), Wainoni Dairy Ltd (PC7-237.36, PC7-237.40)
\(^\text{1571}\)Federated Farmers (PC7-430.194, PC7-430.195)
\(^\text{1572}\)Ashwick Flat Dairy Farms (PC7-283.43, PC7-283.46, PC7-283.47), Cascade Creek Ltd (PC7-294.45, PC7-294.47, PC7-294.48)
12.120. Ravensdown\textsuperscript{1573} also support the notified provisions, while recognising the implementation challenge they pose for farmers.

**“Intermittently” flowing springs and artificial water courses**

12.121. Several submitters\textsuperscript{1574} raise concerns about the clarity of Policies 14.4.15 and 14.4.16, particularly in relation to what “intermittently flowing springs” and “artificial watercourses with surface water in them” would include. For example, Mill Farm\textsuperscript{1575} seeks clarification regarding the application of Policy 14.4.15 to artificial watercourses, citing a drain that runs through its property only 2-3 times per year after larger rainfall events and dissects many of its paddocks, discharging into the Opihi River. It states that fencing off this drain would be “impractical for the miniscule gains received”.

12.122. Three submitters\textsuperscript{1576} note that their experience is that some springs result from flooding/significant rainfall events. They consider that these transient or ephemeral springs should not be required to comply with the livestock exclusion provisions. The submitters note that while the springs are running, they generally exclude stock from these areas which mitigates additional sediment transfer. They state that these “lower magnitude springs” would be difficult to identify and fence off. Similar concerns are raised regarding artificial drains with surface water in them. As such, they seek that ephemeral and transient/lower magnitude springs and drains that have grassed or vegetated beds are excluded from Policy 14.4.15.

12.123. Great Southern Deer Farms\textsuperscript{1577} opposes the blanket approach to stock exclusion from the extended range of water bodies, stating that less intensively farmed areas such as hill/tussock country can include intermittently flowing springs with stock access that does not cause degradation to the water course or the quality of water within it. It notes that run-off can occur from significant rainfall events, from areas like this which are not farmed, which is naturally occurring and not resulting from stock access. It notes that these springs and water courses would be difficult to identify and fence off. The submitter considers that clarification is required around what this would entail as fencing off remote, steep hill country, lower magnitude springs and waterways would incur, in some cases, significant loss of grazing land, prohibitive costs and/or would not achieve good water quality results. The submitter seeks that steep inclined tussock/hill country with a low stocking rate is excluded from Policy 14.4.15 and a new definition is inserted for ‘Intensively Farmed Stock’.

12.124. Brook & Rupert Partnership\textsuperscript{1578} opposes Policy 14.4.15\textsuperscript{1579} in terms of the inclusion of intermittently flowing waterbodies including open drains and other artificial watercourses with surface water in them. It considers that intermittent flowing is too broad a term, and in the case of heavy and prolonged rain which results in a thin layer of moving surface water, \textsuperscript{1573}PC7-114.32, PC7-114.33, PC7-114.57, PC7-114.58
\textsuperscript{1574}For example; South Hilton Ltd (PC7-146.3), Knocklyn Holdings Ltd (PC7-173.1, PC7-173.2, PC7-173.3), Glenfield Farm (PC7-236.44), Orari Gorge Station (PC7-259.1, PC7-259.2, PC7-259.3), Woodbury Deer Industry Environment Group (PC7-271.1, PC7-271.2, PC7-271.3).
\textsuperscript{1575}PC7-471.1
\textsuperscript{1576}Knocklyn Holdings Ltd (PC7-173.1, PC7-173.2, PC7-173.3), Orari Gorge Station (PC7-259.1, PC7-259.2, PC7-259.3), Woodbury Deer Industry Environment Group (PC7-271.1, PC7-271.2, PC7-271.3).
\textsuperscript{1577}PC7-103.1, PC7-426.1, PC7-426.2, PC7-426.3, PC7-426.4
\textsuperscript{1578}PC7-150.3
\textsuperscript{1579}It is noted that this submission point is made in relation to both Policy 14.4.15, as well as to a similar proposed Policy (8.4.30) within the Waimakariri sub-region. It has therefore been considered in both the Waimakariri and OTOP sections of this Section 42A Report.
consider it would be impossible to define where the waterbody starts or finishes and to exclude stock in this situation. It also considers that in hill or downlands, excluding stock from a defined ephemeral waterway is impractical and unlikely to achieve a positive effect in water quality, on the basis that whether the gullies are fenced or not will not change the amount of sediment first collected from a hillside that then channels into gully areas. They consider that good mitigation practises such as sediment traps and constructed wetlands/filtration zones at the bottom of the gully would be a better way to prevent sediment from entering permanent waterways.

12.125. Beef + Lamb\textsuperscript{1580} and NZDFA\textsuperscript{1581} consider that it is more appropriate to manage intermittently flowing springs as critical source areas rather than requiring stock to be excluded, similar to ephemeral waterways. They note that downlands or hill country farms may have many springs which discharge into lakes, rivers or wetlands and that springs may also be intermittent and transient, as new springs may appear over time while others dry up. They consider that physically excluding beef cattle and deer may not be practical, nor cost-effective to achieve a good environmental outcome. They state that livestock exclusion from springs on non-intensive farms may not always be needed to achieve good water quality. NZDFA also caution that total exclusion of deer from waterbodies (by fencing off the waterbodies) can in turn influence deer behaviour that creates greater risk of contamination of waterbodies.

12.126. A number of the above submitters\textsuperscript{1582} explicitly seek recognition that livestock exclusion from various water courses may not be needed to achieve good water quality.

12.127. To address the concerns identified above, several of these submitters\textsuperscript{1583} support the use of a Management Plan approach to identify specific areas of risk and the mitigation options to address the risks, rather than a blanket requirement to exclude stock, regardless of cost or likely environmental impact. Several submitters further consider that such a Management Plan could be made a requirement for a permitted activity (with the farmer to provide the Management Plan on request) or as a controlled activity consent, instead of a discretionary activity under Rule 5.69. Some also note that this matter could be included within a FEP, where a consent is required for other reasons. The Management Plan would be used to test whether mitigation measures, (such as stocking rate, livestock species/classes, time of year and duration that stock are in the same paddock as the spring, downstream remediation, placement of shade, feed and water supplies) would be effective in maintaining water quality.

12.128. Brook & Rupert Partnership\textsuperscript{1584} also seeks that intermittently flowing is defined as ephemeral waterways or a specific body of water in a location flowing for a minimum length of time e.g. a stream in a gully that flows for 24 hours.

12.129. Related to these submissions, Synlait\textsuperscript{1585} supports the fencing of waterbodies, and the extension of the OTOP rules to also capture springs and artificial water courses with water in them that discharge into natural water bodies. However, it considers that it is important that

\textsuperscript{1580} PC7-214.115, PC7-214.116, PC7-214.117, PC7-214.118, PC7-214.150, PC7-214.51
\textsuperscript{1581} PC7-296.5, PC7-296.6
\textsuperscript{1582} For example; Great Southern Deer Farms Ltd (PC7-426.3), Brook & Rupert Partnership (PC7-150.4), Knocklyn Holdings Ltd (PC7-173.4), Orari Gorge Station (PC7-259.3), Woodbury Deer Industry Environment Group (PC7-271.3), Beef + Lamb (PC7-214.117).
\textsuperscript{1583} For example; KW & CJ Orange Partnership (PC7-105.1), Brook & Rupert Partnership (PC7-150.4), Beef + Lamb (PC7-214.115, PC7-214.116, PC7-214.117, PC7-214.118, PC7-214.150, PC7-214.51) and NZ Deer (PC7-296.5, PC7-296.6)
\textsuperscript{1584} PC7-150.2
\textsuperscript{1585} PC7-188.16
the policies and rules are clear that permanent stock exclusion (e.g. permanent fencing) is not required from ephemeral water bodies, and therefore seeks that the rules allow for a non-permanent fence in situations where the water body is ephemeral.

12.130. We note that the rules do not require permanent fencing, albeit permanent fencing is the most likely method used to comply with the rules. In addition, Rule 14.5.25 requires exclusion from the specified water bodies, but specifically excludes “any sub-surface drain or artificial watercourse that does not have surface water in it”. This means that stock are not required to be excluded from artificial watercourses when they do not have water in them, and therefore while they could be permanently fenced, stock could be excluded by temporary fencing or otherwise excluded from areas when water is flowing.

12.131. The common theme through the submission points is the kind of water bodies to which additional stock exclusion requirements should apply. This is followed by a secondary theme of whether a FEP is a better approach.

12.132. There is understandable confusion in relation to springs, which can vary in size from a small hillside seep, through to a substantial upwelling at the head of a stream. In addition, many of the smaller springs respond to rain events or localised changes in the water table. We note that there are differences in the thresholds between the artificial watercourses, from which stock must be excluded ‘when water is present’, compared to the more general exclusion from intermittent springs. We are of the opinion that consistency between these two phrases, and reliance on stock exclusion when water is present, will likely avoid uncertainty. Under this approach, there is some certainty for all parties.

12.133. In relation to the applicability of the provisions to springs, Part 2 Section 4 provides a recommendation to insert a definition that describes springs that have a connection to a surface waterbody. This definition would ensure that the stock exclusion provisions do not apply to seepages or springs where there is no downstream connection. The insertion of this definition would address the submissions from South Hilton Ltd, Knocklyn Holdings Ltd, Orari Gorge Station and Woodbury Deer Industry Environment Group.

12.134. Overall, we recommend changes to enhance management of springs in FEPs along with minor changes to the Policy and Rule framework so that stock is required to be excluded from springs when they contain water, and greater encouragement of protection of seeps and springs that are not flowing is achieved through FEPs.

Stocking rates

12.135. A number of submitters also raise concerns that the approach takes a blanket approach to all stock, regardless of intensity.

12.136. Great Southern Deer Farms Ltd\(^\text{1586}\) opposes Policy 14.4.15 and seeks that lightly stocked areas, for example 5-6 stock units per ha, are exempt from requirements to fence waterways in hill country/tussock blocks from livestock. In the submitters’ view, lower density creates no contamination to fast running, gravel-based streams, and the costs of fencing place an unfair burden on any hill country deer or beef farmer. It considers stream testing could be required under FEPs.

\(^{1586}\) PC7-103.2
12.137. KW & CJ Orange Partnership\textsuperscript{1587} similarly seeks that the approach taken to livestock exclusion differentiates between low intensity and high intensity farms, stating that the effect of Policy 14.4.15 will be to reduce low intensity deer and cattle farming in the high country within the OTOP Zone. It considers that stock exclusion is warranted for high intensity farms (e.g. 15-20 stock units/ha) but not for lower intensity (8 stock units/ha or less), stating that this would add significant costs and make these lower intensity properties unviable to farm. The submitter also notes that MfE’s Draft Stock Exclusion Section 360 Regulations uses stocking rates to differentiate, which they consider is sensible.

12.138. Ardleigh Deer Farm\textsuperscript{1588} states that total stock exclusion from waterways “is not acceptable”, due to different stocking rates for different land. It states that having to exclude extensively farmed areas from springs would render these areas unusable. The submitter seeks that a stock unit ratio is applied, limiting stock to 10 units/ha in hill country that is amongst springs.

12.139. Monument Road Farm\textsuperscript{1589} oppose Policy 14.4.15 and Rules 14.5.25 and 14.5.25A, stating that it may not be appropriate to take the same approach to all areas. They seek a “reduction in the stock exclusion distances”. Given that the rules do not specify a distance for stock exclusion, it is not clear what this submitter is referring to.

12.140. Appropriate thresholds and definition of stock units in relation to stock exclusion from water bodies has been raised in the context of regional planning numerous times across New Zealand. We do note the central government proposals for stock exclusion regulations include a stocking rate element. However, the region-wide structure of the CLWRP is not based around such a mechanism. We consider that a stocking rate mechanism is better introduced as part of a region-wide approach, rather than specifically for the OTOP sub-region, or through a national framework, which would likely supersedes CLWRP requirements.

**Additional requirements**

12.141. A Brown\textsuperscript{1590} seeks that all stock be excluded at all times from any part of the Orari River. Forest & Bird\textsuperscript{1591} seeks that the livestock exclusions apply to all farmed animals.

12.142. We consider that these submission points would effectively require the exclusion of all stock, including animals that do not normally associate with water, such as sheep, being excluded. The submission points would also appear to suggest the region-wide stock crossing rules should not apply. It is our understanding that animals such as sheep and goats do not normally associate with water and fencing to exclude these animals is both more expensive and less likely to be necessary. We also understand that management of stock camping areas and riparian management, likely under a FEP, is more effective than a simple stock exclusion rule applying to these animal types.

---

\textsuperscript{1587} PC7-105.1
\textsuperscript{1588} PC7-242.3 - The submitter does not state the specific provisions that the submission relates to, but it has been assumed that the comments relate to the provisions addressed in this section of the Section 42A Report.
\textsuperscript{1589} PC7-370.43, PC7-370.49, PC7-370.50
\textsuperscript{1590} PC7-109.9
\textsuperscript{1591} PC7-472.160, PC7-472.161
Mātaitai Protection Zone

12.143. As set out earlier, proposed Policy 14.4.16 directs the protection of pāptipu rūnanga values in relation to water courses and water quality by extending the prohibited activity rule to apply to the MPZ.

12.144. Tregellen Farm\textsuperscript{1592} seeks that clause (b) of Policy 14.4.16 is deleted, stating that it is unclear what it is trying to achieve and what the justification for it is. The submitter further states that it is unclear what the MPZ is and how the Policy will affect it.

12.145. H Pearse\textsuperscript{1593} opposes the livestock exclusion provisions, stating that the extension of the rules to the MPZ is unnecessary. He considers that using a 2 km direct line does not work as a lot do not flow into the Mātaitai Reserve. He states that at best the exclusion for stock should only apply when in flood.

12.146. TWUG\textsuperscript{1594} and M Hawkins\textsuperscript{1595} oppose Policy 14.4.16 stating that “They don’t need “special” values, we all share the same values” and seeking the clause is removed. It is not clear whether the submitters are referring to a particular clause within the Policy or if they seek deletion of the Policy in full.

12.147. Bonifacio Family Trust\textsuperscript{1596} seeks that Policy 14.4.16 is deleted, as in its view, Policy 14.4.15 should be “sufficient to cover the area put forward in the proposed Mataitai Protection Zone”. In its view the Plan should be aimed at achieving the same results as required in the proposed MPZ – better water quality and mahinga kai and therefore they consider the additional Policy to be erroneous.

12.148. Federated Farmers\textsuperscript{1597} seeks that Rule 14.5.25A is deleted, until there is further discussion and education about the MPZ, including what it is, its legal status and its purpose. It considers that it is crucial that other water users and the wider community understands the nature and supports the purpose of the zone.

12.149. While these submission points relate primarily to stock exclusion, it is clear that the majority of points are more generally oriented to the MPZ. The MPZ has been considered and recommendations made elsewhere in this report, and are not reanalysed here. The key remaining question is whether stock exclusion is required in the MPZ. We understand that this matter was addressed in the Section 32 Report, where the need to protect the cultural values of the waterbodies and the MPZ was a persuasive factor\textsuperscript{1598}. In our opinion, the submissions do not substantively address those issues, and the stock exclusion provisions are recommended to continue.

Other Matters

12.150. Monument Road Farm\textsuperscript{1599} opposes Policy 14.4.6, seeking more clarity. It is not stated in the submission what direction in the policy requires clarity, or what, if any changes are sought.

\textsuperscript{1592} PC7-361.49
\textsuperscript{1593} PC7-445.50, PC7-445.51, PC7-445.52, PC7-445.53, PC7-445.58, PC7-445.59
\textsuperscript{1594} PC7-68.33
\textsuperscript{1595} PC7-97.27
\textsuperscript{1596} PC7-336.6
\textsuperscript{1597} PC7-430.259
\textsuperscript{1598} Page 213 of the Section 32 Report for PC7 to the CLWRP.
\textsuperscript{1599} PC7-370.44
12.151. Three submitters\(^{1600}\) consider that the rules prohibiting livestock from various water courses are ineffective and confusing, without further clarification and reinforcement of existing exemptions\(^{1601}\). They seek that the Rule\(^ {1602}\) is redrafted to exclude livestock from a “lake or river and from any intermittently or permanently flowing open drain or man-made waterway which flows into, or has the potential to flow into, the bed of any natural lake, river or stream.” They consider that this would exempt any enclosed stag or pig wallows which are provided for animal welfare purposes. They also consider that there should also be a permanent exclusion for horses being ridden through or across a riverbed for legitimate farming and lawful purposes and an exemption for all farmed grazing animals when being mustered or moved when there are no alternatives to river crossings. It is our understanding that Rule 5.68 already provides for these matters, except in the locations specified in Rule 5.71. Given the region-wide rules have been operating for some time, we consider any interpretation issues have now been resolved and do not recommend the rule be amended as requested by the submitter.

12.152. TWUG\(^ {1603}\) and M Hawkins\(^ {1604}\) oppose Policy 14.4.15 and Rules 14.5.25 and 14.5.25A as being not practically possible on small streams or rivers, as fencing gets washed away by flooding. They seek that Environment Canterbury pay for all fencing and reinstatement after flood events. In our view it is not the responsibility of the Council to reinstate fencing.

12.153. Overall, we do have some concerns about the wording of these policies, as they largely repeat region-wide policies or the subsequent rules. In line with discussion in the Common Issues section, we recommend that Policy 14.4.16 be amended to be simpler and more directive, rather than focussing on restating the provisions of Rule 14.5.25, and that Policy 14.4.15 be deleted, with additional requirements for stock exclusion being included within Policy 14.4.16.

**High Nitrogen Concentration Areas\(^ {1605}\)**

*Introduction and Provisions*

12.154. This section of the Section 42A Report addresses submissions relating to the delineation and definitions of the HNCAs, Policies 14.4.18, 14.4.19, 14.4.28, 14.4.41, Rules 14.5.23, 14.5.23A, Table 14(zc) and the portion of the Section 14 introduction about HNCAs. These provisions apply within the three proposed HNCAs.

12.155. The HNCA provisions are a more stringent framework than the region-wide or sub-regional provisions. They were written to address nitrate nitrogen exceedances of half the DWSNZ MAV in groundwater in Rangitata Orton, Levels Plain and Fairlie Basin, and for Rangitata Orton and Levels Plain exceedances of the NPSFM National Bottom Line values for nitrate toxicity in surface waterbodies.

12.156. A key feature of the framework for reducing nutrient leaching from farming activities within the HNCAs is requiring percentage reductions of nitrogen loss rates beyond Baseline GMP loss

\(^{1600}\) Pareora Catchment Society (PC7-108.11, PC7-108.15), B & S Wright (PC7-208.3, PC7-208.4), Waimate DC (PC7-279.9, PC7-279.10, PC7-279.11, PC7-279.12).

\(^{1601}\) The submitters do not state the specific provisions that the submission relates to, but it has been assumed that the comments relate to the provisions addressed in this section of the Section 42A Report.

\(^{1602}\) Although not specified, it is assumed that this relates to proposed Rules 14.5.25 and 14.5.25A

\(^{1603}\) PC7-68.32, PC7-68.36, PC7-68.37

\(^{1604}\) PC7-97.30, PC7-97.31

\(^{1605}\) The planning authors of this section are Lochiel McKellar and Matthew McCallum-Clark.
rates or consented nitrogen loss rates. The provisions require the first set of reductions to be achieved by 2030, and in Rangitata Orton and Levels Plains a second step of reductions by 2035. Policies also limit consent durations to ten years, so future resource consent applications can be informed by any potential changes to the percentage reductions resulting from the plan review cycle and changes in the environment.

12.157. In addition to the stepped reductions, there are policies which will require industrial and trade discharges to decrease by 30% beyond current consented rates by 2035 in the Rangitata Orton and Levels Plains HNCA. There is no equivalent industrial trade waste policy for the Fairlie Basin HNCA as the area does not have any large industry discharges, and overall has less need to reduce nitrogen discharges than the other HNCA.

**Topic-wide themes and submissions**

12.158. Numerous submissions\(^{1606}\) request that the requirement for further reductions be removed when water quality outcomes have been met in the HNCAs. RSIL reason that this would be consistent with other parts of the CLWRP (introduced by Plan Change 2 to the CLWRP) and allow for schemes to investigate alternative methods for improving water quality. We do not recommend these changes be included in PC7 as they might not maintain newly improved water quality if nitrogen discharges can increase once the targets have been met. This would be inconsistent with the NPSFM, Objective A2, to maintain or improve water quality. An option to maintain the improved water quality would be to require anyone who has made reductions to maintain their reduced levels of nitrogen discharge when targets have been met. This would place an unfair burden on the early actors and potentially exempt some operations from making any reductions if they delay long enough. We consider that future plans can address this issue in a timely way.

12.159. Rangitata Dairies\(^{1607}\) requests the effects of farming activities within HNCAs and associated mitigation exclude the effects of the Fonterra wastewater discharge consent area (located in the Rangitata Orton HNCA) as a matter of equity. McFarlane Agriculture & McFlynn Potatoes\(^{1608}\) also request that the Fonterra discharge consent be specifically addressed rather than the whole catchment having to offset the effects of a single consent. We note that the effects of this consent were acknowledged and considered by the technical reports\(^{1609}\) which concluded that it was not the only cause of elevated nitrate concentrations in the area. Fonterra and any other industrial or trade waste disposal in the Rangitata Orton HNCA are subject to the reductions in Policy 14.4.28.

12.160. Wainono Dairy\(^{1610}\) seeks an extensive groundwater quality monitoring program be in place by Environment Canterbury to track improvements in HNCAs. Environment Canterbury’s duty to gather information, monitor and keep records of plan efficiency and effectiveness is discussed in greater detail in Part 5 of this report. In summary, section 35 of the RMA requires local authorities to gather information and monitor the effectiveness and efficiency of policies, methods and rules in plans. Given this, we consider the monitoring sought by Wainono Dairy is already provided for by section 35 of the RMA and we do not consider additional provisions are necessary in Part B of PC7.

\(^{1606}\) PC7-235.33, PC7-235.34, PC7-357.49, PC7-357.76, PC7-278.70

\(^{1607}\) PC7-316.9

\(^{1608}\) PC7-278.68


\(^{1610}\) PC7-237.16
**Fairlie Basin HNCA**

12.161. We note that submissions lodged on both the definition and map layer relate to the spatial extent of the area so these are evaluated together in this section.

12.162. Twelve submissions\(^\text{1611}\) seek deletion of the Fairlie Basin HNCA stating that there is no scientific basis for what is delineated.

12.163. Nine submissions request changes to the mapped Fairlie Basin HNCA. Three\(^\text{1612}\) are seeking the map extent be reduced and focused on more targeted areas, the submissions do not provide a mapped alternative and provide the same reasoning as those requesting the area be deleted. Six submissions\(^\text{1613}\) request a distinction within the Fairlie Basin HNCA between the Sherwood and Ashwick Flat areas and that appropriate reductions be determined and set for each area. They reason that the area drawn is too simplistic and does not recognise the different topography and natural features of the land within the HNCA. Similarly, unspecific requests\(^\text{1614}\) were made for the mapped area to consider the different soil types, topography, water catchments and stocking densities. M Bell\(^\text{1615}\) requested the area be redrawn to be limited to where nitrogen is leaching from rather than broadly applied.

12.164. The delineation of the HNCAs is described in the technical reports supporting PC7\(^\text{1616}\). Factors include measured nitrate concentrations, modelled nitrate leaching concentrations and the predominance of land surface recharge. Given the particular need in the Fairlie Basin area to reduce nitrate in waterbodies it would be inappropriate to delete the mapped HCNA and not require the associated percentage reductions beyond GMP. In the absence of some other viable method, this would also not give effect to the NPSFM, Policy A2 nor give proper regard to Te Mana o te Wai, Policy AA1.

**Recommendation**

12.165. That the Fairlie Basin HNCA is retained as notified.

**Levels Plain HNCA**

12.166. We note that submissions lodged on both the definition and map layer relate to the spatial extent of the area so these are evaluated together in this section.

12.167. Ten submissions\(^\text{1617}\) seek deletion of the Levels Plain HNCA stating that there is no scientific basis for what is delineated. In addition, Mill Farm’s submission\(^\text{1618}\) opposes the layer as the extent includes the Pleasant Point oxidation ponds.

---

\(^{1611}\) For example; Barwoods Ltd (PC7-298.11), Glenfield Farm (PC7-236.18), TWUG (PC7-68.14), M Hawkins (PC7-97.8), T Henderson (PC7-115.12)

\(^{1612}\) Ashwick Flat Dairy Farms (PC7-283.14), Cascade Creek Ltd (PC7-294.15), B Caird (PC7-175.14)

\(^{1613}\) Biggs Agriculture Ltd (PC7-221.7), Cascade Irrigation Race Ltd (PC7-159.5), S & J McTamey (PC7-440.4), Wainono Dairy Ltd (PC7-237.14), Upper Opihi-Opuha Catchment Group (PC7-238.14), Federated Farmers (PC7-430.197), M Adams (PC7-554.1)

\(^{1614}\) Wai Eyre Farm Partnership (PC7-74.4), Biggs Agriculture Ltd (PC7-221.7)

\(^{1615}\) PC7-90.2


\(^{1617}\) For example; TWUG (PC7-68.15), H Pearse (PC7-445.15), Glenfield Farm (PC7-236.19), Monument Road Farm Ltd (PC7-370.19), Tregellen Farm Ltd (PC7-361.15)

\(^{1618}\) PC7-471.2
12.168. Six submissions request amendments to the extent of the mapped Levels Plain HNCA. Timaru DC\textsuperscript{1619} and the CDHB\textsuperscript{1620} requested the Levels Plain HNCA be amended to include and provide additional protection for select nearby community water drinking supply zones. I & H McMillan’s submission\textsuperscript{1621} proposes an alternative Levels Plain HNCA which is smaller than what was proposed by PC7. Another three submissions\textsuperscript{1622} seek a reduction in the map extent so it is focused on targeted areas, although they do not provide a mapped alternative. These submissions (including the McMillans) consider that what has been delineated is not supported by the evidence informing PC7.

12.169. Tronnoco Farming\textsuperscript{1623} and K & K O’Kane\textsuperscript{1624} seek a new policy is included in Section 14 that requires more measuring sites for the lower Levels Plains area to show that this area does not have the same high nitrogen concentration as the Levels Plains Area. Both submitters do not consider the Lower Levels Plain area should be subject to the nitrogen loss requirements of Table 14(zc), instead there should be a focus on improving water quality in Seadown Drain.

12.170. As noted above the HNCAs were delineated using a combined approach of measuring, modelling and considering other local factors. We recommend rejecting submissions seeking to change the spatial extent of the Levels Plain HNCA, particularly where submitters seek a reduction in size or deletion.

**Recommendation**

12.171. That the Levels Plain HNCA is retained as notified.

**Rangitata Orton HNCA**

12.172. Again, we note that submissions lodged on both the definition and map layer relate to the spatial extent of the area, so these are evaluated together in this section.

12.173. Rooney Farms\textsuperscript{1625} seeks deletion of the Rangitata-Orton HNCA from PC7 and the planning maps on the ground that the area has been showing improvements in water quality since the launch of the Rangitata South Irrigation Scheme. Failing this, it requests the layer be amended\textsuperscript{1626} to only include areas proximal to wells which are exhibiting a measurable decline in water quality. We understand the improvements in water quality have been attributed to a likely leak in the scheme. Consequently, it cannot be guaranteed that this dilution will continue indefinitely so it should not be used as an excuse to avoid other actions to improve water quality in the area.

12.174. Three submissions request specific amendments to the boundary of the Rangitata Orton HNCA. DHL\textsuperscript{1627} and Pye Group\textsuperscript{1628} request that the layer be amended along the north-east border to exclude the part which was a green nutrient allocation zone (meets water quality

\textsuperscript{1619} \textsuperscript{PC7-292.129}
\textsuperscript{1620} \textsuperscript{PC7-347.19}
\textsuperscript{1621} \textsuperscript{PC7-568.31, refer to original submission or Appendix 15 of the SoDR Addendum.}
\textsuperscript{1622} \textsuperscript{Ashwick Flat Dairy Farms (PC7-283.15), Cascade Creek Ltd (PC7-294.16), B Caird (PC7-175.15)}
\textsuperscript{1623} \textsuperscript{PC7-210.4}
\textsuperscript{1624} \textsuperscript{PC7-354.5}
\textsuperscript{1625} \textsuperscript{PC7-453.5}
\textsuperscript{1626} \textsuperscript{PC7-453.6}
\textsuperscript{1627} \textsuperscript{PC7-415.7}
\textsuperscript{1628} \textsuperscript{PC7-352.29, PC7-352.37}
outcomes). RSIL\textsuperscript{1629} seeks reduction of the mapped area to only include areas where freshwater outcomes have not been improved in the pre-existing red nutrient allocation zone (water quality outcomes not met). These submissions explain that the NAZ classifications and monitoring results show it is unnecessary for the whole mapped area to be subject to targeted reductions.

12.175. Results of recent monitoring are addressed above, and we also note that as part of the OTOP sub-regional nutrient management framework PC7 removes the NAZ layer from the sub-region. We maintain that there is a need for reductions beyond GMP in this area to address water quality issues, and do not recommend any changes to the extent of the Rangitata Orton HNCA.

**Recommendation**

12.176. That the Rangitata Orton HNCA is retained as notified.

**Policies 14.4.18 and 14.4.19**

**Submissions and Analysis**

12.177. Policies 14.4.18 and 14.4.19 set out methods by which water quality targets will be achieved by establishing HNCAs, requiring further reductions and limiting consent durations in the mapped areas.

12.178. Six submissions\textsuperscript{1630} were received in support of Policy 14.4.18. OWL\textsuperscript{1631} and Synlait\textsuperscript{1632} also submitted in support of the Policy, subject to their respective submission points requesting changes to Table 14(zc) (discussed below) being adopted.

12.179. Forest & Bird\textsuperscript{1633} seeks that recognition of tuhituhi neherā (rock art) be included in the Policy. We consider this unnecessary as there is no geographical overlap between the delineated HNCAs and RAMAs in PC7.

12.180. Orari Estate Holdings\textsuperscript{1634} seeks an extension of the timeframes due to the financial impacts they will have on farmers. As the Section 32 Report acknowledges, there will potentially be significant economic impacts on sheep and beef and arable farms in the Levels Plains and Rangitata Orton HNCAs. However, it remains our view that the 10-year period set to achieve the first step of reductions is sufficient to lessen the impact over time. Extending this timeframe would be unfair to the competing environmental and cultural requirements for water quality to improve in a timely manner.

12.181. Four submissions\textsuperscript{1635} seek retention of Policy 14.4.19 as notified, noting that Synlait’s support is contingent on the changes they have requested to Table 14(zc) being granted. These

\textsuperscript{1629} PC7-235.37  
\textsuperscript{1630} Fish & Game (PC7-351.42), Ballance (PC7-441.30), Fonterra (PC7-416.7), Rangitata Dairies (PC7-316.6), Silver Fern Farms Ltd (PC7-468.17), Timaru DC (PC7-292.67)  
\textsuperscript{1631} PC7-188.17  
\textsuperscript{1632} PC7-381.46  
\textsuperscript{1633} PC7-472.165  
\textsuperscript{1634} PC7-161.5  
\textsuperscript{1635} Silver Fern Farms Ltd (PC7-468.18), Synlait (PC7-188.18), Fish & Game (PC7-351.43), Timaru DC (PC7-292.68)
submissions all acknowledge the need for targeted water quality improvements within the HNCAs. Forest & Bird\textsuperscript{1636} seeks the policy be amended to recognise tuhituhi neherā (rock art) but as discussed above we do not agree that this is an appropriate or necessary addition to the Policy.

12.182. OWL\textsuperscript{1637} and Federated Farmers\textsuperscript{1638} request changes for the cessation of clause (b) when water quality targets in Table 14(g) have been met. They reason that this would increase certainty for farmers and enable them to make informed investment decisions. A number of submissions\textsuperscript{1639} request that the Policy be amended to allow for consent durations longer than 10 years when water quality targets have been achieved for the same reasons as OWL and Federated Farmers discussed above. DairyNZ\textsuperscript{1640} requests changes to the same effect, and also that the 10 year limit for consent durations be entirely removed from the clause.

12.183. RSIL\textsuperscript{1641} requests a similar amendment for clause (b) to be rewritten so that consents cannot be granted beyond 2035 until the targets in Table 14(g) have been achieved. We do not agree with this approach as setting a date rather than consent duration expiry could result in very short consent durations being granted towards the end of the life of this plan. Ravensdown\textsuperscript{1642} also seeks changes to clause (b) of the Policy to align it with its request above and to amend the 10-year consent duration limit to a guideline by insertion of the word “generally”. It is the submitters’ opinion that the Council should retain flexibly for setting consent durations.

12.184. In addition to submissions received in support of Policy 14.4.19, R Devlin submitted specifically in support and seeking retention of the 10-year consent duration limit in the Policy.

12.185. The 10-year consent duration limit was written to give consent holders as much certainty as possible while also creating a system where consents must be renewed in each plan cycle to be brought into line with any changing reductions or policy direction. We consider that this remains the most appropriate approach, and do not agree that the Policy should be amended to allow for longer consent durations when the water quality targets in Table 14(g) have been achieved. Given the lag time before the effects of the reductions will be measurable and the extent of the improvements required, particularly in the Rangitata Orton and Levels Plains HNCAs, it is unlikely that this would be achieved in the life of this plan, and can therefore be reconsidered with future plan reviews.

12.186. Fonterra\textsuperscript{1643} seeks changes to provide for consent terms for longer than 10 years where the farming activity incorporates an industrial discharge to reflect the significant investments made by these facilities. We recognise that limited consent durations may influence system investment decisions over this time, but to exempt industrial discharges from the limit and continue aligning all other dischargers in plan review cycles may result in an unfair burden being placed on those other operations.

\textsuperscript{1636} PC7-472.166
\textsuperscript{1637} PC7-381.47
\textsuperscript{1638} PC7-430.198
\textsuperscript{1639} For example; T Henderson (PC7-115.14), Raumea Farms Ltd (PC7-110.1), H Pearse (PC7-445.16), Phillips Farming Ltd (PC7-364.26), Tregellen Farm Ltd (PC7-361.16)
\textsuperscript{1640} PC7-357.73, PC7-357.74
\textsuperscript{1641} PC7-235.29
\textsuperscript{1642} PC7-114.101
\textsuperscript{1643} PC7-416.19
12.187. Orari Estate Holdings\textsuperscript{1644} requests that the Policy be amended to extend timeframes to achieve water quality outcomes due to the financial impacts achieving these outcomes will have on farms. Tepuni Partnership\textsuperscript{1645} seeks deletion of the percentage reductions in HNCAs until the effects of farming at GMP have been measured. RSIL\textsuperscript{1646} seeks that the percentage reductions required to be amended as a consequential change to its submission on the spatial extent of the Rangitata Orton HNCA. Forest & Bird\textsuperscript{1647} seeks increases in the percentage reductions for HNCAs within the life of the plan for faster improvements in water quality.

12.188. McFarlane Agriculture & McFlynn Potatoes requests the Policy be amended to be subject to trigger levels\textsuperscript{1648}. It is unclear in the submission what the levels should be or how trigger levels would be incorporated into the HNCA nutrient management policy framework. Consequently we do not recommend any changes to PC7 in response to this submission.

12.189. Ravensdown\textsuperscript{1649} seeks deletion of clause (c) on the grounds that other provisions in PC7 “including Policy 14.4.18(b), establish an appropriate bottom line in relation to avoiding, or prohibiting, the granting of resource consents for farming activities”. RSIL\textsuperscript{1650} seek an exception to clause (c) based on a measured GMP loss rate rather than baseline GMP to align with the intention of Policy 14.4.20A(c). Ballance\textsuperscript{1651} considers the Policy too restrictive and requests “avoid granting” in clause (c) be changed to “generally not granting”.

12.190. We acknowledge that this clause is restrictive given recent case law around interpretation of “avoid”, however the intent of the policy is to address water quality in the HNCAs in a timely manner and achieve targets set in Table 14(g). It is appropriate to set and implement strict policies to achieve this and recognise Te Mana o te Wai.

12.191. Fonterra\textsuperscript{1652} seeks the Policy be amended to acknowledge the concepts of Equivalent Baseline GMP Loss Rates and Equivalent Good Management Practice Loss Rates for the benefit of discharges that cannot be reliably modelled in the Farm Portal. Policies 4.38D and 14.4.20B allow the use of Equivalent Baseline GMP or Equivalent Good Management Practice Loss Rate where the Farm Portal is not appropriate, so it is not necessary to write the alternative pathways into each provision referencing GMP.

12.192. In line with submissions discussed previously requesting additional science and monitoring, Federated Farmers\textsuperscript{1653} requests insertion of requiring rigorous and comprehensive monitoring inside the HNCA areas. We do not agree that this Policy is an appropriate place for such a requirement. We note that the topic of ongoing monitoring and science is the subject of a number of submissions and refer to discussion of this common theme elsewhere in this report.

\textsuperscript{1644} PC7-161.8
\textsuperscript{1645} PC7-412.2
\textsuperscript{1646} PC7-235.38
\textsuperscript{1647} PC7-472.173
\textsuperscript{1648} PC7-278.67
\textsuperscript{1649} PC7-114.102
\textsuperscript{1650} PC7-235.23 - There might be confusion about whether the submitter meant Policy 14.4.20A or 14.4.20(a) and we invite the submitter to confirm this at the hearing. Our recommendation would be to not adopt any changes in response to this submission regardless of which the submitter intended.
\textsuperscript{1651} PC7-441.32
\textsuperscript{1652} PC7-416.9
\textsuperscript{1653} PC7-430.323
**Recommendation**

12.193. We recommend that changes can be made to consolidate and simplify Policies 14.4.18 and 14.4.19 as per Appendix E.

**Table 14(zc): High Nitrogen-Concentration Area Staged Reductions in Nitrogen-Loss for Farming Activities**

12.194. Table 14(zc) establishes reductions in nitrogen loss beyond the Baseline GMP Loss Rate for farming activities within the HNCA. The table includes dates for these reductions to be achieved by.

12.195. DOC\textsuperscript{1654} and Fonterra\textsuperscript{1655} support Table 14(zc), and DOC describes the reductions as necessary for achieving water quality outcomes. OWL\textsuperscript{1656} seeks an unspecified amendment to clarify the starting point for the second step of reductions. In addition to changes to the table (discussed below), Agri Magic Ltd\textsuperscript{1657} requests clarification of the starting point in time and land use that reductions will be calculated from. We note the starting point for each reduction is stated in Note 1 below the table. Given the submission points from OWL and Agri Magic Ltd we agree that amendments for the purposes of clarification of the table may be appropriate.

12.196. J Mehrtens\textsuperscript{1658} provides a definition for ‘Dairy Support’ requesting it be inserted to enhance clarity of the table and nutrient management provisions. This submission appears to be primarily on Waimakariri Sub-region matters so we refer to Part 5 of this report for the analysis on the need and difficulties of defining ‘Dairy Support’.

12.197. Six submitters\textsuperscript{1659} seek deletion of percentage reductions in the HNCAs, or outright deletion of Table 14(zc). Ravensdown considers that provisions should focus on water quality outcomes instead and propose an alternative reduction scheme, refer to the analysis of this in Part 4 Section 8 of this Report. Agri Magic Ltd\textsuperscript{1660} seeks the reductions be effects-based rather than input constrained so farmers can continue to be adaptable in their land use. There were insufficient details provided to do an analysis of whether a regime based on these principles would work in Canterbury, and the submitter may wish to provide that detail and analysis in evidence.

12.198. Seaforth Farm Ltd\textsuperscript{1661} requests the proposed reductions be replaced in Levels Plain with a requirement for farms to operate at GMP with regular auditing, it opposes the use of OVERSEER\textsuperscript{®} and considers the broad reduction requirements unfair on farms already demonstrating GMP. Current water quality monitoring and scientific analysis indicate that requiring farms within the HNCAs to operate at GMP will not make sufficient improvements to meet water quality targets. The plan is required to show a pathway to achieve these targets and without further reductions in these areas it will not properly give effect to the NPSFM.

\textsuperscript{1654} PC7-160.102
\textsuperscript{1655} PC7-416.8
\textsuperscript{1656} PC7-381.113
\textsuperscript{1657} PC7-131.6
\textsuperscript{1658} PC7-421.2
\textsuperscript{1659} Ravensdown (PC7-114.59), Cascade Irrigation Race Ltd (PC7-159.6), Phillips Farming Ltd (PC7-364.31), Tepuni Part (PC7-412.5), H Pearse (PC7-445.21), Mackenzie College (PC7-487.19)
\textsuperscript{1660} PC7-131.7
\textsuperscript{1661} PC7-253.2
12.199. Three submissions\textsuperscript{1662} seek deletion of the 2035 reductions column. Synlait submits that it is not appropriate for the provisions in PC7 to go beyond the lifetime of the plan while DairyNZ claims the 2035 reductions are not realistic or achievable. Federated Farmers cites the high potential economic losses resulting from the 2035 reductions and suggest it is replaced with an adaptive management approach after 2030. Submissions also request timeframes in the table be extended by five years\textsuperscript{1663}, or an unspecified amount\textsuperscript{1664}.

12.200. Two submitters\textsuperscript{1665} seek a maximum cumulative reduction of 10% beyond GMP, split evenly between the proposed time steps 2030 and 2035. Pye Group\textsuperscript{1666} seeks different reductions within the Rangitata Orton HNCA for the areas which are orange and red nutrient allocation zones in the operative plan. The submissions cite the economic impacts that these will have, the significant investment farmers have already made in infrastructure to achieve GMP, and the compounding effects of changes to their nutrient management practices and flow reliability. As discussed above the plan must show a pathway to achieving water quality targets, so the second step of reductions is necessary to give effect to the NPSFM without increasing the amount of reductions being required by 2030. The timesteps in Table 14(zc) and the consent limit durations in Policy 14.4.19(b) have been designed so that before the second step of reductions are required there is an opportunity to amend them during the 10-yearly plan review cycle. This will allow flexibility in response to new technology or unexpected levels of improvement in water quality in the areas.

12.201. A number of submitters seek changes to the amount of reduction beyond GMP required. Some\textsuperscript{1667} request the reduction numbers be decreased without specifying an alternative. Three submitters\textsuperscript{1668} request that the reductions be recalculated based on the present state of water quality to achieve the required water quality outcomes, and one\textsuperscript{1669} seeks recalculation based on what is attainable. Submitters\textsuperscript{1670} also seek a “more accurate scientific analysis” to determine the percentage outcomes (but do not provide alternative methods or numbers). The Rathkeale Farming Partnership\textsuperscript{1671} object to the broad approach to HNCAs and nitrogen loss targets.

12.202. Arowhenua and Te Rūnanga,\textsuperscript{1672} Forest & Bird\textsuperscript{1673} and J Richardson\textsuperscript{1674} seek that Table 14(zc) be amended to require higher nitrogen reductions within shorter timeframes. Arowhenua and Te Rūnanga are concerned that the provisions prioritise continuation of existing use and long-term changes over Te Mana o te Wai. Forest & Bird specifically requests that the reductions are increased within the life of this plan and the Orari River Protection Group\textsuperscript{1675}

---

\textsuperscript{1662} Federated Farmers (PC7-430.285), Synlait (PC7-188.19), DairyNZ (PC7-357.67)
\textsuperscript{1663} Rooney Farms Ltd (PC7-453.9), B Caird (PC7-175.21), Tregellen Farm Ltd (PC7-361.22), Pye Group (PC7-352.40)
\textsuperscript{1664} Darby Farm Partnership (PC7-464.1), Dairy Farm Management Services Ltd (PC7-219.38), Monument Road Farm Ltd (PC7-370.37), Glenfield Farm (PC7-236.21)
\textsuperscript{1665} Ashwick Flat Dairy Farms (PC7-283.21), Cascade Creek Ltd (PC7-294.22)
\textsuperscript{1666} PC7-352.38, PC7-352.30
\textsuperscript{1667} Monument Road Farm Ltd (PC7-370.37)
\textsuperscript{1668} Pye Group (PC7-352.39), RSIL (PC7-235.41), Ballance (PC7-441.45)
\textsuperscript{1669} G W Anderson (PC7-74.5)
\textsuperscript{1670} TWUG (PC7-68.21), M Hawkins (PC7-97.15)
\textsuperscript{1671} PC7-181.3
\textsuperscript{1672} PC7-424.196
\textsuperscript{1673} PC7-65.49
\textsuperscript{1674} PC7-472.164, PC7-472.165
\textsuperscript{1675} PC7-551.9
seeks that the targets in HNCAs occur sooner than 2027 to avoid further degradation of water quality.

12.203. Other requested changes include deletion of the Levels Plains HNCA row on the basis that the water quality data informing PC7 does not support its inclusion, and exempting arable farmers from the reductions in the table objecting to the use of OVERSEER® and the broad approach to nutrient management. We refer to Part 1 of this report which addresses submitters concerns with the use of OVERSEER®.

12.204. DairyNZ seek the insertion of a note introducing a reduction threshold below which emitters are exempt from any requirement meet the reduction for that timestep (replicating Table 8-9, Note 3 in Section 8 of PC7). We do not consider this bottom threshold to be necessary in Section 14 given the smaller scale and fewer steps of reductions.

12.205. The staged reductions in PC7 were designed to balance the economic impact on farms with the need for timely improvements in water quality in the HNCAs. To exempt types of farms or areas from the staged reductions would be inequitable and result in net lower reductions, which would delay the HNCAs meeting water quality targets in Table 14(g). This would not give proper effect to national direction including the prioritisation of Te Mana o te Wai and establishing a path to achieve water quality targets. We also refer to and agree with the more extensive discussion of this topic in Part 2 of this Report. Acknowledging that some parties wish the plan would go further and faster to meeting these targets, we believe PC7 Part B strikes an appropriate balance, allowing businesses to remain viable while requiring timely environmental gains.

**Recommendation**

12.206. Deletion of the word “cumulative” from the table heading row is recommended for clarity.

**Policy 14.4.28**

12.207. Policy 14.4.28 requires industrial and trade waste activities in the Rangitata Orton HNCA to reduce nitrogen losses by 30% below their consented rate by 2035. Three submissions were received in support of Policy 14.4.28, noting that Federated Farmers’ support is contingent on the reduction set in the Policy being “achievable and realistic”. The submissions recognise that it is equitable and beneficial for the environment for all dischargers to take steps to reduce their nitrogen discharging. Forest & Bird seeks amendments to the policy to reduce timeframes and require larger reductions, whereas Orari Estate Holdings seeks an (unspecified) extension to the timeframe considering the potential financial impact on farmers. Synlait seeks that industrial discharges as part of a farming activity be exempt from the reductions in the Policy as those activities already face reduction requirements under the nutrient management rules, this would also maintain fairness between industrial and
individual consent users. Fonterra\textsuperscript{1683} seeks a minor wording amendment to the Policy changing the term “nutrient losses” to “nutrient load”.

12.208. The timeframes in the Policy were carefully considered and the target of reductions by 1 January 2035 is still considered appropriate. It also aligns with the second step of discharges being required from nitrogen loss from farming activities. In response to Synlait’s submission, it is our view that the staged reductions and industrial discharge reductions do not ‘double count’ industry discharges applied as part of a farming activity. The starting point that each required reduction is measured from is different (current consented discharge, and baseline GMP), so the reductions would not compound, rather a reduction made in one area may contribute to meeting the other required reduction as well.

\textit{Recommendation}

12.209. To address the submission point from Synlait, the Policy may benefit from a minor wording amendment to clarify what was meant by “current” and ensure the Policy is applied consistently throughout the life of the plan. We recommend replacing this with the notification date for PC7 and other minor wording amendments for clarity as per Appendix E.

\textit{Policy 14.4.41}

12.210. Policy 14.4.28 requires industrial and trade waste activities in the Levels Plain HNCA to reduce nitrogen losses by 30\% below their consented rate by 2035. Twenty-one submitters\textsuperscript{1684} seek retention of Policy 14.4.41, noting that Federated Farmers\textsuperscript{1685} support was subject to the Policy being “reasonable and achievable”. Support is generally on the basis that it is fair for nitrogen reductions to be required across both farming and industrial activities. Synlait seeks amendment of the Policy so industrial discharges which are part of farming activities are not required to reduce their nitrogen discharge for the same reasoning as discussed in Policy 14.4.28. Ravensdown considers that the reductions in the Policy are likely to be challenging for some operations and seeks changes to the wording as follows:

“…point source discharges of nitrogen from industrial or trade waste disposal activities are to aim to reduce nitrogen losses by up to 30\% below current consented rates by 1 January 2035.”

12.211. Removing the requirement for industrial activities to make any reductions and limiting the amount they can reduce would completely negate the effect of the Policy. There would be no reason or incentive to make any reductions which would not prioritise Te Mana o te Wai or make any progress to achieving the water quality outcomes in the NPSFM. As discussed above in response to Policy 14.4.28, these reductions are considered reasonable and achievable.

\textit{Recommendation}

12.212. We recommend replacing “current” with the notification date for PC7 and other minor wording amendments for clarity to maintain consistency with Policy 14.4.28 as per Appendix E.

\textsuperscript{1683} PC7-416.11
\textsuperscript{1684} For example; B Caird (PC7-175.20), M Hawkins (PC7-97.14), Mackenzie College (PC7-487.18), Vetlife Ltd (PC7-456.19), Monument Road Farm Ltd (PC7-370.36)
\textsuperscript{1685} PC7-430.225
Rules 14.5.23 and 14.5.23A – Irrigation Schemes

12.213. Rule 14.5.23 establishes a discretionary activity for irrigation schemes or principal water suppliers to discharge nutrients onto or into land where the staged reductions in Table 14(zc) will be met within HNCA. Rule 14.5.23A holds that activities which do not meet the condition in Rule 14.5.23 are non-complying.

12.214. Timaru DC\textsuperscript{1686} and Federated Farmers\textsuperscript{1687} support Rule 14.5.23, noting that the latter’s support is provisional on the amendments it has requested to Table 14(zc) being adopted. Forest & Bird\textsuperscript{1688} seek amendment of the rule to require faster staged reductions than notified. All of these submissions recognise the current state of water quality and the need for timely improvements. Ravensdown\textsuperscript{1689} seeks deletion of the condition as a consequential change to its request for Table 14(zc) to be deleted.

12.215. The submission from Arowhenua and Te Rūnanga\textsuperscript{1690} seeks retention of the body of Rule 14.5.23 but requests deletion of the notification Note. It considers that the large command areas of irrigation schemes and potential adverse effects on cultural values and the environment mean there should be an opportunity for Arowhenua and Te Rūnanga to submit on any consent applications of this nature.

12.216. Federated Farmers\textsuperscript{1691} supports the proposed rule provided their changes requested to Table 14(zc) are adopted, and Timaru DC\textsuperscript{1692} seeks retention of the intent of the rule. Ravensdown\textsuperscript{1693} seeks deletion of the rule in its entirety as it would be rendered unnecessary if their request for deletion of Table 14(zc) and the condition for Rule 14.5.23 (above) is granted.

12.217. Forest & Bird’s submission point primarily relates to the timeframes in Table 14(zc) which have been evaluated above. We have not recommended Table 14(zc) be deleted, if the Hearing Panel agree with our recommendation then we consider that it is appropriate to retain the condition for Rule 14.5.23, and Rule 14.5.23A. We agree with Arowhenua and Te Rūnanga’s reasoning (above) and decision requested to delete the notification Note for Rule 14.5.23.

Recommmendation

12.218. Deletion if the notification Note under Rule 14.5.23.

12.219. No changes are recommended to Rule 14.5.23A.

Introduction

12.220. A number of submissions\textsuperscript{1694} requested wording changes to the HNCA part of the introductory text of Section 14. These are largely matters of clarification, focusing on the DWSNZ, clarifying

\textsuperscript{1686} PC7-292.107 \hfill \textsuperscript{1687} PC7-430.254 \hfill \textsuperscript{1688} PC7-472.191 \hfill \textsuperscript{1689} PC7-114.532 \hfill \textsuperscript{1690} PC7-424.151, PC7-424.35 \hfill \textsuperscript{1691} PC7-430.255 \hfill \textsuperscript{1692} PC7-292.108 \hfill \textsuperscript{1693} PC7-114.54 \hfill \textsuperscript{1694} Pye Group (PC7-352.27), RSIL (PC7-235.27), Timaru DC (PC7-292.44), Ravensdown (PC7-114.27), OWL (PC7-381.11)
what does not already meet the guidelines and what Chapter 14 should strive to meet in the guidelines. The introductory text refers to “recommended guidelines” which are not the same as limits set in the DWSNZ, but technical advice that average concentrations should not exceed half of the maximum allowable value for nitrate concentrations to ensure the maximum limit is not exceeded.

**Recommendation**

12.221. Amend introductory text as per Appendix E.
13. **Schedule 7 and Schedule 7A – OTOP specific requirements**

**Introduction**

13.1. This part of the Section 42A Report discusses submissions made on the proposed additional requirements within Schedules 7 and 7A for the OTOP sub-region.

13.2. Part B of PC7 amends Schedule 7 to introduce the following additional requirements for FEPs prepared within the OTOP sub-region:

- Inclusion of artificial watercourses in the information required under Part B, Section 2 of Schedule 7
- Additional objective and target within Management Area 5A: Nutrients.
- Additional objective and target within new Management Area: Mahinga kai.
- Additional objective and targets within new Management Area: In-stream Biodiversity Values
- Additional objective and targets within new Management Area: Tuhituhi neherā (Rock Art sites).

13.3. Part B of PC7 also amends Schedule 7A to introduce the following additional requirements for Management Plans prepared within the OTOP sub-region:

**Submissions**

13.4. Five submissions were received on the additional requirements for the OTOP sub-region within Schedule 7.

13.5. One submission was received on the OTOP specific amendments to Schedule 7A. This submission, from Ravensdown\(^{1696}\), supports the amendments and seeks their retention. We therefore recommend retaining the proposed amendments to Schedule 7A as notified.

13.6. As discussed within Part 2 of this report, a range of other submissions were received on Schedules 7 and 7A. Only submission points that specifically address the additional requirements for the OTOP sub-region are discussed within this section, and all other submissions on Schedules 7 and 7A are addressed within the relevant sections of this report.

**Schedule 7**

13.7. Arowhenua and Te Rūnanga\(^{1697}\) support the proposed mahinga kai objective within Part B, clause (11) of Schedule 7 and seek that it is retained as notified. The submitter also requests amendments to the additional requirements for waipuna and tuhituhi neherā (rock art) within the OTOP sub-region, and a new management objective to protect mātaitai. However, as these matters relate to topics covered elsewhere in this report, they are not discussed further in this section.

---

\(^{1695}\) The planning authors for this section are Tim Stoddart and Matthew McCallum-Clark.

\(^{1696}\) PC7-114.26

\(^{1697}\) PC7-424.42
13.8. Orari River Protection Group and A Brown support the inclusion of in-stream biodiversity values within Part B, clause (11) of Schedule 7. No specific decision is sought by the submitters.

13.9. DairyNZ supports the additional requirements conditionally, subject to their relief requested for Table 14(zc).

13.10. Ravensdown states that as the OTOP ZC made a number of recommendations aimed at reducing nitrates, the reflection of these additional approaches within FEPs developed in the sub-region is appropriate. However, it seeks amendments to the OTOP specific requirements within Schedule 7 to reflect its opposition to the continued staged reductions in Table 14(zc). It requests the following amendments to Objective 1 and Target 1 of clause (11) of Schedule 7 Part B:

**Objectives**

1. **Staged Reductions, staged over time, beyond Baseline GMP Loss Rates, or lawful nitrogen loss rates, within the Rangitata Orton, Fairlie Basin, and Levels Plains High Nitrogen Concentration Areas to meet nitrate nitrogen limits for surface and groundwater within Section 14.**

**Targets**

1. Where required, by 1 January 2030, or later date in accordance with Policy 8.4.27, further reductions in nitrogen losses beyond Baseline GMP Loss Rates, or lawful nitrogen loss rates for properties within the Rangitata Orton, Fairlie Basin and Levels Plains High Nitrogen Concentration Zones Areas to achieve the nitrate nitrogen, total nitrogen and ammoniacal nitrogen targets specified in Tables 14(d), 14(f) and 14(g) and for nitrogen losses from dairy farming activities to be reduced by 15% and from all other farming activities by 5% as required by Table 14(zc). However, Management Area 5A: Nutrients, Objective 2, Target 1 does not apply to properties that comply with the irrigation and winter grazing thresholds in Rule 14.5.17.

13.11. Ravensdown consider that this relief will ensure the focus is on achieving the freshwater outcomes being sought (i.e. the water quality targets and the farm type specific nitrogen loss percentage reductions up to 2030) rather than the percentage reductions outlined in Table 14(zc).

13.12. In relation to the requested amendments to remove the reference to Baseline GMP Loss Rates and lawful nitrogen loss rates from Objective 1 and Target 1, we note that the starting point for reductions in Table 14(zc) is generally the Baseline GMP Loss Rate except as otherwise provided for in Policy 14.4.20. Therefore, removing this reference would undermine other provisions within Section 14, such as Policy 14.4.19, and the water quality outcomes within the HNCAs. Therefore, we recommend rejecting this relief sought.

1698 PC7-551.11
1699 PC7-109.16
1700 PC7-357.45
1701 PC7-114.25
13.13. In response to the request from Ravensdown to include reference to Policy 8.4.27, we consider that this is likely an error and the submitter intended to instead refer to Policy 14.4.20A. Policy 14.4.20A provides guidance for consent allocations for farming activities within a HNCA where the loss reductions required by Policy 14.4.20(c) are unable to be achieved by the dates set out in Table 14(zc). These matters will be considered during the consenting process, with the timing of any required reductions specified within the consent conditions. Given that the nitrogen loss limit and required reductions will be clear within the consent conditions, an FEP auditor will be aware of any differences to Table 14(zc). The existing wording of “where required” within the target also signals that, in some situations, either reductions may not be required, or they may occur at different dates. We therefore recommend rejecting the relief sought by the submitter.

13.14. FEPs are the main tool within the CLWRP for identifying the environmental risks and impacts of farming activities within the region, and avoiding, remedying or mitigating adverse effects from these operations. Compliance with land use consents (including nitrogen loss limits) for farming activities is largely driven through the FEP auditing process. Therefore, ensuring that FEPs are prepared in accordance with Schedule 7 including the relevant nitrogen loss reductions required by Table 14(zc) is necessary so that the nitrate nitrogen limits or the OTOP sub-region and water quality outcomes are achieved. Given there is a significant lag time between the actions undertaken on the ground and a corresponding improvement in water quality, it is our view that the provisions appropriately focus the actions (or methods) to achieve water quality outcomes.

13.15. We do not agree that there is justification to delete, or otherwise weaken, the additional requirements for the OTOP sub-region. As discussed within Part 4, Section 5 of this report, Table 14(zc) is recommended to be retained, with some minor wording amendments. Given the above, we recommend rejecting the request from Ravensdown to delete the reference to Table 14(zc) within Target 1.

13.16. With reference to Part 2, Section 5 of this report, we consider that, in its entirety, Target 1 of Management Area 5A: Nutrients for OTOP does not function as a measurable target for the FEP auditing process. A ‘Target’ is defined within Schedule 7 as a measurable, auditable statement that contributes to achievement of the Objective in each Management Area. However, Target 1 includes the following additional wording:

...However, Management Area 5A: Nutrients, Objective 2, Target 1 does not apply to properties that comply with the irrigation and winter grazing thresholds in Rule 14.5.17.

13.17. We consider that this additional statement would be more suitable to include as an advisory note within clause (11). This will ensure that, in its entirety, Target 1 is consistent with the definition of a target within Schedule 7. This approach is also consistent with other sub-region sections of Schedule 7, and the recommendations within Part 5, Section 8 of this report for the Waimakariri sub-region. Therefore, we recommend amendments to Clause 11 to this effect.

13.18. Additionally, to ensure consistency with other sub-regional sections within Schedule 7, we recommend amendments to the following note within Clause 11:

Within the Orari-Temuka-Opihi-Pareora Sub-region, Part B of Schedule 7 also includes the following additional requirements for farm environment plans apply:
13.19. While there are no submissions seeking the above changes, we consider the structural improvement to Schedule 7 will have a minor effect on the requirements for an FEP within the OTOP sub-region, provided for under Schedule 1, clause 16(2) of the RMA.

**Recommendation**

13.20. Amend clause (11) of Schedule 7 as per Appendix E.

13.21. Retain the Additional Requirements for OTOP within Schedule 7A as notified.
14. **Miscellaneous Topics**\(^{1702}\)

14.1. There are several miscellaneous provisions in Part B of PC7 that do not specifically relate to any particular topic. Generally, there are only a few submissions on these provisions which are set out below.

**Flow Sensitive Catchments**

*Introduction and Provisions*

14.2. This section of the report addresses submissions relating to the provisions in Part B of PC7 to clarify which catchments should be identified as ‘flow sensitive’ and therefore, have additional CLWRP restrictions.

14.3. A flow-sensitive catchment is defined in section 2.9 of the CLWRP as:

... *the catchment of a river which is dependent on rainfall as its main source of flow, has limited ability to store water, and where evapotranspiration can be expected to exceed precipitation between December and April resulting in very low flows in summer and autumn compared with mean flows.*

*Submissions and Analysis*

14.4. There are a limited number of submissions on this topic and they cover a range of disparate points, the analysis of the points is grouped with the submission descriptions.

14.5. J Richardson\(^{1703}\) and Fish & Game\(^{1704}\) support the flow sensitive catchment locations outlined in section 14.

14.6. Federated Farmers\(^{1705}\) seeks amendment to delete the sub-catchments listed in rows 2-8. It states that the upper Orari River should be retained as a flow sensitive catchment (row 1) due to the risk of spread of wilding pines associated with the planting of pine forests in the area.

14.7. While we agree that wilding pines have the ability to affect flows and have historically been an issue in the Orari-Opuha-Opihi area, this is a pest management issue and is generally unrelated to whether or not a catchment is determined as flow sensitive or not.

14.8. Federated Farmers\(^{1706}\) also requests that the list of flow-sensitive catchments should be reassessed against the criteria of Flow Sensitive Catchments, emphasising the need to reassess downland rivers. It considers care should be taken to include only those areas to which the previous criteria apply - typically upper catchments with greater rainfall (greater than approx. 750 mm). The submitter is of the opinion that downlands that receive lower rainfall do not contribute as much as upper sections of the catchment to the quantity of river flow, and that these areas should be excluded from the sensitive parts of the catchment. It further submits that because of the value of downlands, they are unlikely to be considered for large-scale

\(^{1702}\) The planning authors for this section are Hannah Goslin and Matthew McCallum-Clark and technical authors are Daniel Clark and Shirley Hayward.

\(^{1703}\) PC7-65.50

\(^{1704}\) PC7-351.91

\(^{1705}\) PC7-430.328

\(^{1706}\) PC7-430.286
afforestation and further help the case for these areas to not be recognised as sensitive parts of the catchment.

14.9. We note Federated Farmers are requesting to use previous criteria to assess which catchments should be determined to be flow sensitive. They refer to the criteria as being typically upper catchments with rainfall greater than approximately 750 mm. As the submission does not provide further detail, including the source of this criteria, it is difficult to assess the submission point and make any recommendation. We consider that a consistent criterion, as set out in the definition, is important to apply. In the absence of any justification for an alternative criteria, we recommend that the list not be reduced.

High Naturalness Water Bodies

Introduction and Provisions

14.10. This section of the report addresses submissions relating to the provisions proposed in Part B of PC7 to clarify the location of high naturalness waterbodies, which are then subject to additional CLWRP restrictions. As there are a limited number of submissions on this topic and they cover a range of disparate points, the analysis of the points is grouped with the submission descriptions.

14.11. The table of definitions in Section 2.9 sets out that high naturalness waterbodies:

- Means those hāpua, wetlands and natural state waterbodies which are considered to have outstanding or significant characteristics.

14.12. For high naturalness waterbodies, Policy 4.6 reads:

- ...the damming, diverting, or taking of water is limited to that for individual or community stock or drinking water, and water for the operation and maintenance of existing infrastructure.

14.13. Within the NPSFM, there is reference made to a similar concept: natural form and character of freshwater, which is defined as “where people value particular natural qualities of the freshwater management unit”. Natural form and character of freshwater is listed under ‘Other National Values’ rather than ‘Compulsory National Values’ in the document. Appendix 1 for natural form and character reads:

- Matters contributing to the natural form and character of a freshwater management unit are its biological, visual and physical characteristics that are valued by the community, including:
  i. its biophysical, ecological, geological, geomorphological and morphological aspects;
  ii. the natural movement of water and sediment including hydrological and fluvial processes;
  iii. the location of the water body relative to its natural course;
  iv. the relative dominance of indigenous flora and fauna;
  v. the presence of culturally significant species; vi. the colour of the water; and
  vi. the clarity of the water.
- They may be freshwater management units with exceptional, natural, and iconic aesthetic features.
14.14. The NPSFM also reference outstanding freshwater bodies, which are defined as “those water bodies identified in a regional policy statement or regional plan as having outstanding values, including ecological, landscape, recreational and spiritual values.” High Naturalness Water Bodies fall under this definition and the CLWRP should therefore provide for Objectives A2(a) and B4 in the NPSFM, regarding the quality and quantity of fresh water, by “protecting significant values of outstanding freshwater bodies”.

Submissions and Analysis

14.15. The Orari River Protection Group\textsuperscript{1707} particularly endorses the inclusion of the Orari gorge as an area of high naturalness to ensure the water quality remains in its natural state because of its direct impact on Geraldine’s drinking water supply intake as well as biodiversity in the upper river catchment.

14.16. The Orari River Protection Group\textsuperscript{1708} also states that a new policy should be included that prevents further intensification (by irrigation or forestry) to protect from deterioration of water quality in these high naturalness waterbodies. It seeks that this is included in Section 4.6, for which it quotes the operative plan’s wording rather than the wording in PC7. This does not affect the intent of this submission point.

14.17. We consider that there are already relevant policies in the CLWRP to address both protection of the High Naturalness Water Body and to manage farming and intensification in general. Further policy direction to restrict land uses near to High Naturalness Water Bodies is not recommended.

14.18. The Bonifacio Family Trust\textsuperscript{1709} and Springfield Partnership Ltd\textsuperscript{1710} seek amendment to the High Naturalness Water Body boundary for Milford Lagoon and Orakipoa Creek.

14.19. The Bonifacio Family Trust\textsuperscript{1711} submits it should extend from the mouth of the Lagoon to Milford Lagoon Road, not Orakipoa Island Road. It does not provide reasons as to why the high naturalness water body area should not extend to the Orakipoa Island Road. We understand that the Orakipoa Creek runs alongside the submitter’s farming property boundary, but in the absence of any reasons to make the change from the submitter, do not recommend the deletion of this part of the High Naturalness Water Body.

14.20. Springfield Partnership Ltd believes the High Naturalness Water Body boundary for Milford Lagoon and Orakipoa Creek should only extend to the confluence of the Orakipaoa and Burke Creek. It believes that past this confluence, the water body should not be identified as being of High Naturalness because the Tuamatakahau Stream was diverted into the Temuka River and no longer follows this channel.

14.21. We consider that the diversion of the Tuamatakahau Stream is not relevant, as we understand that it is upstream of the proposed High Naturalness Water Body. The submitter’s local knowledge would be welcome to clarify this.

\textsuperscript{1707} PC7-551.6
\textsuperscript{1708} PC7-551.7, PC7-551.8
\textsuperscript{1709} PC7-336.13
\textsuperscript{1710} PC7-306.5
\textsuperscript{1711} PC7-336.13
14.22. The Bonifacio Family Trust\textsuperscript{1712} seeks amendment to the rules and conditions governing the opening of the Opihi River mouth to account for coastal egression and subsequent impacts on the Milford Lagoon. It believes this is necessary because coastal egression has changed the functioning of the mouth in relation to the Lagoon system. This has resulted in frequent inundation of biodiversity planting being undertaken in partnership with Environment Canterbury. They consider taking account for coastal egression would result in improved breeding habitat for whitebait and less property damage to owners at the Milford Huts and surrounding farmland.

14.23. The submission by the Bonifacio Family Trust\textsuperscript{1723} aligns with biodiversity and coastal management issues for Milford Lagoon. Although this is helpful to highlight for potential future work to manage the Lagoon and its opening, we consider that the submission does not relate to whether the water body is classified as a High Naturalness Water Body.

14.24. Orapikao Water Users\textsuperscript{1714} and Federated Farmers\textsuperscript{1715} state that there was no consultation with local farmers and water users, prior to inclusion of the Orakipoa Creek from the Milford Lagoon mouth to Orakipoa Island Road in the ZIPA. Both submitters consider there should have been consultation prior to the classification of the waterbody, as several water users are reliant on the taking of water in this area. Orapikaoa Water Users\textsuperscript{1716} highlights the importance of transparency and seeks clarification of the values and reasons for the High Naturalness Water Body classification as it believes this will help enable community support and enhancement. Orapikaoa Water Users request the following policy is included in the plan:

\textit{In considering whether to grant or refuse applications for replacement of existing consents, the consent authority will:}

\begin{itemize}
  \item \texttt{a. consider whether all reasonable attempts to meet the efficiency expectations of this Section have been undertaken;}
  \item \texttt{b. recognise the value of the investment of the existing consent holder; and}
  \item \texttt{c. maintain the inclusion of the consent, if granted, in any allocation limits and priority bands on the waterbody concerned.}
\end{itemize}

14.25. Federated Farmers supports Orapikaoa Water Users submission and seeks amendment to delete the Milford Lagoon and Oraipoa Creek water body from Table 14.8, unless the rights of existing water consent holders are safeguarded.

14.26. The draft ZIPA for the OTOP area, as revised 21 September 2018, states that the Milford Lagoon and the Orakipoa Creek should be considered high naturalness waterbodies for their cultural and ecological significance. There is no reference made to the extent of consultation behind the change. Similarly, there does not appear to be acknowledgement of existing water takes that may be affected by the quite directive Policy 4.6. We do not consider a lack of direct consultation, of itself, a sufficient reason to remove the area from the listing. Within the Orari-Opihi groundwater allocation zone, there is groundwater available in the T block which is intended to be used by people surrendering surface water or stream depleting groundwater takes. This groundwater availability will help ensure that landowners who rely on surface water takes, will still be able to continue to irrigate their properties. We are therefore confident that the availability of deep groundwater may be a suitable and viable alternative

\textsuperscript{1712} PC7-336.14
\textsuperscript{1713} PC7-336.14
\textsuperscript{1714} PC7-165.13
\textsuperscript{1715} PC7-430.287
\textsuperscript{1716} PC7-165.13
Use of Te Reo

Submissions and Analysis

14.27. L Sandford\textsuperscript{1717} considers the use of both Te Reo and English in the same document results in a document that is complex for plan users to interpret. The submitter seeks the document is amended to remove Te Reo, or alternatively separate versions of the plan in Te Reo and English should be available. The use of Te Reo and English in PC7 is similar to other sections of the LWRP. We note that Section 1 of the LWRP provides descriptions of many of the terms referred to in the submission and provides context for plan users. Accordingly, we recommend the rejection of this submission point.

Emerging Contaminants

Submissions and Analysis

14.28. H Woolstencroft\textsuperscript{1718} considers Part B of PC7 should include a stronger directive to monitor and investigate other contaminants that have the potential to cause degradation of water quality. We agree with the submitter that there are other contaminants that have the potential to cause degradation of water quality. The contaminants referred to in PC7 are the same as those identified as ‘attributes’ in the NPSFM. The NPSFM is largely focused on attributes that are characteristics or properties of freshwater that need to be managed for a particular value. There is no requirement in the NPSFM to monitor and investigate other contaminants as sought by the submitter, and accordingly we recommend this submission point be rejected.

Stormwater

Submissions and Analysis

14.29. Ardleigh Deer Farm\textsuperscript{1719} notes that little is known about stormwater runoff and the impact contaminants entrained in stormwater have on Waitarakao/Washdyke Lagoon. It has not sought any relief in relation to their concern.

14.30. We note that the OTOP ZIPA includes recommendations for ongoing actions to support improved outcomes for the Waitarakao/Washdyke Lagoon catchment.

\textsuperscript{1717} PC7-565.1
\textsuperscript{1718} PC7-553.3
\textsuperscript{1719} PC7-242.5
Catchment Groups

Submissions and Analysis

14.31. McFarlane Agriculture Ltd & McFlynn Potatoes Ltd\textsuperscript{1720} state that because many of the outcomes in Part B of PC7 will be driven by on the ground actions and decisions, they seek that catchment groups should act as advisory panels on determining actions to result in outcomes. The OTOP ZC recommends the support of a number of non-regulatory actions to assist in achieving freshwater outcomes. We consider the ZC will provide the driving force to champion non-regulatory methods and behavior change going forward. Given this, we consider the relief requested by the submitter is already provided in part.

Plan monitoring and review

Submissions and Analysis

14.32. DairyNZ\textsuperscript{1721} seeks a new policy is inserted into Part B of PC7 that largely replicates the plan review and reporting requirements in proposed Policy 8.4.35 in Part C of PC7. In a similar vein, Ballance\textsuperscript{1722} seeks a new provision to allow for a comprehensive monitoring program and regular review and revision of planned reductions to ensure any changes in scientific understanding of the conditions and capabilities is reflected. As detailed in Part 4 of this Section 42A Report, we consider the intent of proposed Policy 8.4.35 is to formalise the plan review process required by Section 35 of the RMA. Proposed Policy 8.4.35 is also specific to the potential issues facing Christchurch’s deep aquifers as a result of activities undertaken in the Waimakariri sub-region.

14.33. We do not consider a policy replicating the requirements of Section 35 of the RMA in the OTOP sub-region is necessary. Environment Canterbury is obliged to meet the requirements of Section 35 of the RMA which requires that the local authority, among other things, monitor the state of the environment, monitor the efficiency and effectiveness of policies, rules and methods in plans and no more than every five years, make reviews available to the public. As the relief sought by DairyNZ and Ballance is already provided by Section 35 of the RMA, we recommend these submission points be rejected.

\textsuperscript{1720} PC7-278.4
\textsuperscript{1721} PC7-357.50
Part 5: Submissions on Part C of PC7: Waimakariri

1. Executive summary

1.1. The provisions in PC7 for the Waimakariri sub-region have been developed to implement the outcomes the community arrived at through the Waimakariri ZC process. Those community outcomes and preferences are set out in the ZIPA, and typically involved a careful weighing up of environmental, social and economic factors.

1.2. Several hundred submissions were lodged on Part C of PC7, reflecting the considerable public interest on the proposed provisions for the Waimakariri sub-region. Generally, most submitters are supportive of the intent for improved water quality and quantity within the sub-region. However, it is evident that the majority of submitters sit in one of three distinct camps – one which generally seeks fewer restrictions and a more flexible regime, one that seeks maintenance of the ‘status-quo’ and one that seeks greater levels of restriction and management.

1.3. Several matters commonly identified across many of these submissions include the potential impacts on Christchurch’s aquifers and drinking water, the appropriateness of the environmental flow and allocation regimes, whether the package of provisions for farming activities (particularly within the NPA) is a suitable method to achieve the desired water quality outcomes, and the timeframes for the implementation of the provisions.

1.4. As discussed within Parts 2 and 4 of this Section 42A Report, the 2017 amendment to the NPSFM and recent case-law reinforce that a greater focus on the concept of Te Mana o te Wai is required, specifically considering and recognising it in freshwater management. On this basis, several recommendations are made throughout this section to better align the provisions with Te Mana o te Wai. As a result, it is acknowledged that some recommendations move beyond what was originally envisaged by the Waimakariri ZC.

1.5. Key changes recommended within this section include:

- Substantial simplification of the Waimakariri provisions;
- The introduction of additional future increased minimum flows for some surface water bodies;
- Amendments to the provisions that allow existing water users to swap to ‘deep groundwater’ to better protect surface water flows; and
- Requirement for the total percentage reductions in nitrogen loss within the NPA be completed over a shorter timeframe, with consequential increases in the staged reductions for farming activities.
2. **Section 8 – Introduction/Overview\(^\text{1723}\)**

**Introduction**

1.1. This chapter of the Section 42A Report discusses the submissions made on the introductory text and new figures within Section 8 of the CLWRP.

1.2. Part C of PC7 amends the introduction to Section 8 and introduces the following changes:
   - Deletion of the existing Waimakariri sub-region figure and insertion of a new figure with the revised extent of the Waimakariri sub-regional boundary (Figure 1);
   - Amendments to the description of the Waimakariri sub-region;
   - Addition of the Waimakariri ZC ZIPA Community Outcomes;
   - Addition of the two FMUs, including descriptions of these FMUs and a new figure to show their extent (Figure 2); and
   - Addition of a description of what the provisions in Section 8 do.

**Submissions**

1.3. Eight submissions were received in relation to this section. Five submission points from three submitters support the changes, while three submitters request further amendments.

1.4. **Ravensdown\(^\text{1724}\)** supports the inclusion of a new figure for the Waimakariri sub-region, stating that it provides clarity and clearly identifies the area over which the section applies. It also considers that the description of what the plan does provides an accurate overview of the proposed provisions\(^\text{1725}\). It seeks that both sections of the introduction are retained as notified.

1.5. **Waimakariri NGF\(^\text{1726}\)** supports the identification of the two FMUs and their associated descriptions, and seek their retention.

1.6. **DairyNZ\(^\text{1727}\)** and **Ravensdown\(^\text{1728}\)** support the description of the ZC community outcomes and seek its retention.

1.7. **Federated Farmers\(^\text{1729}\)** considers that additional context is required in relation to, and following, the ninth outcome within the ZC community outcomes. It requests the following amendments to this description as follows:

   ...*a proportion of recharge to the deep aquifer system beneath Belfast and North Christchurch is likely to be derived from an area within the Waimakariri sub-region.*

   **Any effect on the aquifers below the main part of Christchurch is much less certain. It should also be noted that, currently, there is no evidence of elevated nitrate concentrations in Christchurch’s aquifers, that any effect would be long term (timeframe of 50 – 100 years) and,***

\(^{1723}\) This section of the report was prepared by Angela Fenemor.
\(^{1724}\) PC7-114.62
\(^{1725}\) PC7-114.64
\(^{1726}\) PC7-425.4
\(^{1727}\) PC7-357.10
\(^{1728}\) PC7-114.63
\(^{1729}\) PC7-430.69
even over that timeframe (assuming a worst case scenario), any increases in nitrate concentration would be below the Maximum Acceptable Value for safe drinking water.

1.8. The ZC community outcomes were lifted directly from the ZIPA, including the associated note for the ninth outcome. As this part of Section 8 simply restates the identified community outcomes within the ZIPA, we do not consider that it would be appropriate to insert additional information that is inconsistent with the style and level of detail included in this part of Section 8. Therefore, I recommend rejecting the relief sought.

1.9. HortNZ seeks amendments to the introductory text of Section 8 to acknowledge the horticultural activities within the Waimakariri sub-region and their importance to the wider national food security network. The submitter does not propose any specific wording.

1.10. While the description of the Waimakariri sub-region does include reference to ‘farming’, no descriptions of specific activities or land uses, or their contribution to the wider community, are covered. Given the diverse range of activities in the sub-region, we do not consider that a particular industry should be promoted, over the other types of activities and industries in the sub-region. On this basis, we recommend rejecting this submission point.

1.11. Bowden Environmental submits that the description of the Eyre River within the Northern Waimakariri Tributaries FMU is incorrect. It considers the headwaters of the Eyre River are located to the west and south of Oxford, rather than north-west of the town as stated within the introductory text. The submitter also states that the Eyre River is dry for most of the year and over the majority of its course rather than the “more limited description suggests”. The submitter considers that this description appears to lead into policies which incorrectly classify the Eyre River as a natural state waterbody. Given the above, Bowden Environmental requests that the description of the Eyre River is rewritten. No specific wording is proposed by the submitter.

1.12. We note that the technical reports supporting PC7 are consistent with the submission from Bowden Environmental, which acknowledge that the flow is intermittent (Megaughin and Hayward, 2016). We consider the description of the Eyre River proposed in Section 8 requires amendments to better reflect the intermittent nature of the river. From topographical maps, the Eyre River originates from the foothills that are located to the west and northwest of Oxford. We recommend that the submission from Bowden Environmental is accepted in part.

1.13. We note that the classification of the Eyre River as a natural state waterbody is discussed further in relation to submissions on Policy 8.4.5.

Recommendation

1.14. Amend the description of the Northern Waimakariri Tributaries FMU as per Appendix E.

---

1730 Page 12 of the Waimakariri ZIPA.
1731 PC7-356.47
1732 PC7-84.3
3. **Freshwater Outcomes and Freshwater Management Units**

**Overall Introduction and Provisions**

3.1. This chapter of the Section 42A Report discusses the submissions made on the provisions in Part C of PC7, which identify Freshwater Management Units (FMUs) and set Freshwater Outcomes. These include:

- Policy 8.4.4: Freshwater Management Units
- Policy 8.4.5: Natural State Waterbodies
- Table 8a Freshwater Outcomes for Waimakariri Sub-region Rivers
- Table 8b Freshwater Outcomes for Waimakariri Sub-region Lakes
- New definitions for ‘Ashley River/Rakahuri Freshwater Management Unit’ and ‘Northern Waimakariri Tributaries Freshwater Management Unit’
- Consequential changes to the planning maps to define FMUs and amend sub-region boundary between Section 8 (Waimakariri) and Section 12 (Central Canterbury Alpine Rivers) to include area of land adjacent to the Waimakariri River within Section 8.

3.2. To achieve the freshwater outcomes described in Tables 8a and 8b, the wider solutions package (as envisioned by the Waimakariri ZC) must be implemented. The solutions package includes non-regulatory interventions (such as catchment restoration activities) and the interventions and methods set out in PC7 (including water quality limits and targets and water allocation minimum flows and limits).

**Freshwater Management Units – Policy 8.4.4**

**Introduction and Provisions**

3.3. Policy 8.4.4 directs that freshwater in the sub-region is managed through the establishment of two FMUs and improvements in freshwater attained through setting of, and managing to, water quality and quantity limits for each area.

**Submissions and Analysis**

3.4. Federated Farmers\(^\text{1734}\), DairyNZ\(^\text{1735}\) and Waimakariri NGF\(^\text{1736}\) support the policy. Ravensdown\(^\text{1737}\) also supports the establishment of the two proposed FMUs but seeks changes to the policy to provide greater clarity that where limits (and targets) are being achieved, water quality (or quantity) maintenance, not improvement, is a valid resource management response. As such it seeks that the policy is amended as follows:

*Management of freshwater in the Waimakariri sub-region is achieved through the establishment of two Freshwater Management Units and the maintenance and improvements in freshwater quality and quantity attained through setting of, and managing to, water quality and quantity limits and targets for each area.*

---

\(^{1733}\) This section of the report was prepared by Angela Fenemor and Jarred Arthur.

\(^{1734}\) PC7-460.73

\(^{1735}\) PC7-357.11

\(^{1736}\) PC7-425.5

\(^{1737}\) PC7-114.66
3.5. We consider that the amendments proposed by Ravensdown are an improvement to the policy without changing the intent or outcomes sought. However, with reference to the Common Issues section of this report, we note that the proposed policy appears to be redundant as it duplicates the requirements of the NPSFM. The management regime anticipated by this policy is reflected in the remainder of the provisions in Section 8. As such, we recommend that proposed Policy 8.4.4 is deleted. If the Panel disagree with this recommendation, we note that the amendments suggested by Ravensdown are an improvement to the policy.

Natural State Waterbodies – Policy 8.4.5

Introduction and Provisions

3.6. Policy 8.4.5 proposes to classify View Hill Creek, Coopers Creek and the Eyre River upstream of the confluence of the Waimakariri River with the Eyre River Diversion as “Natural State water bodies” to preserve their high water quality \(^{1738}\).

Submissions and Analysis

3.7. Policy 8.4.5 received nine submissions, with two in support seeking the policy is retained as notified and one in opposition seeking that the policy is deleted in its entirety. DOC\(^{1739}\) supports the classification of the identified water bodies as it recognises that the headwaters of these water bodies largely occur on public conservation lands managed for conservation purposes with limited impact from land use activities. Fish & Game\(^{1740}\) also supports the classification, as it considers it will assist in their management, by clearly indicating the expected level of management to maintain their current state.

3.8. Waimakariri DC\(^{1741}\), and by reference to their submission, various Community Boards\(^{1742}\), notes that the definition of ‘Natural State water bodies’ is “rivers, lakes and natural wetlands within land administered for conservation purposes by the Department of Conservation”, but state that the identified rivers are not administered by DOC. The submitters are concerned that the classification may restrict works in the bed of these waterbodies, two of which are intermittent. They note, for example, that View Hill Stream and the Eyre River have multiple fords maintained by Waimakariri DC. The Eyre River has water and wastewater mains and a siphon underneath the stream bed for the stock water race system, on which this submitter undertakes regular maintenance. As such, they seek that the natural state water bodies classification is removed for View Hill Stream and the Eyre River.

3.9. Bowden Environmental\(^{1743}\) seeks that the Eyre River is removed from the policy, stating that it cannot be described as a natural state water body and many activities carried out in the bed may be curtailed if the classification is retained.

---

\(^{1738}\) Natural State waterbodies is a river classification and different to High Naturalness Waterbodies, which are included in Section 8.8 of the CLWRP (Waimakariri sub-region Section 8)

\(^{1739}\) PC7-160.47

\(^{1740}\) PC7-95.2

\(^{1741}\) PC7-3.10

\(^{1742}\) Kaiapoi-Tuahiwi Community Board (PC7-42.13), Woodend-Sefton Community Board (PC7-107.13), Oxford-Ohoka Community Board (PC7-148.12), Rangiora-Ashley Community Board (PC7-149.13)

\(^{1743}\) PC7-84.5
3.10. Federated Farmers\textsuperscript{1744} seeks the deletion of the policy in its entirety, as it does not consider this level of protection to be appropriate for these water bodies particularly since they are all ephemeral, and in the case of View Hill Creek and the Eyre River, typically flow for less than half of the year. The submitter also notes that this was not a matter considered by the Zone Committee.

3.11. In response to submissions from Bowden Environmental and Waimakariri DC, we note that there are no rules in the CLWRP or proposed in PC7 that prohibit activities in the beds of natural state water bodies.

3.12. We note that the CLWRP defines natural state water bodies as “means rivers, lakes and natural wetlands within land administered for conservation purposes by the Department of Conservation”. The region-wide freshwater outcome for natural state water bodies is set in Table 1a, where the outcome is that “Rivers are maintained in a natural state”. In the case of the Waimakariri sub-region, the CLWRP classification planning maps did not include waterbodies within the Waimakariri sub-region given this area was covered by the WRRP. Part C of PC7 introduces freshwater objectives for the Waimakariri sub-region that includes outcomes for different river types, and consequently, also includes river type classifications for waterbodies within the Waimakariri sub-region. The method for classifying the Waimakariri river network is set out in Duncan (2018), which describes a methodology which is consistent with the approach used for the CLWRP, meaning that the Waimakariri river classification is not inconsistent with the regional water classification. The criterion for a ‘natural state’ river is described in Duncan (2018) as:

\textit{River network lies entirely within DOC land} \geq 3,000,000 \text{ m}^2. \textit{Cuts off at the block boundary.}

3.13. The upper extents of the Eyre River and View Hill Stream fulfil this criterion, however under the operative WRRP, there is clear direction to protect the natural state of the water in lakes and rivers upstream of the confluence of the Waimakariri River with the Otukaikino Creek\textsuperscript{1746}. This includes View Hill Stream, Coopers Creek and the Eyre River only by virtue that the Eyre River Diversion discharges into the Waimakariri River upstream of the Otukaikino Creek. The Section 32 Report\textsuperscript{1747} for the WRRP states that there “are no discharges now that would not meet the natural state standard”.

3.14. The technical report describing the current state of water quality within Waimakariri sub-region\textsuperscript{1748} states that past sampling of the Eyre River and View Hill Stream indicates that the water quality of these systems is “good”, however we note that the sampling is limited. It is our view that these are not natural state water bodies downstream of DOC land and would caution categorising them as such given that the land is developed around the lower reaches.\textsuperscript{1749}

3.15. In response to the submission from Federated Farmers, we note that Megaughin and Hayward (2016) describe the Eyre River as having “permanent flow in the upper reaches but loses flow as it crosses the plains. The river usually dries before reaching Oxford and rarely flows along its full length”. Taking a pragmatic approach for managing these modified and ephemeral waterbodies, it is our view that the level of protection for these waterbodies proposed by PC7

\begin{footnotesize}
\begin{itemize}
\item \textsuperscript{1744} PC7-430.74
\item \textsuperscript{1745} Meaning that the natural quality of the water shall not be altered.
\item \textsuperscript{1746} Policy 6.1(a) of the WRRP.
\item \textsuperscript{1747} Section 3(b)(iv)(1), page 42 of the Section 32 Report for the WRRP.
\item \textsuperscript{1748} Greer \textit{et al} (2017)
\item \textsuperscript{1749} This paragraph was prepared by Jarred Arthur.
\end{itemize}
\end{footnotesize}
is not reflective of the current state. Classifying these waterbodies downstream of DOC land as “hill fed lower” (as already provided for in the PC7 planning maps) still provides methods to maintain existing good water quality (consistent with Objective A2 of the NPSFM). Taking into account the above information, we consider that proposed Policy 8.4.5 is inappropriate and recommend accepting submissions seeking its deletion.

**Recommendation**

3.16. That Policy 8.4.5 is deleted.

**Freshwater Outcomes**

**Introduction and Provisions**

3.17. Plan Change 7 proposes to insert the following Freshwater Outcome Tables (numbered section 8.6) specific to the Waimakariri Sub-region: proposed Table 8a – Freshwater Outcomes for Waimakariri Sub-region Rivers; and Table 8b - Freshwater Outcomes for Waimakariri Sub-region Lakes. These tables identify the outcomes sought for various attributes, relative to the FMU and type of river or lake.

3.18. The submissions are set out below in relation to each table.

**Table 8a – Submissions**

3.19. There are 16 submissions on Table 8a, with three in support and 13 submissions seeking amendments. DOC\(^{1750}\) support Table 8a, as it considers that the numeric attribute states are appropriate to ensure the water quality aspects of ecosystem health are provided for. Claxby Irrigation Limited\(^{1751}\) also support the adoption of attributes and outcomes in Table 8a.

3.20. Waimakariri DC\(^{1752}\) and by reference to its submission, various Community Boards\(^{1753}\), state that discharges from Waimakariri DC would be unlikely to meet the current “Spring-fed plains urban” attributes (for example, for emergent macrophyte cover, fine sediment cover, and *E. coli* levels) in Table 8a within the urban storm water areas of Rangiora, Kaiapoi, Woodend, and Oxford for Storm Water Network Consents (with applications that are lodged or soon to be lodged with the Council). This submitter suggests that attributes within the tables are set at achievable levels, based on practicable storm water improvements and investment by Waimakariri DC.

3.21. Fish & Game\(^{1754}\) seek that the ‘chlorophyll a’ outcome is reduced from 200 to 120 for hill-fed lower and spring-fed plains rivers.

---

\(^{1750}\) PC7-160.74

\(^{1751}\) PC7-433.21

\(^{1752}\) PC7-3.26

\(^{1753}\) Kaiapoi-Tuahiwi Community Board (PC7-42.29), Woodend-Sefton Community Board (PC7-107.29), Oxford-Ohoka Community Board (PC7-148.27), Rangiora-Ashley Community Board (PC7-149.29).

\(^{1754}\) PC7-95.54
3.22. DairyNZ\textsuperscript{1755} and Waimakariri NGF\textsuperscript{1756} seek that QMCI is replaced with MCI, because the 2007 MfE macroinvertebrate monitoring guidelines recommend MCI, rather than QMCI, for state of the environment monitoring.

3.23. DairyNZ\textsuperscript{1757} seek that the \textit{E. coli} attribute from the NPSFM is used (4 measures) rather than using only the median and 95\textsuperscript{th} percentile measures. It disagrees with only using two of the measures “\textit{for pragmatic reasons}”, noting that the technical report states that it may be compulsory to use all four national prescribed measures.

3.24. DairyNZ\textsuperscript{1758} also make comment about cyanobacteria mat cover, stating there is a need to be explicit about what maintaining current state means, and needs to take into account current variability. It is not clear what specific changes are sought in relation to this comment.

3.25. DairyNZ\textsuperscript{1759} also make comment about periphyton, stating that there is a need to define what ‘maintain’ is, taking into account that the current median has natural variability. It considers that there needs to be a clear definition as to what value (absolute deviation from the median) constitutes a deviation from the median value.

3.26. Ballance\textsuperscript{1760} seek that the values in Table 8a are replaced “\textit{with values that are robust and provide a measurable environmental outcome in accordance with that sought for Waimakariri Sub-region rivers}”. It notes that the Table is generally consistent with the outcomes sought in the region-wide Table 1a, but includes slightly lower outcome values for \textit{E. coli} in some locations, and in some locations no macrophyte outcome is set. While stating that it considers these to be “\textit{an appropriate response in principle}”, Ballance also state that the rationale for how these outcome values were derived and the scientific basis for them is unclear. The submitter states that because of the reliance on reference to Table 8a throughout the plan provisions it is critical to ensure that the identified outcomes are robust.

\textit{Analysis}

3.27. We do not support the relief sought by Waimakariri DC, and the Community Boards\textsuperscript{1761} to require attributes be set at achievable levels, based on practicable stormwater improvement and investment in infrastructure. We note that the process to set freshwater outcomes in Tables 8a and 8b aligns with NPSFM Policy A1 and the prescriptive NOF process set out in Policies CA1 to CA4 of the NPSFM. Freshwater attributes in Tables 8a and 8b are based on guidelines for protecting aquatic environments and should be a directive for continual improvements in infrastructure, as opposed to the state of infrastructure, or the level of investment by Waimakariri DC in infrastructure, determining appropriate numeric and narrative freshwater outcomes. Improvements in stormwater infrastructure should mean the attainment of freshwater outcomes by 2030 is more achievable. On this basis, we recommend the submission point made by Waimakariri DC is rejected.

3.28. Similarly, with regards to the submission point made by Ballance, we note that the numerical and narrative freshwater outcomes set out in Table 8a aligns with the NPSFM and prescriptive

\textsuperscript{1755} PC7-357.36
\textsuperscript{1756} PC7-425.28
\textsuperscript{1757} PC7-357.69
\textsuperscript{1758} PC7-357.70
\textsuperscript{1759} PC7-357.71
\textsuperscript{1760} PC7-441.23
\textsuperscript{1761} Kaiapoi-Tuahiwi Community Board (PC7-42.29), Woodend-Sefton Community Board (PC7-107.29), Oxford-Ohoka Community Board (PC7-148.27), Rangiora-Ashley Community Board (PC7-149.29).
NOF process. Numeric values are based on guidelines for protecting aquatic environments, the best available data when current state analyses were completed in 2016 and community values. Given this, we do not consider the values in Table 8a require replacement.

3.29. In response to the submission point raised by Fish & Game, we highlight that the freshwater outcomes in Table 8a are in-part informed by region-wide freshwater outcomes, already set out in Table 1a of the operative CLWRP. The Chlorophyll a outcomes in Table 8a for ‘spring-fed plains’ and ‘hill-fed-lower’ rivers in particular, align with those for the same river types in Table 1a that apply region-wide. Under the NPSFM, the proposed freshwater outcome for Chlorophyll a is reflective of the C band (above National Bottom Line), while the proposed change sought by Fish & Game is reflective of the B band. Fish & Game has not provided any technical information or justification to support the change sought, without which we are unable to assess whether the amendment sought would better achieve the objectives of the CLWRP or give effect to the NPSFM. As such, we recommend the submission point be rejected.

3.30. We do not support the submissions made by DairyNZ and Waimakariri NGF which seek the use of QMCI to be replaced with MCI. We acknowledge there may be differing scientific opinions on the matter, however we understand that QMCI is a more robust measure of macroinvertebrate community structure and health in streams, while MCI only measures presence-absence data and has more limited application in that it is unable to be used to calculate other ecological health metrics. Given the robustness and breadth of use provided by QMCI, including the ability to calculate MCI from data collected for the purpose of calculating QMCI (but not vice versa), we recommend the two submission points be rejected and the use of QMCI as proposed is retained.

3.31. DairyNZ seek clarification on what is meant by ‘maintain’ and the need to take into account ‘current’ variability in relation to the numeric attributes for cyanobacteria mat cover. We infer that in reference to ‘maintain current state’ the submitter is referring to the narrative attribute for ‘Natural State waterbodies’ to be ‘maintained in their natural state’. It is noted that this narrative attribute state for Natural State waterbodies is used throughout the CLWRP. While there are no numeric attributes set for Natural State waterbodies, we understand the numeric attributes for other river types do generally allow for “natural” variability. Therefore, we consider that ‘maintained in their natural state’ should account for seasonal variability, and to some degree, long-term changes in climate.

3.32. In response to a submission point made by DairyNZ relating to E. coli metrics, we acknowledge that there are four different metrics used in the NPSFM to determine attribute state. Two of the more commonly used metrics, being annual median and 95th percentile used in Table 8a, are easily calculated and relatively well understood by the general public. The other two metrics, which relate to the proportion of data exceeding two different risk thresholds, are more complex to assess and less readily understood being:
   a. Percentage exceedance over 540 E. coli/100mL; and
   b. Percentage exceedance over 260 E. coli/100mL

3.33. We note that the use of only 95th percentile and median E. coli metrics is adequate to categorise peak and general levels of microbial contamination in freshwater bodies respectively. It is no less stringent than the four metric NPSFM NOF attribute table in regard

---

1762 Such as percentage Ephemeroptera, Plecoptera and Trichoptera.
1763 This paragraph is authored by Jarred Arthur and Angela Fenemor.
1764 Including Table 1a, 11a, 14a (as proposed by PC7) and 15B(a).
to quantifying human health risks associated with the value of ‘human contact’ for recreation. It is a simpler approach and easier to interpret than the comparative four-attribute state table in the operative NPSFM. This is particularly important because protecting the value of human health for contact recreation is of considerable public interest. We recommend rejecting the submission from DairyNZ.

3.34. We note that the “cyanobacteria mat cover” attribute is missing the “%” measure. We recommend this omission is corrected.

Recommendation

3.35. That Table 8a is amended as per Appendix E.

Table 8b – Submissions

3.36. There are 19 submissions on Table 8b with four in support and 15 seeking amendments. DOC\textsuperscript{1765} support Table 8b, stating that the numeric attribute states are appropriate to ensure the water quality aspects of ecosystem health are provided for. Table 8b is also supported by DairyNZ\textsuperscript{1766} as it considers that the outcomes are generally consistent with the NPSFM and community values. Ballance\textsuperscript{1767} similarly support Table 8b, on the basis that it is consistent with the outcomes sought in the region-wide Table 1b in the operative CLWRP.

3.37. In relation to Table 8b, Waimakariri DC\textsuperscript{1768}, and by reference to its submission, various Community Boards\textsuperscript{1769}, seek clarification on whether attributes in this table, as they would apply to Lake Pegasus, would be used to set conditions in future resource consents. The submitters consider that, based on the 2009-2015 summary report of water quality prepared by Golder and Associates, some of the attributes are set at unobtainable levels, such as the Trophic Level Index. As such, the submitters seek that the attributes for Lake Pegasus are set the same as those for Tūtaepatu Lagoon.

3.38. Beef + Lamb\textsuperscript{1770} seek that Table 8b is amended “to provide for primary contact recreation for those sites where primary contact recreation is an identified value and during the periods where this activity occurs.”

3.39. Beef + Lamb\textsuperscript{1771} state that \textit{E. coli} attributes should apply during flows below medium flow during the bathing season, and should exclude high flow events and periods which fall outside the bathing season.

3.40. Beef + Lamb\textsuperscript{1772} seek that trophic level indices, Chlorophyll a and cyanobacteria outcomes reflect “water quality at the date of notification, or if degraded should reflect the instream outcomes required to provide for achievement of trophic state such as macroinvertebrate

---

\textsuperscript{1765} PC7-160.75
\textsuperscript{1766} PC7-357.39
\textsuperscript{1767} PC7-441.24
\textsuperscript{1768} PC7-3.28
\textsuperscript{1769} Kaiapoi-Tuahiwi Community Board, Woodend-Sefton Community Board, Oxford-Ohoka Community Board, Rangiora-Ashley Community Board.
\textsuperscript{1770} PC7-214.99
\textsuperscript{1771} PC7-214.100
\textsuperscript{1772} PC7-214.101
health, and/or periphyton outcomes, consistent with the requirements of the NPSFM including consideration of economic and cultural impacts.”

Analysis

3.41. We do not support the relief sought by Waimakariri DC and by reference to its submission, various Community Boards\textsuperscript{1773}, that seek attributes for Lake Pegasus are aligned with those for Tūtaepatu Lagoon. Tūtaepatu Lagoon and Lake Pegasus are different ecosystems and function for different purposes (Lake Pegasus is an artificial lake primarily used for contact recreation while Tūtaepatu Lagoon is a shallow coastal lake with high cultural and biodiversity values), as such we consider using the same numerical attributes for each would be inappropriate. On this basis, we recommend this submission point (and those from associated Community Boards) be rejected.

3.42. Waimakariri DC also seek clarification on whether attributes in Table 8b will be used to set conditions for future resource consents. In response, we highlight that Strategic Policy 4.1 of the CLWRP seeks that water bodies will meet the freshwater outcomes set in sub-region sections within specified timeframes, in the case of the Waimakariri sub-region this is 2030. Strategic Policy 4.7 directs resource consents to not be granted if the granting of the resource consent will cause a water quality or quantity limit in a sub-regional section to be breached or further overallocation to occur. Water quality limits set out the maximum amount of a resource that can be allocated to those using the resource in the catchment, while targets are set for catchments where a resource has been overallocated. Table 8-6 sets out the water quality limits and targets for Waimakariri Lakes. Given this, we consider the freshwater outcomes set out in Table 8b are not intended to be used to set conditions in resource consents, however the granting of a resource consent should not prevent the achievement of freshwater outcomes in water bodies by 2030 as required by CLWRP Strategic Policy 4.1.

3.43. With respect to Beef + Lamb’s submission relating to the application of \textit{E. coli} attributes, we understand Beef + Lamb seeks \textit{E. coli} attributes to only apply during the bathing season where flows are below medium flow. We note that the achievement of the \textit{E. coli} attribute will be determined through analysis of 5-yearly monitoring data. This is consistent with the guidance contained in Appendix 2 of the NPSFM for \textit{E. coli} which states that:

\textit{Attribute state should be determined by using a minimum of 60 samples over a maximum of 5 years, collected on a regular basis regardless of weather and flow conditions. However, where a sample has been missed due to adverse weather or error, attribute state may be determined using samples over a longer timeframe.}

3.44. The attainment of the \textit{E. coli} attribute will be based on the 95\textsuperscript{th} percentile and median of sample results for the previous 5-year period accommodating infrequent or rare high flow events regardless of timing of the bathing season. This is adequate to categorise peak and general levels of microbial contamination in freshwater bodies regardless of season. The SFRG outcome is more directly relevant to swimming water quality with \textit{E. coli} results only obtained during the bathing season (summer) and omitting high flow events. On this basis, we do not recommend the \textit{E. coli} attribute is amended to only apply in specific conditions as sought by Beef + Lamb.

\textsuperscript{1773} Kaipoi-Tuahiwi Community Board (PC7-42.30, PC7-42.31), Woodend-Sefton Community Board (PC7-107.30, PC7-107.31), Oxford-Ohoka Community Board, Rangiora-Ashley Community Board (PC7-149.30, PC7-149.31).
3.45. Beef + Lamb also seek amendments to freshwater outcomes related to trophic level indices to reflect water quality at the date of notification, or if degraded to reflect outcomes required to provide achievement of a trophic state such as macroinvertebrate health and/or periphyton outcomes. Beef + Lamb has not identified specific amendments to Table 8b as part of its submission. We highlight that the freshwater outcomes are numeric and narrative attribute states set to achieve the objectives of the CLWRP and NPSFM, and the outcomes sought by the community. Water quality limits and targets for Waimakariri Lakes contained in Table 8-6 (and assessed in Part 5 Section 6 of this Section 42A Report) are set to achieve the freshwater outcomes.

3.46. As defined by the NPSFM and described above, a ‘limit’ sets out the maximum amount of a resource available, which allows a freshwater objective to be met. Where a resource exceeds a limit set by a rule or is being used where a freshwater outcome is not being met, ‘targets’ are used to address overallocation. As such, the freshwater outcomes should not be set to reflect water quality at the date of notification, when a key objective is to improve water quality. The proposed freshwater outcomes in Table 8b are based on the best available data when current state analysis was completed for the Waimakariri sub-regional planning process in 2016. Data for many lakes in the Waimakariri sub-region was sparse and limits were often set in accordance with the best available guidelines (e.g. the NOF Attribute Tables in Appendix 2 of the NPSFM). On this basis, we recommend the submission point made by Beef + Lamb be rejected.

3.47. We note that the measure for the Chlorophyll a indicator requires a minor correction to read “mg/m^3”.

Recommendation

3.48. That Table 8b is amended as per Appendix E.
4. Cultural

General

Introduction and Provisions

4.1. This chapter of the Section 42A Report discusses the submissions made on the policies in Part C of PC7, which propose specific direction under the sub-heading of ‘Tangata Whenua’. These read:

8.4.6 - Management of freshwater, and the uses to which it is put in the Waimakariri Sub-region, supports the exercise of kaitiakitanga and the abundance of freshwater mahinga kai species that are safe to gather, harvest, consume and use.

8.4.7 - Protect wāhi tapu and wāhi taonga in the Waimakariri Sub-region by avoiding as a first priority, and only where avoidance is impracticable requiring, adverse effects of activities on sites of wāhi tapu and wāhi taonga to be minimised.

8.4.8 - Protect mahinga kai values for all lakes, rivers, wetlands and springs (waipuna) through close evaluation of any actions and timeframes described in the Farm Environment Plan when considering applications for resource consent for farming activities.

8.4.9 - Recognise and provide for the cultural importance of the waterbodies within the Waimakariri Sub-region to Ngāi Tūāhuriri Rūnanga by:
   a. improving the quality of water in groundwater, and in hill-fed and spring-fed rivers; and
   b. improving flows in hill-fed and spring-fed rivers; and
   c. reserving an allocation of water from the Cam River/Ruatanuiha, Ashley River/Rakahuri, and Silverstream for mahinga kai enhancement purposes; and
   d. extending the region-wide stock exclusion rules to springs (waipuna) and other surface waterbodies

Submissions

4.2. DOC support these policies as they recognise the importance of freshwater resources to tangata whenua. Fish & Game also support the policies as it considers that there are a number of shared freshwater values that can be maintained or enhanced through its implementation. Ngāi Tūāhuriri Rūnanga also support these policies because they provide support for mahinga kai and mahinga kai use of water.

4.3. Beef + Lamb oppose the use of the word ‘avoid’ within Policy 8.4.7, noting that it is a strong word that may have the effect of prohibiting activities. The submitter does not consider this to be the intent of PC7. As such it seeks that “avoid“ is deleted from the policy and replaced “with a more appropriate term which would reflect the intent of the Plan Change”.

---

1774 This section of the report was prepared by Angela Fenemor (Planner) and Mark Megaughin (Hydrology)
1775 PC7-160.48, PC7-160.49, PC7-160.50, PC7-160.51
1776 PC7-95.3, PC7-95.4, PC7-95.6, PC7-95.7
1777 PC7-399.30
1778 PC7-214.68
4.4. Beef + Lamb\textsuperscript{1779} seek that Policy 8.4.8 is amended to remove the word “close”. No specific reason is given for this change.

4.5. A number of submissions have been received on clause (c) of Policy 8.4.9 and the allocation of water from the Cam River/Ruatanuiwha, Ashley River/Rakahuri and Silverstream for mahinga kai enhancement purposes. The submissions on clause (c) of Policy 8.4.9 have been assessed alongside submissions on Rules 8.5.6 to 8.5.8 and Table 8-3 in the following section of this report.

4.6. Beef + Lamb\textsuperscript{1780} oppose clause (d) of Policy 8.4.9, which, in order to recognise and provide for the cultural importance of the sub-region’s waterbodies, directs that the stock exclusion provisions are extended to include springs (waipuna) and other surface waterbodies. Federated Farmers\textsuperscript{1781} also seek that clause (d) is deleted until sufficient clarity is provided. It considers the current wording is too vague as it could include any surface water body, permanent or temporary. It is noted that consideration of the proposed stock exclusion provisions is set out in Part 5, Section 8 of this report\textsuperscript{1782} and therefore these submissions points are not considered further here.

\textit{Analysis}

4.7. Beef + Lamb oppose including the term ‘avoid’ in the policies as it may have the effect of prohibiting activities, which it states does not appear to be the intent of PC7. We consider this does not have an effect of prohibiting activities and this is reflected in both the region-wide rules and the rules proposed by PC7, where the proposed provisions provide a consenting pathway for activities that may affect sites of wāhi tapu and wāhi taonga (including the take and use of water, activities in the bed of lakes and rivers and the discharge of contaminants). However, we consider that Policy 8.4.7 provides strong direction that persons undertaking activities that could adversely affect wāhi taonga and wāhi tapu make considerable efforts to avoid those effects but recognises that in some circumstances this may not be possible and therefore provides guidance to minimise effects.

4.8. In response to Beef + Lamb’s request to amend Policy 8.4.8 to remove the term ‘close’, as no reasons have been provided, we are unclear why this should be amended. Without further explanation of the reasons, we do not recommend any changes in response to this submission.

4.9. As set out in the Common Issues section relating to the drafting style of PC7, we note that there is repetition within the Section 8 policies and the region-wide policies. While no submission has sought that the policies be merged or deleted, we suggest that a simpler approach to plan drafting would be a more effective way of achieving the CLWRP objectives, and consequently recommend a number of changes to these policies.

\textit{Recommendation}

4.10. That Policy 8.4.8 is deleted and Policy 8.4.7 is amended as per Appendix E.

\textsuperscript{1779} PC7-214.68
\textsuperscript{1780} PC7-214.70
\textsuperscript{1781} PC7-430.317
\textsuperscript{1782} From paragraphs 6.354
Mahinga Kai Allocation

Introduction and Provisions

4.11. This section of the Section 42A Report discusses the submissions made on provisions relating to the allocation of water for mahinga kai enhancement in Part C of PC7. The provisions include:

- Clause (c) of Policy 8.4.9 which states: reserving an allocation of water from the Cam River/Ruataniwha, Ashley River/Rakahuri and Silverstream for mahinga kai enhancement purposes
- Policy 8.4.13 which directs that the delivery of mahinga kai outcomes for Ngāi Tūahuriri Rūnanga and several rivers within the Waimakariri sub-region will be assisted through additional requirements for mahinga kai enhancement consent applications.
- Rules 8.5.6 to 8.5.8 which provide for the taking and use of surface water for mahinga kai enhancement.
- Table 8-3 sets out the minimum flow and allocation limits for the Ashley River/Rakahuri, Cam River/Ruataniwha and Silverstream for mahinga kai enhancement purposes.

4.12. Rule 8.5.6 provides a restricted discretionary activity pathway for the taking and use of surface water for mahinga kai enhancement provided the application is accompanied by a CIA and the take, in addition to all existing takes, does not result in an exceedance of any environmental flow or allocation limit in Table 8-3. Eleven matters of discretion are included within Rule 8.5.6.

4.13. If a consent application does not include a CIA, the activity becomes non-complying in accordance with Rule 8.5.7. Furthermore, if the proposed take results in the breach of an environmental flow or allocation limit in Table 8-3, the take is a prohibited activity in accordance with Rule 8.5.8.

4.14. Water used for mahinga kai enhancement purposes is not defined or constrained, so it can be assessed on a case by case basis. However, examples of mahinga kai enhancement activities could include (but may not be restricted to):

- Allowing water to remain instream where this contributes to mahinga kai enhancement and not used for extraction downstream;
- Reinstating or creating wetlands;
- Reintroducing, relocating or farming indigenous species; and/or
- Creating substitute habitats using artificial waterways.

4.15. The RMA does not authorise a regional council to include provisions in a plan that would set aside allocation for exclusive use by a person or group of people. Accordingly, any person is entitled to apply for a water take permit for mahinga kai enhancement purposes, including persons with no affiliation to mana whenua.

4.16. More than 20 submissions were received on the policies, rules and flow and allocation table that provide for the allocation of surface water for mahinga kai enhancements. For the
purpose of this section, the submissions have been grouped into and considered according to the following topics:

- Supporting submissions
- Submissions seeking the deletion of the provisions
- Submissions seeking amendments to the provisions

**Supporting submissions**

4.17. A McGregor, Avon-Otakaro Network, and Styx Living Laboratory Trust\(^{1783}\) support the general concept of allocating of water for mahinga kai enhancement and other catchment restoration activities. DOC and Fish & Game support Policy 8.4.9, with the latter submitter also seeking the retention of Policy 8.4.13. Seven submitters specifically support the proposed mahinga kai flow and allocation limits in Table 8-3, with these submitters seeking that the provisions be retained as notified\(^{1784}\).

4.18. DairyNZ\(^{1785}\) support Rule 8.5.6 and consider that the activity status and listed matters of discretion for the enhancement of mahinga kai are appropriate.

4.19. Overall, Ngāi Tūāhuriri Rūnanga\(^{1786}\) supports allocations for mahinga kai enhancement and the requirement for any resource consent granted under the relevant rules to be consistent with their kaitiakitanga responsibilities. However, as discussed below, Ngāi Tūāhuriri Rūnanga seek further amendments to Rules 8.5.6 to 8.5.8 as they consider these provisions “do not go far enough”.

**Submissions seeking the deletion of the provisions**

**Submissions and analysis**

4.20. Federated Farmers\(^{1787}\) oppose clause (c) of Policy 8.4.9, 8.4.13 and Rules 8.5.6, 8.5.7, 8.5.8. It states that further discussion and consideration is required for this allocation, including what it is to be used for, how it is to be used and who can apply, so that other water users and the wider community “understands this allocation and supports it”. It seeks that clause (c) of Policy 8.4.9, Policy 8.4.13 and Rules 8.5.6 – 8.5.8 are deleted until greater clarity is provided. Federated Farmers states that this requested information is “crucial”, especially if there are impacts on the reliability of supply for other users.

4.21. We consider that the purpose of the allocation is sufficiently clear. Policy 8.4.9 seeks to recognise and provide for the cultural importance of waterbodies to Ngāi Tūāhuriri Rūnanga and the allocation is for mahinga kai enhancement. There is no specific direction that only particular persons or organisations may apply to use this allocation as anyone can apply to use it for this purpose. We do not consider this needs further clarification as this is inherent in the RMA.

\(^{1783}\) A McGregor (PC7-98.6, PC7-98.10), Avon-Otakaro Network (PC7-91.3), Styx Living Laboratory Trust (PC7-205.15)

\(^{1784}\) DOC (PC7-160.51, PC7-160.55), Fish & Game (PC7-95.6, PC7-95.45), Oxford-Ohoka Community Board (PC7-148.32), Rangiora-Ashley Community Board (149.34), Waimakariri DC (PC7-3.31), Woodend-Sefton Community Board (PC7-107.34), Kaiapoi-Tuahiwi Community Board (PC7-42.34)

\(^{1785}\) pC7-357.30

\(^{1786}\) PC7-399.37, PC7-399.38, PC7-399.39

\(^{1787}\) PC7-430.75, PC7-430.106, PC7-430.107, PC7-430.108
4.22. Federated Farmers consider that this additional clarification is critical if there are impacts on the reliability of supply of other water users. We note that no new water is being made available for mahinga kai allocation. Rather, the proposed mahinga kai allocations reserve some of the unallocated water within the current allocation system (under the WRRP and CLWRP) for this purpose. Therefore, the reservation of an allocation for mahinga kai enhancement will not have an impact on any water users’ reliability although existing users with water takes from the Ashley River/Rakahuri, Cam River/Ruataniwha and Silverstream may experience reduced reliability as a result of other PC7 provisions\textsuperscript{1788}. We do not consider that the concerns raised by Federated Farmers justify the deletion of the provisions, and recommend rejecting these submission points on this basis.

Submissions seeking amendments to the provisions

Submissions

4.23. R Stalker\textsuperscript{1789} supports an allocation being provided for mahinga kai but seeks that the allocation limit proposed for the Cam River/Ruataniwha is reassessed. The submitter considers that the allocation of 350 L/s for Cam River/Ruataniwha is too high and that the flows which the 175 L/s allocation are deducted from are “not representative of the actual flow of the stream”. Mr Stalker considers that over-estimating available water reduces reliability of irrigation and risks the investment made in such irrigation. The submitter seeks that the allocation limit is reset, with the mahinga kai allocation being set at the amount of water between the current irrigation limits and the revised upper allocation limit.

4.24. Forest & Bird consider that Policy 8.4.13 is uncertain as to whether water allocated for the enhancement of mahinga kai could be used for other purposes, and whether or not alternative uses would achieve a better outcome. No specific relief for Policy 8.4.13 is provided within the submission and no alternative uses of the water are proposed\textsuperscript{1790}.

4.25. Federated Farmers has sought alternative relief if Rules 8.5.6, 8.5.7 and 8.5.8 are not deleted in their entirety. If these provisions are not deleted, Federated Farmers seek that an additional condition is added to Rule 8.5.6 to ensure the take does not result in decreased reliability of supply for other users, and a further matter of discretion to consider the provisions of any relevant WCO\textsuperscript{1791}. Should this secondary relief be adopted, the submitter requests that Rules 8.5.7 and 8.5.8 are retained as notified.

4.26. While Ngāi Tūāhuriri Rūnanga support the mahinga kai enhancement allocations, a number of amendments have been sought. Ngāi Tūāhuriri Rūnanga state that it would not be appropriate to require every resource consent application to obtain a CIA in accordance with Policy 8.4.13 and Rule 8.5.6\textsuperscript{1792}. The submitter considers that it would draw out the consenting process and place pressure on the relatively small number of CIA writers available to carry out the work. Instead, Ngāi Tūāhuriri Rūnanga recommends a “co-granting process” for mahinga kai use, where they take the lead role in decision making for these applications.

4.27. As such, the submitter requests that Policy 8.4.13 and condition (1) of Rule 8.5.6 are amended to replace the reference to a CIA with the requirement for a description of how the proposal

\textsuperscript{1788} Changes to some minimum flows and partial restrictions introduced.
\textsuperscript{1789} PC7-537.1
\textsuperscript{1790} PC7-472.80
\textsuperscript{1791} PC7-430.106
\textsuperscript{1792} PC7-399.42
“is consistent with the Ngāi Tūāhuriri kaitiakitanga responsibilities for upholding Te Mana o Te Wai and will protect or enhance mahinga kai values”.

4.28. Ngāi Tūāhuriri Rūnanga also note that a mahinga kai reserve is being made available to Ngāi Tūāhuriri Rūnanga through regeneration plans for the earthquake red zone, with the Courtney Stream running adjacent to this site, and close to the pā site of Wereta Tainui. They consider, given the cultural significance of the site, and proposed mahinga kai reserve, that it would be appropriate to include an allocation from Courtney Stream consistent with this. The submitter therefore seeks that Table 8-3 is amended to include an allocation of 200 L/s for mahinga kai enhancement from Courtenay Stream.

4.29. Ngāi Tūāhuriri Rūnanga seek an amendment to the Ashley River/Rakahuri allocation in Table 8-3. It seeks that the mahinga kai enhancement allocation moves from the B permit allocation into the A allocation over time. Ngāi Tūāhuriri Rūnanga consider that if there are efficiency improvements in ‘A’ permit allocations then, once the river has sufficient water, the mahinga kai enhancement water should be able to be taken from the A block.

Analysis

4.30. R Stalker is concerned about the potential impacts on the reliability of existing water takes from the Cam River/Ruataniwha of providing for an additional 175 L/s of water for mahinga kai enhancement, stating that the allocation is not based on the actual volume of water available. The reliability of some existing water takes from the Cam River/Ruataniwha will be affected by PC7, but this is due to the imposition of minimum flows (particularly if existing abstractors are not currently restricted) and pro-rata partial restrictions. The allocation of water for mahinga kai enhancement only affects the reliability for existing users if it is taken for out of stream purposes and only by an amount that was envisioned in the setting of the allocation limit in the original WRRP.

4.31. In response to Federated Farmers’ request for amendments to Rule 8.5.6, we consider that this is unnecessary as the allocation itself will not impact on the reliability of supply for existing water users, over and above any change in reliability experienced as a result of adhering to partial restrictions, or the allocation block becoming fully allocated. We note that matter of discretion (7) of Rule 8.5.6 provides discretion to consider any effects on any other authorised take or diversion. This will enable any potential direct interference effects from the surface water take point in close proximity to an existing take point to be assessed.

4.32. We note that the submission from Forest & Bird does not seek any specific amendments. Rather, the submitter questions whether water allocated for mahinga kai enhancement purposes could be used for a different purpose to achieve better environmental outcomes. The matters raised within the submission appear to relate to the wider framework for reserving allocation for mahinga kai enhancement, as set out within Policy 8.4.9, rather than Policy 8.4.13 which directs the information to be included in resource applications for this purpose. While the submitter has not proposed any further information or specific relief to address its concerns, we note that water allocations set aside for mahinga kai enhancement via improved flows instream are likely to result in better environmental outcomes as desired by the submitter. Water allocations to be used out of river to enhance mahinga kai will impact...
flows instream, however these allocations will be granted within existing environmental flow regimes (i.e. minimum flow and allocation limits) set to help protect aquatic environments. These may have no further flow-related environmental impact than if available water was allocated for other purposes. Given the above, we recommend rejecting this submission point.

4.33. Ngāi Tūāhuriri Rūnanga have suggested amendments to replace the requirement for a CIA with a “co-granting” process where it will undertake decision-making on consents. We note that the delegations related to decision-making on consents is outside the scope of PC7. As such, we recommend rejecting Ngāi Tūāhuriri Rūnanga’s request for a “co-granting” process.

4.34. We acknowledge the concerns raised by Ngāi Tūāhuriri Rūnanga about the availability of resources to complete a CIA and note there are other assessment tools available to assess the effects of a proposed activity on cultural values, including consultation with Ngāi Tūāhuriri Rūnanga and advice from MKT1797. We consider these are suitable mechanisms for iwi participation for non-notified resource consents, in lieu of preparing a CIA or the ability to delegate decision making to an iwi authority. We do have concerns with the enforceability of the condition proposed by Ngāi Tūāhuriri Rūnanga and therefore only recommend the submission is accepted in part. Where a consent application is not accompanied by a CIA, the activity is classified as non-complying under Rule 8.5.7. Deleting the requirement for an application to be accompanied by a CIA from the conditions of Rule 8.5.6 results in a consequential amendment to delete Rule 8.5.7.

4.35. In response to the request to include a mahinga kai enhancement allocation for the Courtney Stream, we consider that this is not appropriate as the current consented allocation from Courtney Stream is in excess of the proposed allocation limit. Allowing for further abstraction from an over-allocated catchment is inconsistent with Objective B2 of the NPSFM.

4.36. Finally, Ngāi Tūāhuriri Rūnanga seek that when there are efficiency improvements in ‘A’ permit allocations for the Ashley River/Rakahuri and the river has sufficient water, to move the mahinga kai enhancement allocation to the A permit allocation. We do not consider there is a method to provide this level of flexibility in the flow and allocation regime. Changing the A permit allocation in response to any efficiency gains would require an additional plan change, only after the efficiency gains are realised. Additionally, PC7 sets out methods to reduce the existing over-allocation of the Ashley River/Rakahuri with an aim to achieve this by 2032. Within this timeframe, it is expected there would be at least one review of the Section 8 provisions during which time any changes to the A permit allocation to provide for any mahinga kai enhancement allocation can be considered.

4.37. In reference to the Common Issues section of this report, we consider that Policy 8.4.9 requires some minor improvements for clarity and consistency across the CLWRP, and consider that Policy 8.4.13 does not provide any additional direction for a decision maker as it generally restates condition (1) of Rule 8.5.6. Additionally, as we recommend the removal of the requirement for applicants to prepare and submit a CIA, Policy 8.4.13 becomes largely redundant. We note that the recommended amendments to Rule 8.5.6 will ensure that cultural values are considered and assessed during the consenting process. However, we consider that further policy direction to protect or enhance mahinga kai is not required as these matters are already covered under Policy 8.4.6. Given the above, we recommend the deletion of Policy 8.4.13.

1797 MKT is a resource and environmental management advisory company established by six Ngai Tahu Papatipu Rūnanga to improve the recognition and protection of tāngata whenua values in their takiwā.
**Recommendation**

4.38. That Policy 8.4.9 and Rule 8.5.6 are amended as per Appendix E.

4.39. That Policy 8.4.13 and Rule 8.5.7 is deleted.

**Submissions seeking new cultural provisions**

4.40. Ngāi Tūāhuriri Rūnanga identify the Cam River/Ruataniwha as a significant waterbody with cultural, spiritual, historical and traditional values. The submitter considers that it is necessary for this waterbody and its tributaries adjacent to the Tuahiwi marae and reserve MR873 to receive special acknowledgement through the creation of a protection zone, similar to that proposed under PC7 for Te Aka Aka. It seeks the extent of the new protection zone to include the area within the Cam River, North Brook, South Brook and Middle Brook SWAZs that are shown as wetland on the Black Maps. To implement the zone, a new policy and rule framework is sought to restrict the use of land for intensive farming, and any activity that increases *E. coli* in waterbodies that are used, or historically have been able to be used, for mahinga kai within the area. No specific details or wording of the proposed provisions are included within the submission.

4.41. The introduction of a new protection zone would require new policies and rules, and amendments to the Planning Maps. We note that in the absence of any specific proposed provisions, or technical analysis, it is difficult to evaluate the viability of a new protection zone. Given the above, we do not recommend accepting this submission point.
5. Quantity

General

Introduction and Provisions

5.1. This section discusses the provisions in Part C of PC7 that propose a new framework for the management of water quantity within the Waimakariri sub-region.

5.2. Proposed Plan Change 7 to the CLWRP proposes to introduce new environmental flow and allocation regimes for waterbodies within the Waimakariri sub-region. These flow and allocation regimes include new minimum flows, allocation limits and partial restrictions for surface water abstractions, and allocation limits for groundwater.

5.3. Proposed Plan Change 7 to the CLWRP proposes to introduce new environmental flow and allocation regimes for the management of surface water (Tables 8-1 and 8-2), and new groundwater allocation limits (Table 8-4), within the Ashley River/Rakahuri and Northern Waimakariri Tributaries Freshwater Management Units. Plan Change 7 also proposes to set aside surface water allocation for mahinga kai purposes (Table 8-3).

5.4. Further guidance on abstraction of water is proposed through the introduction of seven new policies.

Submissions

5.5. This section of the report addresses the following provisions and submissions:
- General submissions on the water quantity provisions
- Submissions on water use efficiency provisions
- Submissions on the provisions for the transfer of water

5.6. Submissions on provisions related to the management of surface water and groundwater (including new flow and allocation limits) are assessed separately in Part 5 Section 6 and Part 5 Section 7 (respectively) of this report.

General submissions on the water quantity provisions

5.7. A number of submissions received are applicable to the wider package of water quantity provisions introduced within Part C of PC7. These submission points are either repeated against multiple provisions in Section 8, or they address the proposed water quantity management framework in its entirety. Any specific relief sought by the submitters on provisions which link to these general submission points is covered within the relevant sections below.

5.8. Many submitters generally support restrictions on new water allocation within the Waimakariri sub-region without direct reference any provisions in Section 8 of the CLWRP.

---

1798 This section of the report was prepared by Angela Fenemor (Planner), Mark Megaughin (Hydrology), Zeb Etheridge (Groundwater) and Jarred Arthur (Ecology)

1799 Policies 8.4.10 to 8.4.16

1800 For example; Barnes Family Farms Ltd (PC7-94.13), R Frankland (PC7-83.2), J Robertson (PC7-116.2)
5.9. A G Talbot supports new caps on water takes but requests further clarification of how the proposed limits will be implemented on the ground. The submitter seeks “action plans” for the implementation of the provisions. No specific provisions are addressed within the submission. We note that the proposed water quantity limits do not impose new limits on existing water permits. Rather, they amend the limits of allocation blocks within Section 8 of the CLWRP. Therefore, the new limits will be implemented, over time, through the provisions of the CLWRP, rather than via immediate “on the ground” actions. On this basis, we recommend rejecting this submission point.

5.10. Ngāi Tūāhuriri Rūnanga generally oppose the proposed environmental flow and allocation regime within PC7. The submitter considers that the proposed framework is inconsistent with the Treaty of Waitangi, NPSFM, CRPS, Ngāi Tahu Claims Settlement Act 1998 and Deed of Settlement, and the objectives and policies of the CLWRP. Ngāi Tūāhuriri Rūnanga seek amendments to ensure the proposed flow and allocation regime recognises and protects Te Mana o te Wai. These include a request for substantial reductions in allocation and increases to minimum flows, to align with the ecological and cultural flows that are included in the technical reports surrounding PC7. The submitter considers that allocation limits need to be reduced to an amount relative to the size of the subject waterbody, and on the basis of how often cultural flow is achieved. Alternatively, the submitter proposes that limits should be replaced by figures calculated relative to the MALF or natural average recharge of the waterbodies.

5.11. We note that there are opportunities to amend the flow and allocation limits proposed by PC7 to better align with Te Mana o te Wai (consistent with the commentary included in Part 2 of this report). Specific amendments to the flow and allocation tables are discussed in Part 5, Section 6 of this report.

5.12. Ngāi Tūāhuriri Rūnanga also seek that if any allocation is gained through efficiency improvements on farm (i.e. via more efficient irrigation and monitoring technology) that this water be returned to the environment until the allocation is appropriate for Te Mana o te Wai, where it can then be used to address other needs such as cultural flows. We note that the proposed provisions in Section 8 provide several mechanisms to reduce over-allocation and it is unclear what other methods are available to provide the relief sought by Ngāi Tūāhuriri Rūnanga. We note that if water permit holders have allocation available as a result of efficiency improvements to irrigate a larger area of land, a change of conditions will be required before the irrigation area is increased. There are difficulties in ‘clawing back’ allocation from consent holders that have unused water as a result of efficiency improvements, particularly if the consented allocation limit was calculated using Schedule 10 of the CLWRP. Taking into account the methods already included in the proposed plan provisions (i.e. Policies 8.4.16, 8.4.18 and 8.4.24), we do not recommend amending the provisions in response to this submission.

5.13. Bowden Environmental is concerned that the proposed allocation limits for Section 8 of the CLWRP have been determined from staff summation of current resource consent rates which, in the submitter’s view, have been incorrect in the past. The submitter considers any inaccuracies could unfairly restrict future renewals and requests amendments to the tables and rules which contain or otherwise reference these limits. It is our view that the allocation
limits and estimates of the current allocation have been prepared using the best available information. The methodologies, including the full list of resource consents within each surface water allocation zone is set out in the technical documents supporting PC7\textsuperscript{1805}. We note that that proposed rule framework provides for the replacement of a lawfully established take as a restricted discretionary activity\textsuperscript{1806}. Where an allocation zone is over-allocated, the replacement consent is non-complying activity\textsuperscript{1807}. As such, we do not consider that the allocation limits will restrict renewals. In the absence of evidence that the allocation limits and estimate of current allocation is incorrect, we recommend rejecting these submission points from Bowden Environmental.

5.14. D A Rankin submits on each rule within Section 8, however we note that the matters raised within the submission appear to be more relevant to the nutrient management provisions introduced in Part C of PC7, rather than those seeking to manage water quantity. As such, these submission points are not discussed further within this section and are instead addressed in Part 5, Section 8 of this report.

**Submissions on the swap provisions**

*Introduction and Provisions*

5.15. Part C of PC7 introduces several methods in Section 8 of the CLWRP to reduce over-allocation within the Waimakariri sub-region. For replacement water permits, PC7 proposes a new framework to provide the ability for consent holders to substitute an existing surface water or stream depleting groundwater take for a non-stream depleting take (i.e. from deep groundwater).

5.16. Provisions which enable the substitution of existing surface water or stream depleting groundwater takes for non-stream depleting sources exist under the operative CLWRP within parts of other sub-regions in Canterbury including Selwyn-Te Waihora, Ashburton\textsuperscript{1808}, and South-Coastal Canterbury. Part B of PC7 also proposes to introduce a similar framework within the OTOP sub-region.

5.17. Part C of PC7 proposes to enable this framework within the Waimakariri sub-region through the introduction of a new policy, two new rules and amendments to Table 8-4 in Section 8 of the CLWRP. The package of provisions also includes a new definition of ‘deep groundwater’.

5.18. Policy 8.4.15 directs that the over-allocation of surface water bodies will be reduced by establishing allocation limits for the take and use of deep groundwater, and only allowing applications to be made to take from these limits provided certain criteria are met.

5.19. Rule 8.5.12 provides for the take and use of groundwater that will replace an existing surface water or stream depleting take as a restricted discretionary activity. If one or more of the conditions of Rule 8.5.12 are unable to be met, the activity becomes prohibited in accordance with Rule 8.5.13.

5.20. Table 8-4 sets groundwater allocation limits for six groundwater allocation zones within the Waimakariri sub-region and includes limits for both A Permits and Transfer Permits.

---

\textsuperscript{1805} Vattala (2019); Lintott & Megaughin (2019)
\textsuperscript{1806} Rules 8.5.9 and 8.5.14
\textsuperscript{1807} Rules 8.5.10 and 8.5.15
\textsuperscript{1808} Within the Valetta and Mayfield-Hinds Groundwater Allocation Zones.
Submissions on the Transfer Permit Allocation in Table 8-4 are addressed in this section of the report, whereas submissions on the A Permit allocation are discussed in Part 5, Section 7 of this report.

Submissions and analysis

5.21. The submissions on the swap provisions have been grouped into and considered according to the following topics:

- General submissions applicable to all provisions
- Submissions on Policy 8.4.15
- Submissions on Rules 8.5.12 and 8.5.13
- Submissions on the Transfer Permit allocation in Table 8-4

General submissions applicable to all provisions

5.22. Aotearoa Water Action\(^{1809}\) opposes allowing abstractors to surrender stream-depleting groundwater and surface water takes in exchange for the right to abstract from deeper groundwater sources. It considers this approach is contrary to responsible guardianship of resources and can result in environmental damage.

5.23. We note that the proposed Transfer Allocation limit set in Table 8-4 is sufficiently sized to allow for the new groundwater permits to replace existing surface water and stream depleting abstractions from over-allocated SWAZs, and that the groundwater allocation limits are considered to be sustainable. The appropriateness of the allocation limits in Table 8-4 are discussed in Part 5, Section 7 of this report.

5.24. We also note that to ensure surface water flows are improved as a result of “swaps” to deep groundwater, it is important to ensure that any new groundwater permit does not deplete from the connected surface waterbodies. In response to submissions on the definition of deep groundwater, further technical modelling was undertaken to determine if “deep groundwater” could be amended to allow a greater rate of abstraction. The results of the modelling, set out in Appendix D.5, indicate that the proposed definition of “deep groundwater” did not sufficiently protect surface water flows and requires amendment to provide the intended level of protection. Taking into account the recommended refinements to the proposed definition, we consider that allowing the abstraction of groundwater from the Transfer Allocation as provided for in Rule 8.5.12 is sufficiently conservative to reduce abstractive pressure on overallocated SWAZs, within allocation limits set and therefore recommend the submission from Aotearoa Water Action is accepted in part.

Submissions on Policy 8.4.15

5.25. Six submissions were received on Policy 8.4.15. Three support Policy 8.4.15 and two oppose Policy 8.4.15 in its entirety.

5.26. Three submitters\(^{1810}\) support the replacement of stream-depleting groundwater with deep groundwater as provided within Policy 8.4.15 and seek that it is retained as notified.

\(^{1809}\) PC7-209.4
\(^{1810}\) DOC (PC7-160.56), Fish & Game (PC7-95.12), Ngāi Tūāhuriri Rūnanga (PC7-399.9)
5.27. Larundel Dairy Partnership oppose Policy 8.4.15 as it considers it is too directive and appears to “penalise” consent applicants who apply first (while the relevant water body remains over allocated) by requiring them to convert to deep groundwater. The submitter states that those who apply at a time when the water body is no longer over allocated will presumably fall outside the policy. Larundel Dairy Partnership seeks that Policy 8.4.15 is deleted, stating that the proposed amendments to the minimum flow regime will be a sufficient and fairer incentive to promote any changes to deep groundwater. Alternatively, the submitter supports the protection of takes affected by section 124 of the RMA.

5.28. Forest & Bird support the intent of Policy 8.4.15 but seek that the wording is amended to ensure it does not restrict the consideration of environmental effects as a determining factor for the grant or decline of consent applications.

5.29. We note there is no requirement for existing abstractors to convert to deep groundwater, however other proposed provisions within PC7 for the management of surface water (including higher minimum flows and the imposition of partial restrictions) may provide a greater incentive to swap an existing water permit for deep groundwater. Given that there are likely to be other drivers for abstractors to look for an alternative source of water, allowing the abstraction of deep groundwater does not appear to be a penalty. We do not recommend accepting the submission from Larundel Dairy Partnership.

5.30. It is unclear how the policy would restrict the consideration of environmental effects as a determining factor for deciding resource consents as per the submission from Forest & Bird. We note that the associated Rule 8.5.12 restricts the exercise of discretion to a number of key environmental considerations, and these matters generally reflect the regionwide rules which have been thoroughly tested through a plan hearing and appeals process, and implemented over the past seven years, with no indication that these matters do not enable a thorough assessment of the likely effects associated with the activity. We recommend rejecting the submission from Forest & Bird.

Submissions on Rules 8.5.12 and 8.5.13

5.31. Nine submissions from eight submitters were received on Rule 8.5.12. Two submissions support Rule 8.5.12 and seek its retention and two oppose the rule in its entirety.

5.32. Two submissions were received on Rule 8.5.13 requesting amendments.

5.33. Three submitters support the intent of Rule 8.5.12 to replace existing surface water or stream-depleting groundwater takes with deep groundwater. Two of these submitters seek that the proposed rule is retained as notified.\(^{1811}\)

5.34. Federated Farmers\(^{1812}\) consider that the prohibited activity status of Rule 8.5.13 is not appropriate for the replacement of existing permits. The submitter does not provide any further reasoning within the submission as to why it considers the activity status is not appropriate. The submitter requests that the activity status of Rule 8.5.13 is amended to non-complying.

5.35. Given the intent of these provisions is to reduce the over-allocation of surface water resources and improve flows, the granting of a replacement water permit that exceeds an allocation

---

\(^{1811}\) Ngāi Tūāhuriri Rūnanga (PC7-399.11), Fish & Game (PC7-95.33)

\(^{1812}\) PC7-430.115
limit or contributes to further stream depletion would likely undermine the freshwater outcomes proposed within Part C of PC7. On this basis, we consider the prohibited activity status is appropriate to ensure that any water permits granted under these provisions do not result in further over allocation of resources which is consistent with the requirements set out in Policy B5 of the NPSFM. Despite this, we note that non-compliance with condition (4) (or interference effects are acceptable in accordance with Schedule 12) is more appropriate at a non-complying activity and recommend that the submission from Federated Farmers is accepted in part.

5.36. DairyNZ considers that condition (5) of Rule 8.5.12 (requiring that a replacement water permit must replace a take from an over-allocated SWAZ) is not necessary. The submitter considers the intent of the proposed rule is presumably to reduce the impact of surface water or stream-depleting groundwater takes on surface water, and that over-allocation should be dealt with under separate rules. Accordingly, DairyNZ request the deletion of condition (5) of Rule 8.5.12. The submitter also seeks a new “clause” to be added to Rule 8.5.12 to specify that any new takes should not be from over-allocated zones, if this is not already provided for elsewhere in Section 8 of the CLWRP.

5.37. Within the Waimakariri sub-region, the transfer permit allocations are large enough to accommodate all surface water and stream depleting groundwater takes within each GAZ.

5.38. We consider that the concept of allowing consent holders outside of over-allocated catchments to swap to deep groundwater has merit and have undertaken an evaluation of the likely environmental outcomes of allowing this to occur. Transfer of surface water takes to groundwater has the potential to cause two adverse outcomes: well interference effects (both direct local and broader cumulative impacts) and an overall increase in stream depletion. Direct local well interference effects are managed via Schedule 12 of the CLWRP and are not considered further here. With regard to broader cumulative groundwater level effects, after considering the modelling results for the full allocation scenario (which represents a significant increase above current abstraction rates) presented in Etheridge (2019) we consider that water supply well reliabilities are unlikely to reduce significantly under the more modest groundwater abstraction that could occur under realistic scenarios for transfer from surface water to groundwater. On this basis, extension of the provisions for transfers to groundwater takes, to include all surface water catchments, is unlikely to cause significant adverse effects on groundwater levels.

5.39. Regarding stream depletion, the potential for an overall increase in stream depletion relates to the fact that surface water take rates are reduced under minimum flow conditions. If these are replaced by groundwater takes with no minimum flow conditions, it is possible that more water would ultimately be abstracted from the hydrological system with an associated reduction in stream flows. The proposed rules for transfers from surface to groundwater takes require that the replacement groundwater take should have a low stream depletion effect, i.e. less than 40% and less than 5 L/s of the consented take rate should be stream-depleting over a 150-day period. This restriction means that an overall reduction in stream flows is unlikely if the surface water to groundwater transfer provision is broadened to include all catchments. Consequently, we recommend accepting the submission from DairyNZ (in part) to delete condition (5) of Rule 8.5.12. We note that allowing abstractions from catchments that are not over-allocated would require a consequential amendment to Policy 8.4.15.

1813 PC7-357.31
1814 Schedule 12 of the CLWRP is not being amended by PC7.
5.40. In response to DairyNZ’s request to include a new clause to state that new takes should not be from over-allocated zones, we note that condition (1) of proposed Rule 8.5.12 already ensures that the new take is not from an over-allocated Transfer Permit Allocation. The proposed rule is one method to phase out over-allocation (consistent with Policy B6 of the NPSFM), therefore it is appropriate to enable new takes from the Transfer Permit Allocation to replace abstractions from an over-allocated surface water allocation zone. We recommend rejecting this request from DairyNZ.

5.41. Forest & Bird consider that matter of discretion (5) of Rule 8.5.12 does not explicitly protect significant or underground indigenous biodiversity from potential adverse effects of water use. The submitter\(^\text{1815}\) requests that Rule 8.5.12 is amended to give effect to section 6(c) of the RMA and Te Mana o te Wai. The submitter has not proposed any specific amendments to Rule 8.5.12 to support its submission.

5.42. We note that the wording for matter of discretion (5) of Rule 8.5.12 mirrors the wording from the same matters within region-wide water take and use Rules 5.123 and 5.128. In the absence of any specific relief sought, and with limited reasoning provided by the submitter, it is difficult to understand what specific relief would appropriately address the concerns raised in the submission. In the absence of this information, we recommend rejecting this submission.

5.43. We note that for a replacement water permit to meet the conditions of Rule 8.5.12, the existing permit must be surrendered (in accordance with condition (6)). We are aware there are issues with requiring a water permit be surrendered prior to the issuing of a replacement permit, and while there are no submissions on this point, we suggest that condition (6) be deleted, and a new matter of discretion is included to allow Council to consider the timing of the surrender of the existing permit.

Submissions on the definition of “deep groundwater”

5.44. Deep groundwater is defined within Part C of PC7 as:

\[\text{means groundwater that is abstracted from a well:} \]
\[\quad a. \text{ located at least 100 metres from a river; and} \]
\[\quad b. \text{ that has a minimum top screen depth of at least 50 metres below ground level; and} \]
\[\quad c. \text{ where the average abstraction rate over 150 days is no more than 10 L/s.} \]

5.45. The term is referenced within proposed Policy 8.4.15 and proposed Rule 8.5.12. Additionally, deep groundwater is referenced in ‘Note 1’ of Table 8-4 with respect to Transfer Permit Allocation.

5.46. Two submissions were received on the definition of ‘deep groundwater’, both of which either oppose part of or the entirety of the definition.

5.47. The submission from Bowden Environmental supports clauses (a) and (b) of the definition as it considers the distance and depth requirements are sufficient. However, the submitter states that clause (c) of the definition is “very restrictive” with the requirement for an average abstraction rate over 150 days of less than 10 L/s. The submitter considers that the rate of take does not define an aquifer system and states that the current wording would “eliminate”

---

\(^{1815}\) PC7-472.106
most irrigation takes. Given this, the submitter requests that clause (c) of the definition is deleted.

5.48. Robinson Dairy Farm Ltd opposes the definition, with no specific decision requested. No reasoning for this position is provided within the submission.

5.49. The definition of deep groundwater aims to define the average pumping rate and minimum well depth and distance from a stream at which the modelled stream depletion rate meets the definition of a low degree of stream depletion effect as per Schedule 9 of the CLWRP, as follows: where the effect of 150 days of steady continuous groundwater abstraction on the surface waterbody is less than 40% of that abstraction rate and the effect of pumping the proposed annual volume over 150 days at a continuous steady rate is less than 5 L/s unless a greater or lesser rate is specified for the catchment in Sections 6 to 15.

5.50. We reviewed the Council’s consents database, which shows that of the approximately 100 surface water takes within the Waimakariri zone, approximately 16 have a maximum rate of take of 10 L/s or less as per Table 5-1.1816

5.51. Having reviewed this information we agree with the submission from Bowden Environmental that a 10 L/s cap is restrictive and would only apply to a small proportion of existing takes. However, as abstraction rates are a key driver of stream depletion rates, we do not recommend that clause (c) of the definition is deleted in its entirety. In response to the submission from Bowden Environmental, we investigated how the definition could be amended if a higher abstraction rate was included, noting that large abstractions (e.g. 50 L/s) from wells greater than 50 m deep and located 100 m from a stream could cause significant stream depletion effects. The additional analysis undertaken investigated the relationship of pumping rate and distance for 30 m, 50 m and 75 m deep wells on stream depletion effects, as detailed in Etheridge (2019a)1817. The results of this analysis (which uses an improved method relative to the original cut-off depth analysis work presented in Etheridge 2019b)

---

1816 These two paragraphs were prepared by Zeb Etheridge (Groundwater).
show that groundwater takes located within 2 km of a stream have the potential to draw more than 60% of their water from that stream, i.e. significantly more than the 40% threshold.

5.52. The assessment presented in Etheridge (2019a) shows that well depth is less critical for the three depths modelled. The updated results therefore indicate that a site-specific assessment is required to demonstrate that a groundwater take has a “low” stream depletion effect (as per Schedule 9 of the CLWRP). We therefore consider that it is appropriate to delete the definition of deep groundwater and include the requirement for low stream depletion within the wording of the relevant policy and rule.

**Recommendation**

5.53. That Policy 8.4.15, Rule 8.5.12 and Rule 8.5.13 are amended as per Appendix E.

5.54. That the definition of “deep groundwater” is deleted.

5.55. That new Rule 8.5.12A is inserted as per Appendix E.

**Transfers**

**Introduction and Provisions**

5.56. The proposed transfer provisions in the Waimakariri sub-region are part of a wider sub-region water quantity framework, aiming to reflect the freshwater outcomes sought by the community to assist in reducing over allocation and better manage effects of surface water abstractions.

5.57. Managing transfers as generally intended by the Waimakariri provisions is a means to reduce over-allocation, by requiring the surrender of a proportion of the consented allocation and allowing the remainder to be transferred. While this may be seen as a disincentive for transferring, transfers are often the only way to secure water allocation where catchments are over-allocated, so the allocation of additional water is not possible.

5.58. Proposed Policy 8.4.17 is not a new policy in the Waimakariri section, having previously been Policy 8.4.3 in the original iteration of the CLWRP, made operative in 2016. It requires that there shall be no transfer of the point of take for a water permit beyond the property boundary. Transfers to another property, of takes from the Ashley River/Rakahuri or tributaries that join the main stem above State Highway 1, are prohibited (with several named exceptions).

5.59. Proposed Policy 8.4.18 is intended to assist with phasing out the over-allocation of surface water allocation zones, in addition to region-wide Policy 4.50. Policy 8.4.18 requires that water may only be transferred where the permit has been previously exercised and records show water has been used in the preceding five years, and that 50% of the water to be transferred is surrendered and not re-allocated.

5.60. Policies 8.4.17 and 8.4.18 are implemented through Rule 8.5.17, which applies conditions, additional to those of region wide Rule 5.133, when considering transfer applications in the Waimakariri sub-region. Rule 5.133 provides for transfers as a restricted discretionary activity, if all conditions are met. If a transfer proposal does not meet one of more of the conditions of Rule 5.133, it becomes non-complying under Rule 5.134.
Submissions and Analysis

5.61. The submissions related to each of the Waimakariri transfer provisions have been summarised below, alongside our analysis.

Policy 8.4.17

5.62. Two submitters^1818 support Policy 8.4.17 as notified. HortNZ^1819 generally supports the proposed policy, but requests that the take of water for rootstock survival is excluded from the surrender requirement.

5.63. Four submitters^1820 seek that Policy 8.4.17 is deleted in its entirety.

5.64. Three submitters^1821 request that Policy 8.4.17 be deleted in its entirety, unless the Policy is amended to clarify its intent. These submitters believe the intent of the policy is to limit the transfer of water permits within the Ashley River/Rakahuri FMU only, while the wording currently appears to prohibit all transfers. These submitters acknowledge that transfers are an efficient method to redistribute available water, but consider that existing policies 4.50 and 4.71 adequately cover the situation.

5.65. During the development of PC7, the Waimakariri ZC, through the ZIPA^1822, recommended that existing Policy 8.4.3, now Policy 8.4.17, be retained. In reading both the submissions alongside the ZIPA recommendations, we agree that while the wording of Policy 8.4.17 could be improved for clarity, the intent of the policy remains as per the ZIPA recommendation, to effectively prohibit transfers of water permits within the Ashley River above State Highway 1. We recommend a change to the wording to clarify the intent of Policy 8.4.17.

Policy 8.4.18

5.66. Three submitters^1823 support Policy 8.4.18 as notified. Beef + Lamb^1824 generally supports the proposal, with specific support of the exclusion of stock water takes from any surrender requirement.

5.67. Seven submitters^1825 seek that Policy 8.4.18 is deleted in its entirety. Forest & Bird^1826 seeks that Policy 8.4.18 is deleted, unless the policy is amended to require a 100% surrender of transferred water.

5.68. Robinson Dairy Farm Ltd^1827 seeks that the 50% reductions required by Policy 8.4.18 instead be assessed on a case by case basis.

---

^1818 Cashmere Stream Care Group (PC7-193.14), Federated Farmers (PC7-430.79)
^1819 PC7-365.49
^1820 Bowden Environmental (PC7-84.8), W J Winter & Sons Ltd (PC7-177.1), Aratika Trust (PC7-199.26), Knightlea Limited (PC7-368.4)
^1821 C & S McAllister (PC7-255.20), Westburn Farm Limited (PC7-377.3), Four Hooves Ltd (PC7-272.18)
^1822 D4.3, Recommendation 4.2(c)(iii)
^1823 DOC (PC7-160.58), Cashmere Stream Group (PC7-193.15), Federated Farmers (PC7-430.80)
^1824 PC7-214.73
^1825 For example; Bowden Environmental (PC7-84.9), Four Hooves Ltd (PC7-272.2), Westburn Farm Limited (PC7-377.4)
^1826 PC7-472.85
^1827 PC7-419.3
5.69. During the development of PC7, the Waimakariri ZC, through the ZIPA, recommended a 50% surrender of the transferred volume in over-allocated catchments. We consider that the surrender of water when transferring is likely to be a disincentive, and likely to be considered as such by any consent holders looking at transfers as an option. The level of disincentive in the proposed regime is likely related to the percentage of surrender required. While a 100% surrender requirement would be akin to a full surrender of the consent, not having a specific percentage requirement leads to uncertainty for both prospective transferors, as well as the consents staff who have to process any such applications. We recommend retaining the 50% surrender requirement as a clear means of reducing over-allocation, in accordance with the ZIPA.

5.70. Fish & Game generally supports the phasing out of over-allocation and seeks that clause (b) of Policy 8.4.18 is amended as follows:

Requiring, in over-allocated Surface Water Allocation Zones and except where the water is to be used for community supply or stock drinking water, that 50 percent of the actual use rate of take or actual use volume of water proposed to be transferred is surrendered and not re-allocated, based on the average of the actual allowable take during the preceding five-year period or part thereof.

5.71. The amendments sought by Fish & Game seek to limit the transfer of water to the amount that has previously been used, in order to avoid the increased use of allocated water as a result of a transfer where it was previously unused, or only used in limited quantities. We agree that using past use records to determine the volume available for transfer and surrender is a sensible way to ensure allocated but unused water is not able to transferred, which would effectively increase the actual water abstracted.

5.72. Using records of actual use for the previous five years is also consistent with the ZIPA, which recommends that transfers of unexercised consents, or water that hasn’t been used in the previous five years, using actual use records, be prohibited.

5.73. We recommend an update to the wording of Policy 8.4.18 to specify that water is only able to be transferred where actual use records show it was been used in the preceding five years.

5.74. Several submitters seek that specific water take and use activities are excluded from the surrender requirement of Policy 8.4.18:

5.75. HortNZ seeks that water used for root stock and crop survival is excluded from the surrender provision, while Potatoes NZ seeks that water used for baseline commercial vegetable growing areas is also excluded. These uses have been discussed as a general issue in Part 5, Section 6.

5.76. Fulton Hogan seeks that water used for gravel extraction and ancillary uses is excluded from the surrender provision. Such water is transferred from site to site as gravel is extracted, or projects require materials from a different location. Through multiple transfers and surrenders, the volume of water available for gravel extraction and ancillary purposes would

---

1828 D4.3, Recommendation 4.2(c)(i)
1829 PC7-95.14
1830 D4.3, Recommendation 4.2(c)(i)
1831 PC7-356.50
1832 PC7-404.18
1833 PC7-428.3
become limited. The submitter has advised that this request was also made in the Selwyn Waihora sub-region, with the result being a separate transfer rule for transfers related to the continued use of water for gravel extractions.\textsuperscript{1834}

5.77. We understand the general concerns raised by Fulton Hogan and acknowledge the water shortage issues that could occur with the transfer provisions as notified. We note that the transfer provisions as notified relate to surface water abstraction only and are one of the means to improve surface water flows and reduce over-allocation. The preferred supply for such non-essential uses would be groundwater, where there is allocation available, and any subsequent transfer would not be subject to the additional restrictions. We note that the scale of Fulton Hogan’s existing gravel extraction operations within the Waimakariri sub-region, and the availability and accessibility of gravel resources within this zone (particularly in comparison to other parts of Canterbury), is unclear from their submission. The surrender of water through the transfer provisions is a key method within Part C of PC7 to recover over-allocation and improve surface water flows within the sub-region. With this in mind, and in the absence of specific information, we do not consider that it would be appropriate to provide an exemption for this activity within the Waimakariri sub-region. As such, we recommend rejecting the relief sought by Fulton Hogan, and retaining the current wording of Policy 8.4.18.

\textit{Rule 8.5.17}

5.78. Two submitters\textsuperscript{1835} support Rule 8.5.17 as notified. M Eder and G Morriss seek that Rule 8.5.17 is deleted in its entirety, with no specific reasoning provided.

5.79. Several submitters seek amendments to condition (1) of Rule 8.5.17, in line with previous submission points on Policy 8.4.18. Fish & Game\textsuperscript{1836} seeks that the rate and volume to be transferred are based on actual use, while Fulton Hogan\textsuperscript{1837} seeks that water taken and used for gravel extraction and ancillary activities is excluded from the 50% surrender requirements.

5.80. Our recommendations on Fish & Game’s submission on Policy 8.4.18 will also be reflected in Rule 8.5.17.

5.81. As per its submission on Policy 8.4.18, Robinson Dairy Farm\textsuperscript{1838} seeks that the volume of water to be surrendered is determined on a case by case basis, rather than the 50% requirement. As per the discussion in relation to the submission of Policy 8.4.18, we consider having a set number in the plan provides the most certainty for all parties, and is consistent with the ZIPA recommendations. As such, we recommend retaining the 50% surrender requirement.

5.82. Forest & Bird\textsuperscript{1839} seeks that Rule 8.5.17 be amended to provide for surrendered water not be re-allocated until minimum flows for ecosystem health have been achieved. We acknowledge that minimum flows are an important way of meeting plan outcomes with regard to ecosystem health, but consider there are other methods in the plan that ensure abstractions adhere to the appropriate minimum flows and partial restrictions. The transfer policies and rule relate only to reducing over-allocation, which is a related, but separate matter to

\textsuperscript{1834} Rule 11.5.39, allowing for such transfers as a discretionary activity
\textsuperscript{1835} Beef + Lamb (PC7-214.92), Federated Farmers (PC7-430.118)
\textsuperscript{1836} PC7-95.34
\textsuperscript{1837} PC7-428.11
\textsuperscript{1838} PC7-419.4
\textsuperscript{1839} PC7-472.107
compliance with minimum flows. Policies 8.4.10 to 8.4.12 require that all surface water abstractions comply with the relevant environmental flows, minimum flows, and pro-rata partial restrictions. In terms of the re-allocation of surrendered water, we acknowledge that this will not be possible until the currently over-allocated zones are at or below their allocation limits, at which point any new takes would need to comply with the both the allocation limit, and minimum flow and restriction regimes. Taking into consideration these matters, we consider the changes sought by Forest & Bird are not necessary, with the outcomes sought by the submitter being effectively dealt with via other provisions in the Waimakariri sub-region section of the CLWRP.

5.83. Between Policy 8.4.18 and Rule 8.5.17, there are some areas of crossover between submissions and decisions sought. For the reasons set out in the Common Issues section relating to the drafting style of PC7, we recommend that Policy 8.4.18 be simplified to refer more generally to enabling the reduction in over-allocation via transfers, with the detail included in Rule 8.5.17.

**Recommendation**

5.84. That Policies 8.4.17 and 8.4.18 and Rule 8.5.17 are amended as per Appendix E.

**Targeted Stream Augmentation**

**Introduction and Provisions**

5.85. This section discusses the provisions in Part C of PC7, which apply within the Waimakariri sub-region and relate to TSA. These include a proposed definition for ‘Targeted Stream Augmentation’, proposed Policies 8.4.19, 8.4.20 and 8.4.21 and proposed Rules 8.5.18, 8.5.19 and 8.5.20.

5.86. Policy 8.4.19 directs that TSA is enabled, where its design, construction and operation achieves a number of listed matters. Policy 8.4.20 directs that the ecological benefits from the discharge of water from TSA into a surface water body are protected by avoiding abstraction of that discharged water. Policy 8.4.21 directs the way in which the values, customs and culture of Ngāi Tūāhuriri Rūnanga are to be protected when water is introduced from outside the catchment for TSA.

5.87. Rule 8.5.18 provides a restricted discretionary activity status for the taking and using of groundwater or surface water for TSA and the subsequent discharge of that water into a surface water body, subject to six criteria being met. These include limitations on the location of the take or discharge points\(^{1840}\), and require that the take (in combination with all the existing takes) does not exceed any allocation limits in Tables 8-1, 8-2, 8-3 and 8-4\(^{1841}\), and that the application demonstrates the discharge will reduce the concentration of contaminants or increase flows in the receiving surface water body\(^{1842}\).

5.88. Under proposed Rule 8.5.19, where the take, use and discharge does not meet one of the locational criteria, or the requirements to demonstrate contaminant reduction/increased

---

\(^{1840}\) Clauses (3), (4), (5) and (6).
\(^{1841}\) Clause (1).
\(^{1842}\) Clause (2).
flow, the activity is classified as a discretionary activity. Under Rule 8.5.20, where the take, use and discharge exceeds the allocation limits, the activity is non-complying.

5.89. For completeness, it is noted that a number of submissions made in relation to the TSA provisions make similar comments in relation to MAR, or seek relief relating to TSA outside the Waimakariri sub-region. This section of the Section 42A Report does not address these broader submissions, only those made in relation to the TSA provisions applying in the Waimakariri sub-region.

5.90. The submissions relating to TSA have been grouped into and considered according to the following topics:

- Supporting submissions
- Submissions seeking changes to Policy 8.4.19
- Submissions seeking changes to Policy 8.4.20
- Submissions seeking changes to the TSA rules
- Submissions relating to the definition of TSA

Submissions

Supporting Submissions

5.91. There are a number of submissions in support of the TSA provisions, seeking that the provisions are retained as notified\(^{1843}\). No submissions were received seeking changes to Policy 8.4.21. There are a number of submitters who broadly support the use of TSA\(^{1844}\), and the corresponding rule framework\(^{1845}\).

5.92. Reasons given for supporting the TSA provisions include that: enabling TSA is an important part of ensuring environmental outcomes are met, while allowing farming to continue viably\(^{1846}\); and the TSA provisions will ensure minimum flows during dry periods are maintained and improve water quality\(^{1847}\).

5.93. Three submitters\(^{1848}\) also appear to support TSA as a method to help meet water quality targets, but are concerned that these have not been considered in the plan. Claxby Irrigation Limited\(^{1849}\) and Vetlife Limited\(^{1850}\) raise similar concerns that the potential of TSA has not been considered in the plan change and seek that TSA is trialled, implemented and monitored, as appropriate. It is not clear how these submissions relate to the proposed provisions for TSA that are included within Section 8 of the CLWRP, or what, if any changes are sought to the notified provisions.

---

\(^{1843}\) Policy 8.4.19: 15 submissions in support seeking its retention; Policy 8.4.20: 12 submissions in support seeking its retention; Policy 8.4.21: 10 in support seeking it is retained.
\(^{1844}\) For example; R Devlin (PC7-56.18), M J Spencer-Bower (PC7-473.16)
\(^{1845}\) DairyNZ (PC7-357.33), Federated Farmers (PC7-430.120, PC7-430.121)
\(^{1846}\) For example, Glen Eyre Dairy Ltd (PC7-113.16, PC7-113.17, PC7-113.18, 113.19, 113.20, 113.21), P S Bay (PC7-289.24, PC7-289.25, PC7-289.26, PC7-289.27, PC7-289.28, PC7-289.29), DHL (PC7-415.52, PC7-415.53, PC7-415.54, PC7-415.55, PC7-415.56, PC7-415.57)
\(^{1847}\) For example, Carleton Dairies Ltd (PC7-273.2), Rangvet Ltd (PC7-96.5)
\(^{1848}\) Onfarm Data Ltd (PC7-232.4), B & W Croft (PC7-454.3), M J Brough (PC7-477.4)
\(^{1849}\) PC7-433.36
\(^{1850}\) PC7-456.40
5.94. We note that the concerns raised by the submitters appear to be based on the view that potential benefits and results of TSA have not been adequately considered during the development of the water quality targets and nitrate reductions for the Waimakariri sub-region. As such, these submissions are less relevant to the TSA provisions themselves, and rather seek to address the wider package of nutrient management provisions within Part C of PC7. The assessment of the nutrient management provisions and submissions is covered elsewhere in this report.

Policy 8.4.19

5.95. Proposed Policy 8.4.19 provides guidance for improving flows in rivers and/or decreasing nitrate nitrogen concentrations in surface waterbodies within the Waimakariri Sub-region by enabling targeted stream augmentation. The policy also sets additional direction for the design, construction and operation of any TSA project.

5.96. CCC\textsuperscript{1851} notes that both MAR and TSA are part of the solutions package for restoring flow and water quality. It is concerned that clause (a) restricts taking groundwater for TSA to the allocation limits specified in Tables 8-1, 8-2 and 8-3. It seeks that TSA from groundwater be considered as a non-consumptive take, or otherwise provisions made in the groundwater allocation tables for TSA.

5.97. We note that although stream augmentation from groundwater is net neutral in terms of the overall large-scale water budget, the local effect of the augmentation would be to increase flows in part of one stream at the expense of flows in others. We do not recommend amending the policy to describe groundwater taken for TSA as “non-consumptive”. We acknowledge the submitter’s concerns that the policy does not provide for the abstraction of water from groundwater, however we note that corresponding Rule 8.5.18 also applies to the taking of groundwater.

5.98. In reference to the Common Issues section of this report, we note that clause (a) duplicates the requirements of region-wide Policy 4.7, and we therefore recommend clause (a) is deleted. Should the panel disagree with this assessment, we note that clause (a) of the policy does not include reference to the groundwater allocation limits in Table 8-4 and suggest this omission is an error.

5.99. In relation to clause (b), four submitters are concerned with the phrase “avoided as far as practicable”, either because it is too narrow and uncertain\textsuperscript{1852}, or unclear in its intention\textsuperscript{1853}. These submitters therefore seek that the policy is amended so that the identified adverse effects can be avoided, or mitigated\textsuperscript{1854}, or so that the policy allows for avoidance where practicable, “or otherwise remedied or mitigated to minimise adverse effects”\textsuperscript{1855}.

5.100. We agree that the wording of clause (b) is not particularly certain. Policy 11.4.22 within the Selwyn Te Waihora sub-region requires that adverse effects from TSA on cultural values, including those associated with unnatural mixing of water, are “remedied or mitigated”. Policy 13.4.18 within the Lower Hinds/Hekeao Plains Area directs that these effects are “avoided as the first preference”, and where avoidance is not practicable, “remedied or

\textsuperscript{1851} PC7-337.88
\textsuperscript{1852} WIL (PC7-349.1), S & J Tallott (PC7-405.4)
\textsuperscript{1853} Claxby Irrigation Ltd (PC7-433.2), Waimakariri NGF (PC7-425.6)
\textsuperscript{1854} WIL (PC7-349.1), S & J Tallott (PC7-405.4), Claxby Irrigation Ltd (PC7-433.2)
\textsuperscript{1855} Waimakariri NGF (PC7-425.6)
mitigated”. We consider that the wording of these policies provides greater certainty for the management of adverse effects on Ngāi Tahu values. Therefore, amendments to this clause are recommended for the reasons set out above, and to ensure more consistency with other TSA provisions in the CLWRP, where appropriate.

5.101. Conversely, Forest & Bird\textsuperscript{1856} seeks the removal of reference to the avoidance of adverse effects being “as far as practicable” from clause (b). It considers this phrase suggests an opt out is available and, in its view, defeats the use of the word avoid. It also seeks\textsuperscript{1857}, in relation to clauses (d) and (e), which pertain to wetland inundations and adverse effects on fish passage, that these are required to be avoided, with the option for mitigation removed from these clauses. The submitter states that wetlands must be protected and that adverse effects on fish passage should be avoided as this is a major contributor to loss of indigenous species. In relation to clause (g) it seeks\textsuperscript{1858} that reference to “no net loss” is removed, and that “avoid adverse effects on significant indigenous vegetation and significant habitats of indigenous fauna” is added. These changes are sought on the basis that no net loss implies an offset, and significant indigenous vegetation and significant habitats of indigenous fauna must be protected as a matter of national importance. The submitter considers that the policy does not give effect to section 6(c) of the RMA or Policy 9.2.1 of the CRPS.

5.102. Given the nature of TSA, requiring adverse effects to be avoided completely would be very difficult in many cases, and would likely prevent beneficial TSA schemes from coming forward. As such, we recommend rejecting the relief sought for clause (b) of Policy 8.4.19 and adopting the amendments to this clause discussed above. This will not provide an “opt out” for applicants but rather ensure that where adverse effects on Ngāi Tahu values cannot be avoided, they are managed appropriately. This will also be assessed for each application on a case-by-case basis.

5.103. The concerns raised by Forest & Bird in relation to avoiding adverse effects on wetlands, vegetation, fauna and fish passage are acknowledged. We consider that the wording of these clauses generally strikes an appropriate balance between enabling TSA, whilst managing any potential adverse effects that may arise from the activities. Given the potential environmental benefits of TSA, we consider it is important to allow applicants to propose mitigation for these adverse effects rather than prohibiting these activities from the outset. The associated rule framework for TSA still provides the ability to refuse consent applications which may result in significant adverse effects on the matters raised within the submission. However, we agree that clause (g) is inconsistent with section 6(c) of the RMA. On this basis, we recommend accepting the submission from Forest & Bird in part and recommend amending clause (g) of Policy 8.4.19.

5.104. WWHT\textsuperscript{1859} seeks that clause (h) is amended so that the requirements for “adverse effects on people, property and drainage systems from higher flows” are required to be mitigated only, rather than avoided or mitigated. The submitter notes that aquifer recharge (and it is assumed this comment applies to TSA as well) is likely to result in raised ground water levels and creation of wetter pasture land in some places where wetlands used to be but have been drained. i.e. restoring a degraded wetland. The submitter considers, therefore, that requiring avoidance of effects on properties negates some benefits of aquifer recharge and may

\textsuperscript{1856} PC7-472.86
\textsuperscript{1857} PC7-472.87, PC7-472.89
\textsuperscript{1858} PC7-472.88
\textsuperscript{1859} PC7-88.109
severely restrict the application of this wetland restoration tool. It similarly seeks changes to matter of discretion (6) for Rule 8.5.18 so that it refers only to the adverse effects on people and property from raised water levels and removes reference to “and any reduction in the capacity of a drainage system”. The submitter instead seeks that the following additional criterion is added:

*Any beneficial effects of improving the ecological health and function of a waterway or wetland and restoring degraded wetlands.*

5.105. Region-wide Policy 4.83 states that restoration or enhancement of wetlands is encouraged provided it does not give rise to any adverse effects on other lawfully established activities, including any inundation or erosion of other people’s property. As such, in the context of wetland restoration, there is already region-wide policy direction to prevent these adverse effects occurring. We do not consider that it would be appropriate to allow exceptions within the Waimakariri sub-region given the potential implications for existing lawfully established land uses and activities. Therefore, we recommend rejecting the relief sought by the submitter.

**Policy 8.4.20**

5.106. Policy 8.4.20 reads:

*Ecological benefits from the discharge of water from targeted stream augmentation into a surface water body are protected by avoiding, in all circumstances, abstraction of that discharged water.*

5.107. Federated Farmers supports the use of TSA for environmental purposes. However, it considers that TSA should also be able to be used to support reliability of supply. As such, it seeks that Policy 8.4.20 is deleted in its entirety, or amended so as not to require avoidance “in all circumstances”, with instead an exception provided where “the purpose of the augmentation, wholly or in part, is to increase the reliability of supply”. The submitter considers that increased reliability of supply does have environmental benefits such as enabling more efficient and effective use of irrigation water. It also considers that there is a practical difficulty in implementing this policy because it would be impossible to distinguish water discharged for the purpose of TSA from any other water that it might mix with in the water body concerned, as even if there is no current abstraction from the water body concerned, the discharged water will eventually reach a water body from which there is abstraction.

5.108. Three submitters seek the following minor wording amendments to Policy 8.4.20:

*Ecological The benefits from the discharge of water from targeted stream augmentation into a surface water body for ecological purposes are protected by avoiding, in all circumstances, abstraction of that discharged water.*

5.109. The submitters note that there may be circumstances where waterbodies are augmented for the purposes of enhancing flow reliability for irrigation purposes, and as such they consider

---

1860 PC7-88.110
1861 PC7-88.111
1862 PC7-430.83
1863 WIL (PC7-349.2), S & J Talbot (PC7-405.5), Waimakariri NGF (PC7-425.7)
that the policy needs to be amended to make it clearer that it applies to water that is augmented for ecological purposes.

5.110. We note that the purpose of TSA is to improve water quality and/or surface water flows. The provisions are not intended to be used to improve reliability of supply. It is unclear what environmental benefits would be achieved if TSA was used for this purpose (as suggested by Federated Farmers). As such, without further information from the submitter, providing policy direction to encourage, or otherwise enable, this use would be inappropriate and inconsistent with the outcomes sought for the Waimakariri sub-region. On this basis, we recommend rejecting the relief sought by the submitter.

**Targeted Stream Augmentation rules**

5.111. CCC\(^{1864}\) raises concerns that while TSA (and MAR) are likely to be part of the solution to reducing nitrate and improving water quality in groundwater and surface water, there does not appear to be any water allocation available for these activities, except by way of a resource consent for a non-complying activity. It considers that sufficient water must be available to provide for TSA and/or MAR in order to meet the Plan’s water quality objectives, and that the non-complying hurdle will act as a disincentive for TSA and/or MAR being used as a tool for reducing nitrate concentrations and improving water quality. As such, it seeks that condition (1) of Rule 8.5.18 is deleted, which requires that the take does not exceed the limits in the allocation tables. The submitter further seeks\(^{1865}\) that the rule is amended or changes otherwise made to make it clear that TSA is non-consumptive and not subject to the allocation limits in Tables 8-1, 8-2, 8-3 and 8-4, and seek consequential changes\(^{1866}\) to Rules 8.5.19 and 8.5.20 (and any other changes as necessary) to give effect to the sought amendments and ensure consistency.

5.112. As discussed in Part 3 Section 7 of this report, in relation to the MAR provisions, we consider that the further allocation of water in an over-allocated catchment is inconsistent with Objective B2 of the NPSFM. In recognition of the benefits of TSA and in a bid to remove the barriers for holders of existing water permits to use those consents for TSA in over-allocated catchments, it is recommended that Rule 8.5.18 is amended to be consistent with the recommended amendments for Rule 5.191. We note there is limited scope for such an amendment to Rule 8.5.18.

5.113. In relation to Rule 8.5.18, Bowden Environmental\(^{1867}\) states that groundwater takes should be required to meet drawdown interference effect limits in the same manner as all other groundwater takes. As such it seeks that the following condition is added to the rule (taken from proposed Rule 8.5.12 (4)):

*The bore interference effects are demonstrated to be acceptable, determined in accordance with Schedule 12.*

5.114. We agree that regardless of the intended use of the abstracted water, the reliability of existing bores should be protected. As such, we recommend adopting the relief sought by the submitter, and consider that non-compliance with this condition should result in the activity being classified as non-complying under Rule 8.5.20, consistent with the activity classification for groundwater permits in Section 8.

\(^{1864}\)PC7-337.110  
\(^{1865}\)PC7-337.170  
\(^{1866}\)PC7-337.111, PC7-337.112  
\(^{1867}\)PC7-84.23
5.115. Federated Farmers\textsuperscript{1868} seeks that clause (6) of Rule 8.5.18 is deleted, which requires that the discharge is not within 100 m of an abstraction used to supply potable water. It states that it is not clear what the purpose of the rule is, given that only high quality water would be used for TSA and the discharges are not directly into groundwater. Beef + Lamb\textsuperscript{1869} seeks that the requirement in clause (6) is extended to also apply to stock drinking water, noting that stock drinking water is a first order priority take.

5.116. Condition (6) of Rule 8.5.18 implements clause (c) of Policy 8.4.19 which enables the use of TSA provided adverse effects on the availability, quality, and safety of human drinking water are avoided. We note that if a discharge is within 100 m of a drinking water supply, the activity becomes a discretionary activity, where the Council can consider the likely impacts of the discharge to surface water on a groundwater supply. We consider the condition is appropriate to protect community water supplies, and to ensure that the provisions are not more lenient than the NESDW. On this basis, we recommend that the relief sought by Federated Farmers is rejected.

5.117. In response to the concerns raised by Beef + Lamb, we note that the wording of condition (6) of Rule 8.5.18 does not explicitly exclude stock drinking water supplies. Therefore, it is our understanding that the scope of the condition would apply to abstractions used to supply drinking water for persons or animals. On this basis, the relief requested by the submitter is not necessary as stock drinking water supplies are already captured.

5.118. United Seadown\textsuperscript{1870} and W J & L E Bailey Farming Ltd\textsuperscript{1871} are concerned with the impact of TSA, in terms of the water table rising and making their farm unfarmable due to it being likely that the farm will become wetter faster and cause increased ponding and surface water run-off. They seek that “another problem is not created” and that the water tables are monitored, and water is not discharged when levels are high. W J Winter & Sons Ltd opposes Rule 8.5.18 in part, due to the “effect in rising water table in our Clarkville and Kaiapoi properties”. It is not clear what decision the submitter seeks to address these concerns.

5.119. We acknowledge the submitters’ concerns in relation to the potential impacts on properties from increased flow levels and decreased land drainage. However, there is sufficient scope within the proposed matters of discretion for Rule 8.5.18 to consider these matters during the consenting process. For example, the location, rate, volume and timing of the take and discharge, as well as any adverse effects on people and property from raised water levels and any reduction in the capacity of a drainage system are all matters which will be considered during the standard consenting process. As discussed above, additional policy direction is also proposed to ensure that adverse effects on people, property and drainage systems from higher flows are avoided or mitigated. Therefore, potential applicants will be required to demonstrate how the proposed activities will avoid or mitigate these effects. Decision makers also have the ability to refuse applications if such effects are not avoided or appropriately mitigated. On this basis, we recommend rejecting these submissions.

5.120. Forest & Bird expresses “fundamental concerns” with the approach set out to TSA, which it believes appears to provide for the offset of adverse effects from over allocation and potentially allows for continued over allocation or an increase in allocation both in terms of water takes and nutrient discharges. It is concerned that the key sources of pollution, such as

\textsuperscript{1868} PC7-430.119  
\textsuperscript{1869} PC7-214.93  
\textsuperscript{1870} PC7-180.3, PC7-180.4, PC7-180.5  
\textsuperscript{1871} PC7-190.3, PC7-190.4, PC7-190.5
excessive cow urine and overuse of urea fertiliser, will not be meaningfully controlled prior to the implementation of TSA, in areas where TSA is proposed as a solution. It further states that:

The Waimakariri sub-region definition of “Targeted Stream Augmentation” is particularly concerning because it includes the purpose of improving the quality of freshwater, without requiring an increase in flows. This suggests that over allocation could continue with augmentation being used to achieve improvement in water quality to meet instream targets/limits.

5.121. Forest & Bird lists a number of concerns with the TSA provisions, and considers that TSA may be acceptable only in extraordinary circumstances, for example for cleaning community water supplies or to ensure survival of indigenous species, and as a temporary measure only, after all other methods have been tried, tested and have failed. It therefore seeks that TSA is a non-complying activity, with conditions requiring: its use to be temporary in nature; that it is used as a last resort method, and that it avoids adverse effects on indigenous species and their habitats.

5.122. We note that TSA is just one non-regulatory intervention which can be used to further assist the achievement of community outcomes for water quality and quantity in the Waimakariri sub-region. As such, the provisions are not intended as a standalone method to address over-allocation of water and nutrients. Rather, the wider package of provisions within Part C of PC7 introduces several mechanisms to address these issues such as the implementation of GMP, FEPs, nitrate reductions, and new allocation limits.

5.123. In terms of Forest & Bird’s request for the activity status of TSA to be amended to non-complying, we consider that the potential adverse effects of the activity do not warrant a default non-complying activity status. We consider that the restricted discretionary status and associated conditions (including the amendments recommended within this section) and matters of discretion are appropriate for the likely scale and significance of the effects of the activities.

5.124. Rule 8.5.18 already includes a matter of discretion which provides consideration of adverse effects of the discharge on significant habitats of indigenous flora and fauna. Therefore, we consider that Forest & Bird’s request for the avoidance of adverse effects on indigenous species and their habitats has already been addressed within the rule framework.

5.125. Federated Farmers also seeks deletion of matter of discretion (8), relating to adverse effects on Ngāi Tahu values and sites of significance to Ngāi Tahu. We note that the submitter has made the same submission on the proposed amendments to the region-wide rules that introduce a matter of discretion to consider adverse effects on Ngāi Tahu values and sites of significance to Ngāi Tahu. Its submission is addressed in Part 3 Section 4 of this report and is not assessed further here.

1872 For completeness it is noted that the concerns relate to MAR as well as TSA. The comments in relation to MAR are assessed elsewhere in this report.
1873 PC7-472.108
1874 PC7-472.109
1875 PC7-472.110
1876 Matter of discretion (9) of Rule 8.5.18
1877 PC7-430.112
5.126. D A Rankin{1878} opposes all rules in the Waimakariri sub-region (8.5.1 to 8.5.32) and seeks that they are revisited. The discussion regarding the decision sought is largely related to quality of groundwater in Christchurch with respect to nitrate concentrations, and concern about the extent to which expansion of farming is permitted that will affect this. There is no specific discussion regarding the TSA provisions.

5.127. We note that the allocation of water for TSA from an over allocated catchment is classified as a non-complying activity under Rule 8.5.20. This activity classification is the same as proposed for the take and use of water for MAR under proposed Rule 5.193. However, we note that in Part 3, Section 7 of this report, we recommend making it a prohibited activity to take any additional water in surface water catchments where flow and allocation limits are exceeded, on the basis that the existing rule classification is inconsistent with the NPSFM{1879}. While there is no submission seeking a similar amendment to proposed Rule 8.5.20, it is our view that the appropriate rule classification for taking water from an over-allocated waterbody is a prohibited activity.

5.128. We also note that in Part 3, Section of this report, in relation to Rule 5.191 (MAR), we recommend that

**Recommendation**

5.129. That Policy 8.4.20 and Rule 8.5.19 are retained as notified

5.130. That Policies 8.4.19 and 8.4.21 and Rules 8.5.18 and 8.5.20 are amended as per Appendix E.

5.131. That new Rule 8.5.20A is inserted, as shown in Appendix E.

**Definition of Targeted Stream Augmentation**

5.132. The proposed definition for TSA reads:

Targeted Stream Augmentation means the controlled and targeted addition of freshwater to a surface water body for the express purpose of increasing flows or improving the quality of fresh water in the receiving waterbody.

5.133. CCC{1880} seeks that the TSA definition proposed within the Waimakariri sub-region is applied across the CLWRP as a whole (i.e. relocated to Section 2) and that it is amended to enable TSA to be considered non-consumptive in terms of groundwater allocation limits. It considers that the TSA definition should clarify and enable the non-consumptive taking of groundwater, and that as there are several streams in Christchurch that rely on TSA water for maintaining and enhancing flow, the TSA definition would be applied across the region. It states that TSA can provide much needed flow to water bodies and that allocation of freshwater that is hydrologically neutral or non-consumptive should be considered based on the environmental benefits that can be realised from the use of water for maintaining and/or enhancing flows in water bodies.

---

{1878} PC7-220.18, PC7-220.19, PC7-220.20
{1879} Objective B2 of the NPSFM, which requires any further over-allocation to be avoided, and existing over-allocation to be phased out
{1880} PC7-337.87, PC7-337.156
5.134. Forest & Bird supports the definition of TSA proposed in Section 8, but seeks that a consistent word or phrase and definition is used across the CLWRP, stating that sometimes it is referred to as augment, augmentation, or Targeted Stream Augmentation.

5.135. We recognise that there is merit in having a consistent definition of TSA region-wide. However, there are difficulties in this approach given that the application of, and intent behind, the use of stream augmentation differs depending on the sub-region. We consider that it is important that the use of TSA is tailored to the specific issues of the particular sub-region. As such, we recommend rejecting the relief sought by Forest & Bird and CCC.

Recommendation

5.136. That the definition of Targeted Stream Augmentation is retained as notified.

Efficient use of water

Introduction and provisions

5.137. This section discusses the provisions in Part C of PC7 (proposed Policies 8.4.22 to 8.4.24) that set a directive to ensure the efficient use of water within the Waimakariri sub-region, in addition to the region-wide provisions.

5.138. Proposed Policy 8.4.22 requires that any decision on a proposal to maximise the efficient use of water associated with the alteration of a system used to convey water owned or operated by Waimakariri DC or an irrigation scheme, takes into account the benefits of existing water losses on water quantity and quality, and how any potential adverse effects will be avoided or mitigated.

5.139. Proposed Policy 8.4.23 states that where a property is supplied with water by an irrigation scheme or principal water supplier, applications to take and use additional water are only granted where the applicant demonstrates that water supplied to the property by an irrigation scheme is being used efficiently and to the fullest extent possible.

5.140. Proposed Policy 8.4.24 requires that when determining an efficient allocation (in accordance with Schedule 10) for the replacement of a lawfully established permit to take and use water for irrigation affected by the provisions of section 124 to 124C of the RMA, records of past use are considered.

5.141. This section of the Section 42A Report only includes a summary and analysis of the submissions on the proposed policies identified above. The submissions on the related rules are addressed in Part 5, Sections 6 and 7 of this report.

Policy 8.4.22

5.142. Eleven submissions were received on Policy 8.4.22. Seven submitters oppose the proposed policy in part. Four submitters support the proposed policy and seek that it is retained as notified.
5.143. Of those submitters in support, Fish & Game considers that Policy 8.4.22 encourages a “water balance” approach to be adopted, which takes into account both natural and human induced water inputs and outputs. The submitter refers to “significant reductions” in groundwater levels observed in the Hinds catchment following the switch from border dyke irrigation to more efficient irrigation, alongside climatic changes and increasing groundwater abstraction. Others note the environmental benefits of open-race irrigation networks to water quality and quantity, while recognising that upgrades and changes to scheme infrastructure may still be required as part of standard operations.

5.144. Waimakariri DC and several other submitters note that although the stock water race network within the Waimakariri district may contribute to incidental aquifer recharge, it should not be managed solely as a “Managed Aquifer Recharge system”. On this basis, the submitters consider that it is unreasonable to require the management of nitrate nitrogen concentrations in groundwater and water losses for supporting groundwater levels and stream flows by such a network. Rather, the submitters consider these mitigations should be addressed and paid for by those who discharge nitrate nitrogen via effects-based rules and mitigations. The submitters consider that Policy 8.4.22 will compromise the rights of Waimakariri DC as a consent holder to abstract water from the stock water race network.

5.145. Waimakariri DC and several others also note that “system used to convey water” is not defined within the CLWRP. Therefore, they seek that Policy 8.4.22 is amended to replace this phrase with “artificial watercourse used for irrigation and/or stock water” to exclude other water systems such as urban stormwater and wastewater networks.

5.146. We acknowledge that the phrase “system used to convey water” is not defined within the CLWRP and agree that this wording could be interpreted as including other systems not intended to be captured under Policy 8.4.22, such as stormwater and wastewater networks. Therefore, we consider that amendments are necessary to further clarify the scope and intent of Policy 8.4.22. In terms of the submitters’ requests to replace the subject phrase with “artificial watercourse used for irrigation and/or stock water”, we note that the term “water race” is used in the CLWRP and defined in Section 2 as:

\[\text{means a type of artificial watercourse used for the managed conveyance of water often, but not exclusively, for stockwater or irrigation purposes and excludes any drain.}\]

5.147. It is our view that the term “water race” is a more effective way of describing the systems anticipated by Policy 8.4.22 and will provide more certainty for owners and operators of water conveyance infrastructure.

5.148. DairyNZ states that the list of matters within Policy 8.4.22 are important for decision making on efficient use of water (e.g. for resource consenting purposes) and will prevent perverse impacts arising. However, the submitter considers that there may be potential for contradiction between achieving good management practice for irrigation under Schedule

---

1883 WIL (PC7-349.3), S & J Tallott (PC7-405.6)
1884 Waimakariri DC (PC7-3.11), Woodend-Sefton Community Board (PC7-107.14), Rangiora-Ashley Community Board (PC7-149.14), Oxford-Ohoka Community Board (PC7-148.13), Kaiapoi-Tuahiwi Community Board (PC7-42.14)
1885 Waimakariri DC (PC7-3.11), Woodend-Sefton Community Board (PC7-107.14), Rangiora-Ashley Community Board (PC7-149.14), Oxford-Ohoka Community Board (PC7-148.13), Kaiapoi-Tuahiwi Community Board (PC7-42.14)
24 The submitter requests that the following wording is inserted into Policy 8.4.22:

In the event of a conflict between Schedule 24 and/or the ECan portal, Policy 8.4.22 shall prevail.

5.149. We note that Policy 8.4.22 does not relate to the management of irrigation application systems owned and operated by individual property owners. Rather, the policy sets out further matters for the Council to consider for decision making on proposals (i.e. resource consent applications) to alter water conveyance systems, such as water races, owned and operated by Waimakariri DC or an irrigation scheme. Any alteration to these systems would therefore not be within the jurisdiction of individual farmers unless written approval from the owner of the infrastructure was obtained. Therefore, Policy 8.4.22 is not relevant to, and does not affect, on-farm GMP requirements under the CLWRP. We therefore recommend rejecting this submission.

5.150. Federated Farmers also agrees with the need to take into account the matters set out within Policy 8.4.22 but considers that any moves to limit the development of more efficient conveyance of water should be made in consultation with, and with the agreement of, the owners of the infrastructure. The submitter has proposed amendments to Policy 8.4.22 with wording to this effect within its submission.

5.151. We note that Policy 8.4.22 does not intend to prohibit upgrades to systems used to convey water, nor does it suggest that if a resource consent was required it would be refused. Rather, the policy sets out additional matters to be considered as part of the consenting process which would be initiated by the owners of the infrastructure in any event. On this basis, we recommend rejecting the amendments sought by Federated Farmers as it is considered this relief is not necessary.

Recommendation

5.152. That Policy 8.4.22 is amended as per Appendix E.

Policy 8.4.23

5.153. Seven submissions were received on Policy 8.4.23. Four submitters oppose Policy 8.4.23 while one seeks amendments. Two submitters support Policy 8.4.23 and seek that it is retained as notified.

5.154. Of the four submitters seeking the deletion of Policy 8.4.23, Carleton Dairies Ltd and C & S McAllister consider that the ability to access alternative groundwater resources provides reliability and back up when irrigation scheme water is on restrictions. The submitters also consider that efficient allocation of groundwater resources may free up surface water for MAR and TSA.

---

1886 The submitter refers to Schedule 24 of the CLWRP which sets out several ‘Farm Practices’. Schedule 24 is only referenced in Section 11 (Selwyn – Te Waihora) of the CLWRP and is therefore not applicable to the region-wide provisions or any other sub-regional area.

1887 PC7-357.14

1888 PC7-430.84

1889 DairyNZ (PC7-357.15), Federated Farmers (PC7-430.85)

1890 Carleton Dairies Ltd (PC7-273.3), C & S McAllister (PC7-255.3)
5.155. Other submitters\(^{1891}\) also consider that any spare irrigation water could be diverted to environmental purposes or other catchment interventions.

5.156. WIL and S & J Tallott consider that there may be cases where environmental flows can only be provided if WIL shareholders maintain existing deep groundwater supplies (for example) rather than having additional surface water taken from the scheme at the cost of water not being available for TSA and MAR.

5.157. Larundel Dairy Partnership states that it is a WIL shareholder that also holds water permits to take and use additional water for irrigation of areas not irrigated by water sourced from WIL. On this basis, the submitter considers the requirement within Policy 8.4.23 for water to be used “to the fullest extent” may have unintended consequences whereby prioritising the use of scheme water in all cases may restrict the ability for that scheme water to be used for other catchment interventions. Therefore, the submitter requests that Policy 8.4.23 is amended to delete the phrase “and to the fullest extent possible”.

5.158. We note that the intent of Policy 8.4.23 is to reduce over-allocation by ensuring that where water from an irrigation scheme or principal water supplier is supplied to a property, it is prioritised and used efficiently. Policy 8.4.23 will not necessarily restrict the ability for persons to take and use additional water from other sources provided that they can demonstrate that it is required. As part of the consenting process, applicants will have the opportunity to demonstrate the extent and efficiency of scheme water use on the property or farming enterprise, why additional water may be needed, and how much is required. This supporting information could include records of past water use and scheme restrictions, and other intended purposes for the water which may include environmental initiatives. As such, we recommend rejecting the submissions seeking that Policy 8.4.23 be deleted or amended.

5.159. In keeping with the reasons set out in Part 2, Section 6 of this report, we recommend a minor amendment to Policy 8.4.26 to correct a drafting error.

*Recommendation*

5.160. That Policy 8.4.23 is amended as per Appendix E.

*Policy 8.4.24*

5.161. Seven submissions were received on Policy 8.4.24, with four\(^{1892}\) submitters opposing the proposed policy seeking its deletion.

5.162. Of the four submitters seeking the deletion of Policy 8.4.24, two submitters\(^{1893}\) state that Schedule 10 already adequately addresses efficiency in resource allocation. Larundel Dairy Partnership considers that records of past use are “not a sound basis” for considering what represents efficient water use. The submitter states that this is especially relevant when one option in the future may be using consented groundwater in place of scheme water to make this water available for environmental purposes or catchment interventions. Neil Kerr Ltd raises concerns that historical water use will be lower than future requirements due to climate change and any reductions in "permitted" takes will negatively impact the ability to farm. The submitter considers Policy 8.4.24 is contrary to ‘Outcome 6’ within the Waimakariri ZIPA.

\(^{1891}\) WIL (PC7-349.4), S & J Tallott (PC7-405.7), Larundel Dairy Partnership (PC7-179.5)

\(^{1892}\) Neil Kerr Ltd (PC7-355.1), Larundel Dairy Partnership (PC7-179.6), WIL (PC7-349.5), S & J Tallott (PC7-405.8)

\(^{1893}\) WIL (PC7-349.5), S & J Tallott (PC7-405.8)
5.163. Federated Farmers states that past water use does not necessarily indicate need in a dry year. The submitter notes that allocation in Canterbury is designed to provide 90% reliability. Federated Farmers considers that the full range of methodologies in Schedule 10 of the CLWRP should be available and requests that the phrase “consider records of past water use” is replaced in Policy 8.4.24 with “use the methodologies in Schedule 10”.

5.164. We are mindful that while reliability of supply is a consideration when setting allocation limits, limits are set to meet the freshwater outcomes and not to achieve a minimum reliability in every catchment.

5.165. We note that Schedule 10 of the CLWRP provides three methods for determining seasonal irrigation demand. The use of any of the three methods in Schedule 10 is equally valid in calculating the annual volume required for irrigation. The first method of Schedule 10 requires records of past use, moderated to ensure the annual volume is sufficient to meet demand conditions that occur in nine out of ten years for a system with an irrigation application efficiency of 80%. The second method in Schedule 10 provides for the use of a field validated model, such as Irricalc, which must reliably predict annual irrigation volume within an accuracy of 15% and comply with certain criteria. The third method directs the use of a prescribed methodology and figures set out within the schedule.

5.166. Policy 8.4.24 doesn’t restrict the determination of seasonal irrigation demand to the use of only one method (i.e. records of past use) under Schedule 10 within the Waimakariri sub-region. Rather, Policy 8.4.24 requires records of past water use to be considered when determining an appropriate demand for a replacement water permit regardless of which method is adopted within Schedule 10.

5.167. Given the above, we do not agree with, and recommend rejecting, all submissions that consider that Policy 8.4.24 restricts the calculation of seasonal irrigation demand to solely using past records of water use. This extends to Federated Farmers’ requested amendments to Policy 8.4.24 as we note that the policy already provides for the use of Schedule 10.

5.168. Sparrow Family Trust and Mary Sparrow state that, in addition to past water records, other matters should be also be considered and included in Policy 8.4.24 to ensure the development of a balanced view in each case. The submitter requests that Policy 8.4.24 is amended to consider the level of water use in dry seasons, the land type in relation to providing the efficient use of water, the land use prevailing at the time of the replacement of the consent and other previous and potential future patterns of water use on the property, and the location of the take within the relevant GAZ.

5.169. We note that these additional matters are already provided for within the Schedule 10 methodologies.

5.170. Forest & Bird considers that Policy 8.4.24 “further entrenches” current over-allocation and fails to include consideration of best practice or any significant effects of the allocation as part of efficient use. The submitter requests amendments to Policy 8.4.24 to signal more clearly that reviews could reduce allocation over time to achieve environmental outcomes. No specific wording for the requested amendments is included within the submission.

---

1894 PC7-430.86
1895 PC7-133.1
1896 PC7-472.90
5.171. We note that Schedule 10 provides methodologies to determine reasonable seasonal irrigation demands and assists with setting appropriate annual volumes. Best practices for irrigation and efficient water use are addressed through region-wide GMP requirements within the CLWRP, and via the implementation of FEPs and associated audits. To assist with achieving freshwater outcomes, proposed Policy 8.4.38 provides a review framework for all existing surface water permits and stream-depleting groundwater permits within the Waimakariri sub-region. It is our view that Policy 8.4.38 already signals the direction within PC7 to reduce over-allocation. As such, we do not consider that the requested amendments to Policy 8.4.24 are necessary.

Recommendation

5.172. That Policy 8.4.24 is retained as notified.
6. **Quantity – Surface Water**

**Introduction and Provisions**

6.1. Part C of PC7 includes provisions that introduce new environmental flow and allocation regimes that give effect to the freshwater outcomes sought by the community (including an allocation for mahinga kai) for the Ashley River/Rakahuri FMU and Northern Waimakariri Tributaries FMU within the Waimakariri sub-region.

6.2. This section of the report discusses the provisions in Part C of PC7 that introduce a new framework for the take and use of surface water within the Waimakariri sub-region. Proposed provisions related to the replacement of existing surface water or stream depleting groundwater takes with non-stream depleting takes, and the transfer of water permits, within the Waimakariri sub-region are addressed in Part 5, Section 5 of this report\(^{1898}\). The proposed provisions related to the take and use of surface water for the purposes of mahinga kai enhancement are addressed in Part 5, Section 4 of this report\(^{1899}\).

6.3. Part C of PC7 includes additional direction for the management of surface water quantity in the Waimakariri sub-region through the introduction of four new policies\(^{1900}\).

6.4. Policy 8.4.10 directs that surface water flows are to be improved within the Waimakariri sub-region by ensuring that all A, B and C water permits comply with the environmental flow and allocation regimes.

6.5. Policy 8.4.12 directs that the water-take induced occurrence of surface water flows falling below the specified minimum flows will be avoided by implementing pro-rata partial restrictions for all abstractions except those for stock drinking water and community water supply purposes.

6.6. Policy 8.4.14 sets out methods to protect the ecological and cultural outcomes for the wetland and lagoon system in the Kairaki/Mcintosh SWAZ. These include prohibiting any future surface water takes, and only granting groundwater permits where these have a low stream depletion effect on any surface waterbody within the Kairaki/Mcintosh SWAZ.

6.7. Policy 8.4.16 directs that the granting of surface water permits, or stream depleting groundwater permits, shall be avoided until the freshwater outcomes in Tables 8a and 8b are met for the subject surface water body, unless certain criteria are met.

6.8. To implement the proposed policies, Part C of PC7 introduces several new rules to manage surface water resources. Proposed Rules 8.5.9 to 8.5.11 prevail over region-wide rules and seek to manage surface water takes and uses which are not explicitly for the purposes of mahinga kai enhancement.

6.9. Two new tables are also proposed which set out environmental and flow allocation limits for SWAZ within the Ashley River/Rakahuri FMU (Table 8-1) and the Northern Waimakariri Tributaries FMU (Table 8-2).

\(^{1897}\) This section of the report was prepared by Angela Fenemor (Planner), Mark Megaughin (Hydrology) and Jarred Arthur (Ecology)

\(^{1898}\) Proposed Policies 8.4.15, 8.4.17, 8.4.18, Rules 8.5.12 and 8.5.13, and definition of “deep groundwater”

\(^{1899}\) Proposed Policy 8.4.13, Rules 8.5.6 to 8.5.8, and Table 8-3

\(^{1900}\) Proposed Policies 8.4.10, 8.4.12, 8.4.14, 8.4.16
6.10. Part C of PC7 also introduces new definitions of ‘Surface Water Allocation Zone’ and ‘Waimakariri Pro-rata Partial Restrictions’ to implement the proposed surface water quantity provisions within Section 8 of the CLWRP.

Submissions and analysis

6.11. For the purposes of this section, the submissions have been set out according to the following sub-topics:

- General submissions on surface water quantity provisions
- Submissions on Policies 8.4.10, 8.4.12, 8.4.14 and 8.4.16
- Submissions on Rules 8.5.9 to 8.5.11
- Submissions on Tables 8-1 and 8-2

General submissions on surface water quantity provisions

6.12. R Devlin\textsuperscript{1901}, A Hallatt\textsuperscript{1902} and A McGregor\textsuperscript{1903} support the requirement for minimum flows and partial restrictions within the Waimakariri sub-region. No specific decision is sought by the submitters.

6.13. Many submitters seek that all minimum flows and associated partial restrictions provide for the ecological health of waterbodies in the sub-region within the life of the Plan\textsuperscript{1904}. Avon-Otakaro Network\textsuperscript{1905} considers that in order to achieve this, a review of all current consents may be required. The submitters do not directly reference any specific provisions or waterbodies.

6.14. Styx Living Laboratory Trust\textsuperscript{1906} requests that the implementation of the new minimum flows within the Waimakariri sub-region occur over a faster timeframe so that changes become operative sooner. It states that this relief is required to ensure that ecosystems do not decline further during the staged implementation. No specific timeframes or other relief are proposed.

6.15. Ngāi Tūāhuriri Rūnanga\textsuperscript{1907} states that they have significant concerns regarding the proposed minimum flows and maximum allocation in PC7. It states that Te Mana o Te Wai requires that the needs of the river are met first, therefore the basing of some allocations on existing consents and minimum flows set below cultural and ecological recommendations in not consistent with Te Mana o te Wai. We note that the cultural and ecological flow and allocation recommendations are set out in a number of technical reports\textsuperscript{1908} and were identified as a reasonably practical option for PC7 in the Section 32 Report\textsuperscript{1909}. Overall, we have recommended some changes to the flow regimes set out in PC7, but still within the context of the notified provisions. Only a further incremental step towards recognition of Te Mana o te

\textsuperscript{1901} PC7-56.17
\textsuperscript{1902} PC7-239.3
\textsuperscript{1903} PC7-98.14
\textsuperscript{1904} For example: Barnes Family Farms Ltd (PC7-94.19), K De Lu (PC7-256.8), E Perriam (PC7-398.8), R McNab (PC7-366.8)
\textsuperscript{1905} PC7-91.9
\textsuperscript{1906} PC7-205.13
\textsuperscript{1907} PC7-399.65; PC7-399.66; PC7-399.67; PC7-399.69
\textsuperscript{1908} Representatives of Te Ngāi Tūāhuriri and Tipa (2016); Arthur et al. (2019)
\textsuperscript{1909} Sections 15.4.2 and 15.5.2 of the PC7 Section 32 Report
Wai is recommended, however, to recognise this further and place the health of these waterbodies at the forefront of decision making would involve reducing allocation limits which would have some significant consequences for irrigation and associated farming activities in the sub-region. Specific relief sought in terms of minimum flows and allocation limits is discussed later in this report against Tables 8-1 and 8-2.

6.16. Ngāi Tūāhuriri Rūnanga\(^{1910}\) requests a new policy be included within Section 8 to direct a future increase in minimum flows for Silverstream, Cam River/Ruataniwha, Waikuku Stream and Saltwater Creek. The submitter states that in addition to providing certainty to future abstractors, the inclusion of this new policy will provide certainty to Ngāi Tūāhuriri Rūnanga that values will be better provided for into the future. The submitter has not proposed any specific wording for the new policy.

6.17. We note that the Waimakariri ZC recommended further increases in minimum flows for some of these waterbodies, set out in Table 4.6 of the Waimakariri ZIPA. As described in Part 2, Section 2 of this report, we have explicitly considered Te Mana o te Wai (as required by Objective AA1 of the NPSFM) when evaluating submissions. We note that recognising Te Mana o te Wai in the surface water flow and allocation limits for the Waimakariri sub-region would require additional weight being placed on ecological and cultural flows that were identified through engagement and discussion with the Waimakariri ZC, Ngāi Tūāhuriri Rūnanga and the wider community. We recommend amending the flow and allocation tables 8-1 and 8-2 to include additional future increased minimum flows for some surface water bodies, consistent with Table 4.6 of the ZIPA, however do not consider that a policy is necessary to provide specific direction on this matter. We recommend accepting this submission point in part.

6.18. Fish & Game submits generally on Policies 8.4.10 to 8.4.16. It supports the intent of the policies and the environmental improvements the provisions will create for sustainably managing water and other natural resources, including mahinga kai. The submitter notes the important inter-relationships between surface, shallow and deeper catchment water sources. No specific relief for the provisions has been sought by the submitter.

6.19. Bowden Environmental states that the proposed allocation limits in Tables 8-1 and 8-2 have been determined from staff summation of current resource consent rates which, in the submitter’s view, have been incorrect in the past. The submitter considers any inaccuracies could unfairly restrict future renewals. On this basis, the submitter requests details of the summations used to confirm the proposed limits and that Tables 8-1 and 8-2 are amended to include a new note to provide flexibility should the calculations be proven to be inaccurate.

6.20. We note the information used to determine allocation is included in the technical documents that were provided alongside the notification of PC7. In the absence of particular concerns about the proposed limits or any alternatives, we recommend rejecting these submissions.

6.21. D A Rankin submits on a general group of provisions within Section 8 of the CLWRP (Rules 8.5.1 to 8.5.32). As such, identical submission points have been attributed to each rule, including Rules 8.5.6 to 8.5.11. However, the matters raised in the submission points do not relate to any surface water quantity provisions. Rather, they seek amendments to provisions related to groundwater quality and farming activities. As such, the submission points that have been attributed to Rules 8.5.6 to 8.5.11 are not discussed in this section and are addressed elsewhere in this report.

\(^{1910}\) PC7-399.6
Policy 8.4.10

6.22. Three submissions\(^{1911}\) were received on Policy 8.4.10, all of which seek that the proposed policy is retained.

6.23. Federated Farmers’ submission to retain the policy is subject to the appropriateness of the proposed minimum flows and allocation limits in Tables 8-1, 8-2 and 8-3. Federated Farmers’ submission points on Tables 8-1, 8-2 and 8-3 are addressed within the relevant sections of this report.

6.24. DOC supports the objective of improving flows for surface water bodies in the Waimakariri sub-catchment, including the minimum flows and staged increases in minimum flows set in associated Tables 8-1, 8-2 and 8-3.

6.25. Ensuring that all abstractions comply with the revised environmental flow and allocation regimes is an important step towards reducing over-allocation of surface water resources and improving flows within the Waimakariri sub-region. We note that Policy 8.4.10 duplicates the direction set out in strategic Policy 4.7 and restates the conditions of the relevant proposed rules\(^{1912}\). We are therefore of the view that proposed Policy 8.4.10 does not add sufficient value, nor provide additional guidance to decision makers on applications for water permits, to warrant an additional policy in Section 8. With reference to the Common Issues Part 1, section 7 of this report, we recommend the deletion of Policy 8.4.10.

Policy 8.4.12

6.26. Nine submissions were received on Policy 8.4.12. Seven submitters oppose Policy 8.4.12 in part and seek amendments, while two submitters support the proposed policy.

6.27. Four submitters\(^{1913}\) raise concerns with the potential cumulative effects of excluding numerous stock drinking water and community water supply takes from pro-rata partial restrictions within the Cust River area. The submitters request that Policy 8.4.12 be amended to “reference that cumulative effect of stock drinking water and community supplies on the Cust River flows are taken into account”.

6.28. We note that the exception to pro-rata restrictions for abstractions for stock drinking water purposes only apply when resource consent is necessary, on the basis that Section 14(3)(b)(ii) of the RMA permits the taking and using of water for the reasonable needs of a person’s animals for drinking water provided that the taking or use does not, or is not likely to, have an adverse effect on the environment. The abstraction of water for community water supply purposes is managed under region-wide Rule 5.115, where consent applicants are required to prepare a Water Supply Strategy in accordance with Schedule 25, which includes a drought management plan and methods that will be implemented to conserve water during water shortage conditions. The resource consents inventory set out in Vattala (2018) indicates there are very few consents for stockwater drinking purposes, with a small combined rate of abstraction. Taking into account the measures currently in place to manage abstractions for community water supplies and noting that these takes, and those for stock drinking water are

\(^{1911}\) Federated Farmers (PC7-430.76), DOC (PC7-160.52), North Canterbury Fish & Game (PC7-430.77)

\(^{1912}\) proposed Rules 8.5.6 to 8.5.11

\(^{1913}\) W D Croft (PC7-139.1), Four Hooves Ltd (PC7-272.1), C & S McAllister (PC7-255.19), Westburn Farm Ltd (PC7-377.2)
first order priority considerations within the CWMS we do not recommend that these submissions are accepted.

6.29. Federated Farmers submits that it is not always possible to avoid flows falling below specified minimum flows, and that preventing the further taking of water at a particular flow threshold may not stop further decreases in flow. Therefore, the submitter requests that Policy 8.4.12 be reworded as “seek to avoid flows...”.

6.30. We acknowledge that imposing pro-rata partial restrictions on abstractions may not always prevent surface water flows falling below the set minimum flows as rainfall and other climatic variations significantly influence flows within surface water bodies. However, Policy 8.4.12 sets out the methods to ensure that water abstractions do not induce surface water flows to fall below the minimum flow, as a result of abstraction. Therefore, we consider that the submitter’s proposed wording of “seek to avoid” does not provide sufficient certainty for decision makers considering water permit applications in setting appropriate consent conditions to ensure abstractions do not breach minimum flows. Given the above, we recommend rejecting the relief sought by Federated Farmers.

6.31. In addition to stock drinking water and community water supplies, two submitters seek further uses of water to be excluded from the pro-rata partial restrictions subject to Policy 8.4.12. HortNZ requests that Policy 8.4.12 be amended to also exempt abstractions from partial restrictions where the water is used for rootstock and crop survival. The submitter considers it is important for horticulture growers to have the ability to abstract water for the above purposes, stating that there is no alternative to water for the survival of rootstock during drought periods.

6.32. We note that exemptions to the minimum flow requirements only apply to first priority water uses (as described in Policy 4.5), and that it is inconsistent with the objectives of the CLWRP to induce the flow in the river below the minimum flow, including abstractions for commercial or industrial purposes. We therefore recommend rejecting the relief sought by HortNZ.

6.33. Bowden Environmental also seeks amendments to Policy 8.4.12 to extend the exemption of pro-rata restrictions for abstractions where water is used for dairy shed washdown, animal welfare, and an individual’s domestic needs including drinking water, as it considers these to be “priority uses”. We note that Section 14(3)(b)(ii) of the RMA provides for the taking and using of water for an individual’s reasonable domestic needs (provided that the taking or use does not, or is not likely to, have an adverse effect on the environment) and does not need to be repeated in the plan provisions. As per the response to the submission from HortNZ, water used for dairy shed washdown is not considered essential and would be inconsistent with the objectives of the CLWRP to induce the flow in the river below the minimum flow. It is recommended the submission from Bowden Environmental is rejected.

Policy 8.4.14

6.34. Three submissions from two submitters were received on Policy 8.4.14. Fish & Game supports Policy 8.4.14. Forest & Bird opposes Policy 8.4.14 in part and seeks that the policy is amended.

---

1914 HortNZ (PC7-356.48), Bowden Environmental (PC7-84.6)

1915 Objectives 3.6 to 3.10 of the CLWRP
6.35. Forest & Bird consider that the direction of Policy 8.4.14 could be improved by referring to “values” rather than “outcomes”, stating that the proposed term is more commonly associated with ecology and biodiversity. The submitter also seeks amendments to Policy 8.4.14, with proposed wording included in the submission, to consider the cumulative effects of groundwater takes.

6.36. We agree that it is not clear what outcomes for the wetland and lagoon system in the Kairaki/Mcintosh SWAZ the policy is referring to. The technical reports supporting PC7 acknowledge that the coastal wetland system connected to the Kairaki/Mcintosh SWAZ is of cultural and ecological significance. We consider that as the policy uses the term “protected”, the intent of Policy 8.4.14 is most likely related to the protection of the ecological and cultural values of the Kairaki/Mcintosh SWAZ. Therefore, we recommend that Policy 8.4.14 is amended as set out in Appendix E.

6.37. In response to Forest & Bird’s requested amendments to Policy 8.4.14 to consider the cumulative adverse effects of groundwater takes, we note that there is already sufficient discretion within the relevant rules to consider these effects as part of the consenting process. The matters of discretion for groundwater takes with low stream depletion effects include cumulative adverse effects on water quality, proximity to significant indigenous biodiversity, and potential effects on Ngāi Tahu values. These matters provide sufficient scope to assess the potential impacts of groundwater takes, in addition to other existing takes, on significant cultural and ecological values within the area on a case-by-case basis. As such, we recommend rejecting the relief sought by the submitter.

Recommendation:

6.38. That Policy 8.4.14 is amended as per Appendix E.

Policy 8.4.16

6.39. Nine submissions were received on Policy 8.4.16. Six oppose Policy 8.4.16 in part and three support Policy 8.4.16.

6.40. Forest & Bird submits that it is unclear how permits granted using the direction of this policy will comply with the freshwater targets and limits to achieve freshwater outcomes.

6.41. Several submitters request amendments to clause (b) of Policy 8.4.16 to allow exemptions for additional uses of water. Beef + Lamb states that stock drinking water is not always exclusively provided through community water supplies and water permits may be required to supplement permitted takes and provide sufficient volumes for reasonable stock water use. On this basis, the submitter seeks that “stock drinking water” is provided for under clause (b) of Policy 8.4.16.

6.42. We note that where stock drinking water is not provided for under section 14(3)(b) of the RMA or a community water supply, resource consent is required. Proposed Policy 8.4.16 provides for replacement consents, and that the strong direction to avoid granting water permits for this purpose only applies to new consent applications. Such an application would likely be the

---

1916 PC7-472.81
1917 PC7-472.82
1918 Within the matters of discretion for Rule 8.5.9.
1919 Beef + Lamb (PC7-214.72), Bowden Environmental (PC7-84.7), WHoW Charitable Trust (PC7-558.1)
result of establishing a new farming activity or intensifying an existing activity. It is our view that making water available for new or intensified farming activities at the expense of meeting the freshwater outcomes is inconsistent with Objective B2 of the NPSFM and Objective 3.8 of the CLWRP. We recommend rejecting the submission from Beef + Lamb.

6.43. WHOW Charitable Trust states that Policy 8.4.16 does not allow for a recreational/amenity allocation from the Eyre Groundwater Allocation Zone. Therefore, the submitter requests that clause (b) of Policy 8.4.16 is amended to include “community recreational/amenity facility”.

6.44. We note that the use of water described by WHOW Charitable Trust is likely to be provided for as a community water supply. The CLWRP defines a community water supply as “means water taken primarily for community drinking-water supply, and includes that also used for institutional, industrial, processing, or stockwater purposes or amenity irrigation use and firefighting activities”. We consider that the intended use of water proposed by the submitter will therefore likely be captured under this definition, and as such, will already be provided for within Policy 8.4.16. On this basis, we recommend rejecting the relief sought by the submitter.

6.45. Bowden Environmental seeks to extend the exemption for abstractions where water is used for dairy shed washdown, animal welfare, and an individual’s domestic needs including drinking water, as they consider these to be “priority uses”. As per the response to the submitter’s requested relief for Policy 8.4.12, we recommend that this submission point is rejected.

Rules 8.5.9 to 8.5.11

6.46. Forty-five submissions from 17 submitters were received on Rules 8.5.9 to 8.5.11. Thirty-five submissions oppose the provisions in part, eight oppose the provisions in their entirety and two support the provisions.

Rule 8.5.9

6.47. Five submitters note that abstraction to enable the irrigation of Regeneration Zone Land, once new recreational facilities are constructed, will be subject to Rule 8.5.9. The submitters raise concerns about whether a consent would be granted for this activity given that groundwater and surface water is over-allocated “through the whole Kaiapoi River system”.

6.48. The submitters state that in accordance with condition (1) of Rule 8.5.9 (and associated Rule 8.5.11) abstractions are prohibited if they exceed a minimum flow limit regardless of whether there are any ecological effects in the tidal reaches of the lower river resulting from a temporary abstraction, or whether there are areas of very high groundwater that require drainage. They request that any dewatering required in Rangiora or Kaiapoi for future utilities and/or groundwater management purposes and for the installation of new infrastructure should be “discretionary” rather than “prohibited”. The submitters consider that the minimum flow requirements only relates to the abstraction and does not take into account

---

1920 PC7-84.7
1921 Oxford-Ohoka Community Board (PC7-148.19), Rangiora-Ashley Community Board (PC7-149.20), Waimakariri DC (PC7-3.17), Woodend-Sefton Community Board (PC7-107.20), Kaiapoi-Tuahiwi Community Board (PC7-42.20)
1922 Kaiapoi-Tuahiwi Community Board (PC7-42.22), Rangiora-Ashley Community Board (PC7-149.22), Waimakariri DC (PC7-3.14), Woodend-Sefton Community Board (PC7-107.22)
ecological effects, the return of dewatering water to a downstream location, or the period of
time until the take is returned.

6.49. We note that a large number of region-wide rules still apply in the Waimakariri sub-region,
including the region-wide rules for dewatering. The notes contained within Section 8.5 of the
CLWRP describe which rules in Section 8 prevail over the corresponding rules in Section 5. We
consider that the rule framework is sufficiently clear that the take and use of water for
dewatering is either a permitted or restricted discretionary activity under Rules 5.119 and
5.120. We do not consider that any further amendments are necessary to provide for the
relief sought by the submitters.

6.50. In the case of the take and use of water for irrigation, we note that the proposed flow and
allocation limits are based on the best information currently available, arising from the
technical work that has been completed for PC7. Allowing further abstractions above set
environmental limits would be inconsistent with the requirements of the NPSFM to avoid any
further over-allocation of fresh water and phase out existing over-allocation\textsuperscript{1923}. Given the
above, and in the absence of specific supporting information, we recommend rejecting the
submissions seeking the exclusion of tidal reaches and high shallow groundwater from
minimum flow prohibition.

6.51. Federated Farmers states that it largely supports Rule 8.5.9 but opposes the matter of
discretion related to adverse effects on Ngāi Tahu values or on sites of significance to Ngāi
Tahu, including wāhi tapu and wāhi taonga (matter of discretion (15)). The submitter
considers that this matter of discretion should be deleted until there has been discussion with
landowners and managers to ensure there is greater clarity about what this requirement
means, how it will be worked through and what the cost implications are.

6.52. Beef + Lamb states that it supports matter of discretion (15) of Rule 8.5.9 in principle, but
similarly has concerns relating to how it will affect existing activities and applications where
existing resource consents expire. The submitter requests further clarity on the matter to help
water users understand what it would mean for them.

6.53. As discussed above, Federated Farmers submit on multiple proposed rules throughout PC7
requesting this same relief. This matter is addressed elsewhere in Part 2, Section 4 of this
report. Based on the analysis within this section, we recommend rejecting these, and Beef +
Lamb’s, submission points.

6.54. Beef + Lamb also seeks amendments to matter of discretion (14) of Rule 8.5.9, which reads:
\textit{Where the water is to be used for irrigation, the preparation and implementation of a Farm
Environment Plan in accordance with Schedule 7 that demonstrates that the water is being
used efficiently; and}

6.55. Beef + Lamb states that PC7 permits farming activities with up to 50 hectares of irrigation
under proposed Rule 8.5.24, provided all other conditions of this rule are met, including the
preparation and implementation of a Management Plan (instead of a FEP). The submitter
considers that the exclusion of Management Plans from matter of discretion 14 of Rule 8.5.9
would effectively require permitted farming land use activities to produce an FEP in order to
renew their existing water permits once they expire. The submitter states that this would
“significantly disadvantage” these permitted farming land use activities and result in
additional expenses and regulation, which would be out of proportion to the risk of these

\textsuperscript{1923} Objective B2 of the NPSFM 2014 (amended 2017).
activities. Therefore, Beef + Lamb seeks that matter of discretion (14) is amended to include Management Plans. If the relief sought is not adopted, the submitter requests the deletion of Rule 8.5.9. We note that the relevant matter of discretion is identically worded in region-wide Rule 5.123, and do not consider a relaxation from the region-wide requirements is appropriate.

6.56. As discussed above, several submitters\footnote{Bowden Environmental (PC7-84.13, PC7-84.14), W D Croft (PC7-139.5, PC7-139.6), Four Hooves Ltd (PC7-272.10, PC7-272.11), C & S McAllister (PC7-255.23, PC7-255.24), Westburn Farm Ltd (PC7-377.11, PC7-377.12), W D Croft (PC7-139.7), Four Hooves Ltd (PC7-272.12), Bowden Environmental (PC7-84.15), C & S McAllister (PC7-255.25), Westburn Farm Ltd (PC7-377.13)} raise concerns with the references in Rule 8.5.9 to allocation limits within Table 8-1 and 8-2, as they consider that these limits may be incorrectly calculated. The submitters seek that condition (2)(a) of Rule 8.5.9 is amended to remove the reference to allocation limits in Tables 8-1 and 8-2. The submitters also request amendments to condition (2)(b) of Rule 8.5.9 to refer to all consented takes that exist at the date of the Plan, rather than potentially incorrect summations within Tables 8-1 and 8-2.

6.57. The submitters also consider that matter of discretion (13) of Rule 8.5.9 could be interpreted as requiring the first renewals (for applicants seeking to replace existing water takes from within an over-allocated surface water catchment) to achieve “all of the reduction required to meet the allocation limit“. The submitters\footnote{W D Croft (PC7-139.7), Four Hooves Ltd (PC7-272.12), Bowden Environmental (PC7-84.15), C & S McAllister (PC7-255.25), Westburn Farm Ltd (PC7-377.13)} request that this matter is deleted, or alternatively, is amended to add a reference to Policy 4.50.

6.58. It is our view that the allocation limits and estimates of the current allocation have been prepared using the best available information. In the absence of evidence that the allocation limits and estimate of current allocation is incorrect, we recommend rejecting these submission points. Allowing further abstractions above environmental limits would be inconsistent with Objective B2 of the NPSFM.

6.59. As One Incorporated\footnote{PC7-387.29} requests a new condition be inserted into Rule 8.5.9 requiring consent holders to take and test a groundwater sample for nitrate nitrogen from the shallowest on-farm bore and provide the details of the sample analysis to the Council. The submitter has included the proposed wording of this condition within its submission. As One Incorporated states that this relief will greatly increase the data available to the Council when assessing trends and results from reductions in nitrate losses and will inform future planning approaches.

6.60. We note that the submitter requests this relief for multiple other provisions within Part C of PC7, including each nutrient management rule within Section 8. We consider that it would be more appropriate to consider the need for groundwater monitoring in relation to the provisions which manage farming land use activities and the associated discharge of nutrients, rather than through water permits. As such, we consider that it is not appropriate to include this condition for these rules.

6.61. Forest & Bird opposes Rule 8.5.9 in part and request amendments to matter of discretion (8) of this rule, which reads:

\begin{quote}
The potential to frustrate or prevent the attainment of the regional network for water harvest, storage and distribution, shown on the Regional Concept diagram in Schedule 16; and...
\end{quote}
6.62. Forest & Bird requests that this matter of discretion is amended to reflect the CWMS first order priority environment. The submitter does not propose specific amendments to provide for the relief sought. The submitter also seeks that Rule 8.5.9 is amended to give effect to Te Mana o te Wai. The submitter does not propose how this would be better achieved in the context of Rule 8.5.9.

6.63. While recognising the CWMS and the significance of Te Mana o te Wai, we note that without the provision of any specific relief or further information, it is difficult to understand how Rule 8.5.9 could be amended to address the submitter’s concerns. Therefore, in the absence of this information, we recommend rejecting this submission point.

6.64. Fish & Game\footnote{PC7-95.32} states that it supports the intent of Rule 8.5.9 but seeks that significant habitats of trout and salmon are protected. As such, the submitter requests that matter of discretion (12) is amended as per the following proposed wording to provide for this outcome:

   The proximity and actual or potential adverse environmental effects of water use on any significant indigenous biodiversity and adjacent dry land habitats or the significant habitat of trout and salmon; and

6.65. It is our view that the intent of this matter of discretion is largely to avoid the loss of significant indigenous biodiversity and habitats from water use and infrastructure in areas that previously have been dryland or otherwise undisturbed by development. As such, pressures on the habitat of trout and salmon will be controlled through environmental flow and allocation limits and other restrictions on water permits. On this basis, we recommend rejecting this submission point.

6.66. Forest & Bird\footnote{PC7-472.104} states that there is uncertainty with the use of the term “proximity” and seek amendments to matter of discretion (12) to clarify “where the activity should avoid” in order to give effect to section 6 of the RMA.

6.67. We consider that clarifying a set buffer distance that activities should avoid would be ineffective given that each individual activity will occur within a different location, with its own unique habitats and biodiversity features. Therefore, specifying a “blanket” setback throughout the Waimakariri sub-region would not be practical. We consider that the matter of discretion provides the ability to assess each application appropriately on a case-by-case basis. On this basis, we recommend rejecting the relief sought by Forest & Bird.

**Rule 8.5.10**

6.68. Federated Farmers supports Rule 8.5.10 and seeks that it is retained as notified.

6.69. Several submitters\footnote{PC7-84.16, W D Croft (PC7-139.8), Four Hooves Ltd (PC7-272.12), C & S McAllister (PC7-255.26), Westburn Farm Ltd (PC7-377.14)} request amendments to delete the reference to condition (2)(a) of Rule 8.5.9 within Rule 8.5.10 as they consider that it would be unfair that a non-compliance with this condition as a result of an incorrect allocation limit summation would mean that the activity would be classified as non-complying.

6.70. As discussed above, it is our view that the allocation limits and estimates of the current allocation have been prepared using the best available information. In the absence of
evidence that the allocation limits and estimate of current allocation is incorrect, we recommend rejecting these submission points. Allowing further abstractions above environmental limits would be inconsistent with Objective B2 of the NPSFM.

**Rule 8.5.11**

6.71. Federated Farmers supports Rule 8.5.11 and seeks that it is retained as notified.

6.72. Aratika Trust opposes Rule 8.5.11 and requests that it is deleted. The submitter does not provide any justification for deleting the rule.

6.73. We recommend retaining Rule 8.5.11 as notified.

**Tables 8-1 and 8-2**

**Submissions and Analysis**

6.74. In total, 67 submissions were received on Tables 8-1 and 8-2 (24 submissions on Table 8-1 and 43 submissions on Table 8-2).

6.75. Submitters largely oppose Tables 8-1 and 8-2 in part, with 49 submissions seeking amendments to the proposed environmental flow and allocation limits for Table 8-1 and Table 8-2. Eighteen submissions support part, or the entirety, of the flow and allocation limits proposed within Table 8-1 and Table 8-2.

6.76. Several submitters seek amendments to specific flow and allocation limits for SWAZs within Tables 8-1 and 8-2, while others submit on either one or both of the tables in a broader sense. For the purpose of this section, the submissions relating to the provisions have been grouped into and considered according to the following sub-topics:

- Table 8-1
  - General submissions on Table 8-1
  - Specific submissions on flow and allocation limits for SWAZs within Table 8-1
- Table 8-2
  - General submissions on Table 8-2
  - Specific submissions on flow and allocation limits for SWAZs within Table 8-2

**Table 8-1**

6.77. 24 submissions from 15 submitters were received on Table 8-1. Submitters generally oppose Table 8-1 in part, with 18 submissions seeking amendments to the flow and allocation limits.

6.78. Six submitters\(^ {1930}\) support the proposed flow and allocation limits in Table 8-1 and seek that they are retained as notified.

\(^{1930}\) For example; DOC (PC7-160.53), Kaiapoi-Tuahiwi Community Board (PC7-42.32), Oxford-Ohoka Community Board (PC7-148.30), Waimakariri DC (PC7-3.29)
6.79. It is noted that several submission points have been attributed to Table 8-1 within the SoDR, however the matters raised in these submissions appear to relate to Table 8-2\(^{1931}\). As such, the submission points that have been attributed to Table 8-1 have been discussed alongside the evaluation of the Table 8-2 submissions.

**General submissions on Table 8-1**

6.80. J Richardson\(^{1932}\) considers the proposed flow and allocation limits in Table 8-1 as notified are too weak and unlikely to meet the requirements of new “Freshwater Policy Statements”. The submitter requests that minimum flows are increased, and allocation limits decreased over time. The submitter does not propose any specific amendments to the flow and allocation limits as part of their submission. In the absence of any specific information, we recommend that this submission point is rejected.

**Specific submissions on flow and allocation limits for SWAZs within Table 8-1**

**Ashley River/Rakahuri**

6.81. Fish & Game states that Table 8-1 does not propose any “tangible step-change improvement” between 2019 and 2032 to the environmental flow and allocation limits within the A block of the Ashley River/Rakahuri. The submitter\(^{1933}\) considers that “significant claw back” in present over-allocation is required in order to restore healthy flows and prevent the loss of values in the river.

6.82. We note that the submitter has not provided any specific information regarding the timeframes to implement the proposed future reduction in over-allocation, nor do they quantify the amount of allocation that would need to be recovered in the Ashley River/Rakahuri. In the absence of this information, we recommend rejecting this submission point.

**Waikuku Stream**

6.83. Robinson Dairy Farm Ltd\(^{1934}\) opposes, and seeks the deletion of, the proposed minimum flow limits for Waikuku Stream. The submitter states that higher flow requirements have already been recently imposed during weekends to flush the stream and improve recreational opportunities (i.e. fishing).

6.84. Fish & Game states that Waikuku Stream will continue to be over allocated by 202 L/s under the proposed regime. The submitter considers that the proposed minimum flow of 150 L/s is an improvement, but still “well short” of a healthy ecological flow. The submitter requests that rather than capping the river at its existing use, over allocation should be phased out and a higher minimum flow should be set by 2032. The submitter does not propose a method to phase out over allocation or a preferred minimum flow for Waikuku Stream.

---

\(^{1931}\) Oxford-Ohoka Community Board (PC7-148.21), Kaiapoi-Tuahiwi Community Board (PC7-42.23), Rangiora-Ashley Community Board (PC7-149.23), Waimakariri DC (PC7-3.20), Woodend-Sefton Community Board (PC7-107.23)

\(^{1932}\) PC7-65.23

\(^{1933}\) PC7-95.43

\(^{1934}\) PC7-419.1
6.85. Ngāi Tūāhuriri Rūnanga notes that the current allocation for Waikuku Stream exceeds 200% of naturalised MALF, and the notified minimum flow is below the preferred ecological minimum flow\(^\text{1935}\). As a minimum, the submitter requests that minimum flows on the waterbody be raised to the ecological recommendation. Additionally, the submitter\(^\text{1936}\) proposes that an allocation limit could be set for Waikuku Stream so that cultural flows are achieved on 95% of days that they would naturally occur during the harvest season (August to March).

6.86. We note that the cultural flow recommendation for Waikuku Stream was 600 L/s and the Waimakariri ZC recommended a future goal of 250L/s\(^\text{1937}\), to be included in a future plan change, subject to monitoring\(^\text{1938}\). Flow information suggests that Waikuku Stream would flow naturally above 600 L/s for 30% of the year. No further modelling has been undertaken to determine the allocation limit which would allow flow to be natural during August to March for at least 95% of the time, however any allocation limit would likely be small. Continuing with the existing allocation limit but increasing the minimum flow would allow flows to remain ‘natural’ during periods of low flow and therefore protects the periods of highest stress to stream ecology from the effects of abstraction. As proposed by PC7, the minimum flow in Waikuku Stream will remain the same as the existing plan, effective 20 July 2019. From 20 July 2025\(^\text{1939}\) the minimum flow on Monday through Friday will be increased from 100 L/s to 150 L/s in line with the minimum flow in place for Saturday and Sunday.

6.87. Taking into account the requirement to consider and recognise Te Mana o te Wai, consistent with Objective AA1 of the NPSFM, we have considered the submission from Ngāi Tūāhuriri Rūnanga, the cultural flow requirements, the ZC recommendations and the impact on surface water abstractors. We note that the proposed minimum flow in Table 8-1 for the Waikuku Stream has a significant impact on abstractors reliability, with an average restriction of greater than 50%\(^\text{1940}\). While the proposed environmental flow and allocation regime for Waikuku Stream strikes a reasonable balance between impacts on flow reliability and the protection of instream values, we consider that a further increase in minimum flow to 250L/s for the Waikuku Stream in 2032 is a step towards better recognising Te Mana o te Wai. Therefore, we recommend accepting the submission from Ngāi Tūāhuriri Rūnanga in part.

Saltwater Creek (Sefton)

6.88. Several submitters\(^\text{1941}\) raise concerns with the use of the Toppings Road minimum flow site for Saltwater Creek and seek that it is replaced with the monitoring site at Factory Road (as referenced in Table 8-5). M Eder and GD Morriss state that there is a significant amount of additional water that enters Saltwater Creek downstream from Toppings Road and above their own intake. Neil Kerr Ltd also submits that additional sources contribute to flow in Saltwater Creek below Toppings Road, and a higher minimum flow at this site will trigger restrictions on its property before they are necessary.

---

\(^{1935}\) Submitter references Table 5-2 and Table 5-3 of Arthur J.; L Bolton-Ritchie and A Meredith (May 2019) Options and Solutions Assessment Water Quality, Aquatic Ecology and Biodiversity Report No. R19/76

\(^{1936}\) PC7-399.65

\(^{1937}\) Table 4.5 of the ZIPA

\(^{1938}\) Table 4.3 of the ZIPA – Rationale for the Ashley Rivers/Rakahuri and tributaries.

\(^{1939}\) This paragraph was prepared by Mark Megaughin (Hydrology)

\(^{1940}\) Harris, 2019

\(^{1941}\) M Eder and GD Morriss (PC7-201.1), Neil Kerr Ltd (PC7-335.3)
6.89. If the above relief is adopted, M Eder and GD Morriss support an increase in the minimum flow to 148 L/s and 200 L/s at their intake and Factory Road respectively. Alternatively, the submitter\textsuperscript{1942} seek that Table 8-1 is deleted. Neil Kerr Ltd\textsuperscript{1943} seeks that the amendments to the minimum flow for Saltwater Creek are deleted.

6.90. We note that Toppings Road is approximately 1500 metres upstream of Factory Road. Springs are located throughout the area and so flow generally increases in a downstream direction as further springs add flow to the river. Data available for these sites is very limited but does show an increase in flow between the two sites. No work has been undertaken to assess what a comparable minimum flow at Factory Road would be, and this would require a multi-year data collection programme to determine.

6.91. The Toppings Road site is a good place to collect robust gaugings whereas the Factory Road site is far more challenging hence there are issues with making this the minimum flow site for the whole SWAZ. In addition, Saltwater Creek is a particularly challenging zone to manage. It includes a large number of sub-catchments and the abstractions are distributed widely. We note that whilst there may be some technical merit in moving the minimum flow site relating to the submitters' water takes, this needs to be balanced with the requirement to manage all takes in the SWAZ. In this regard, we consider that the Topping Road site is the better management site. As such, we recommend rejecting the relief sought by these submitters.

6.92. Fish & Game considers the flow and allocation limits for Saltwater Creek do not go far enough to recognise the significance of the waterbody for salmonid spawning and indigenous fish species, and request that minimum flows are improved to prevent the loss of these values. The submitter has not proposed a specific minimum flow for Saltwater Creek to support their submission.

6.93. Ngāi Tūāhuriri Rūnanga notes that the current allocation for Saltwater Creek exceeds 200% of naturalised MALF, and the notified minimum flow is below the preferred ecological minimum flow\textsuperscript{1944}. As a minimum, the submitter requests that minimum flows on the waterbody be raised to the ecological recommendation. Additionally, the submitter proposes that an allocation limit could be set for Saltwater Creek so that cultural flows are achieved on 95% of days that they would be naturally during the harvest season (August to March).

6.94. The existing CLWRP minimum flow of 100 L/s is proposed to be maintained for the Saltwater Creek SWAZ, and increased to the ecological and cultural preferred minimum flow of 148 L/s in 2032. Currently, a minimum flow of 150 L/s applies to consented surface water takes within this SWAZ. However, these permits are not currently subject to partial restrictions. Part C of PC7 introduces partial restrictions for all surface water takes within the Waimakariri sub-region. The ZC concluded that the adoption of partial restrictions alongside an increased minimum flow would have too large an impact on users within the Saltwater Creek SWAZ. Therefore, they recommended that a higher minimum flow not be required until 2032 to give users time to prepare for an additional reduction in reliability. We agree that the approach recommended by the ZC is an efficient method for improving the flows in Saltwater Creek, over time, to allow existing users time to adapt to the proposed change.

\textsuperscript{1942} PC7-201.2
\textsuperscript{1943} PC7-335.4
\textsuperscript{1944} Submitter references Table 5-2 and Table 5-3 of J Arthur; L Bolton-Ritchie and A Meredith (May 2019) Options and Solutions Assessment Water Quality, Aquatic Ecology and Biodiversity Report No. R19/76
Table 8-2

6.95. 43 submissions from 21 submitters were received on Table 8-2. Similar to Table 8-1 above, submitters largely oppose Table 8-2 in part, with 31 submissions seeking amendments. 12 submissions support parts of or the entirety of Table 8-2. No submitters seek the deletion of Table 8-2.

General submissions on Table 8-2

6.96. Six submitters support all of the proposed flow and allocation limits in Table 8-2 and seek that they are retained as notified\(^\text{1945}\).

6.97. In terms of the timeframes to comply with new minimum flow requirements, several submitters\(^\text{1946}\) request that the 20 July 2027 implementation dates are amended to reflect most current consent expiry dates.

6.98. J Richardson submits that it appears little has changed in relation to the limits for some streams within Table 8-2. The submission includes a request to “increase limits to those actually likely to make a significant difference to water quality”\(^\text{1947}\). The submitter does not suggest any specific amendments to the flow and allocation regime in Table 8-2. In the absence of specific information from the submitter, we recommend rejecting this submission.

6.99. Ngāi Tūāhuriri Rūnanga\(^\text{1948}\) seeks that Table 8-2 is amended to reduce the allocation limits to an amount relative to the size of the waterbody, on the basis of how often the cultural flow is achieved, or alternatively, replace the limits by figures calculated relative to the MALF or natural average recharge of the waterways.

Specific submissions on flow and allocation limits for SWAZs within Table 8-2

Cam River/Ruataniwha

6.100. J C McIntosh notes that the minimum flow of 1000 L/s for the Cam River/Ruataniwha was set to dilute sewage originating from Rangiora. The submitter states that the sewage was removed from the Cam River/Ruataniwha approximately 10 years ago, and the river has since recovered. J C McIntosh notes the proposed minimum flow is high in comparison to the flow within the river prior to the irrigation season and considers 95% irrigation reliability is unrealistic under this regime, especially during drier periods. The submitter also considers irrigators abstracting from the Cam River/Ruataniwha will be penalised unfairly as the minimum flows for the tributaries of the river proposed under PC7 are lower than the mainstem. Given the above, the submitter\(^\text{1949}\) seeks that the minimum flow be amended to 800 L/s, referencing a Council technical report which is unnamed within the submission.

\(^\text{1945}\) For example; DOC (PC7-160.54), Rangiora-Ashley Community Board (PC7-149.3), Waimakariri DC (PC7-3.30)
\(^\text{1946}\) Bowden Environmental (PC7-84.29), W D Croft (PC7-139.13), Westburn Farm Ltd (PC7-377.22), Four Hooves Ltd (PC7-272.6)
\(^\text{1947}\) PC7-65.24
\(^\text{1948}\) PC7-399.69, PC7-399.76
\(^\text{1949}\) PC7-460.1
6.101. Bowden Environmental\textsuperscript{1950} considers that the proposed minimum flow of 1000 L/s for the Cam River/Ruataniwha is not based on science and requests that it is amended to 890 L/s. The submitter does not provide any justification or information to support the adoption of a minimum flow of 890 L/s.

6.102. I\textsuperscript{1951} note that the 1000 L/s minimum flow was originally put in place to aid in the dilution of point source effluent discharges in the Cam River/Ruataniwha. The unnamed Council technical report the submitter refers to is likely Main (2001)\textsuperscript{1952}. We consider that submissions seeking a reduction in the minimum flow to 890 L/s has some merit in regard to providing sufficient habitat availability for instream fauna\textsuperscript{1953}. However, 800 L/s (as per paragraph 4.97) falls short of this mark and does not provide sufficient protection of habitat for trout. Any reduction in flow will further exacerbate other water and habitat quality issues within the river e.g. further lack of flushing potential for contaminants such as excessive deposited fine sediments. The health of the river is already compromised so any reduction in minimum flow will further undermine the health of the aquatic ecosystem. Any reduction in minimum flow would further compromise cultural values by deviating further from the cultural minimum flow preference of 1200 L/s.

6.103. Taking into account the technical advice, and with reference to the section of this report on Te Mana o te Wai, we recommend rejecting the relief sought by the submitters.

\textbf{Cust River}

6.104. Several submitters\textsuperscript{1954} support the proposed minimum flows for the Cust River and seek that they are retained. Some submitters\textsuperscript{1955} also seek that a permanent recorder is established on the Cust River as the minimum flow site, rather than using a correlation with the Threlkelds recorder.

6.105. I\textsuperscript{1956} note that the existing system relies on a regression relationship developed by the Council which uses the flow recorded at Threlkelds Road on Cust Main Drain to estimate flow at Stokes Bridge on Cust River each day. This regression relationship has an $r^2$ value of 0.7 which means that by using the recorder at Threlkelds Road on Cust Main Drain we can estimate 70% of the variation of flow at Stokes Bridge on Cust River. In hydrology this is a good outcome, as often the $r^2$ value is much lower. Our confidence in the flow estimates which come from the regression relationship is high under low flows. This is because most of our concurrent flow gaugings (when the flow is manually checked at both points at the same time) are undertaken at low flows. We consider low flows to be at and around the minimum flow for the SWAZ. We have less certainty that the relationship is strong under high flow because it is hard to undertake concurrent gaugings in these conditions, however any uncertainty at high flows has

\textsuperscript{1950} PC7-84.26
\textsuperscript{1951} This paragraph was prepared by Mark Megaughin.
\textsuperscript{1952} Main, M. 2001 An assessment of flows for the maintenance of instream values of tributaries of the lower Waimakariri River, Environment Canterbury Report U01/100 (page 10).
\textsuperscript{1953} Estimated based on 90% preservation of brown trout habitat and a high retention of indigenous fish habitat – see Arthur et al, 2019
\textsuperscript{1954} W D Croft (PC7-139.10), Four Hooves Ltd (272.9), C & S McAllister (PC7-255.17), Rangvet Ltd (96.18), Westburn Farm Ltd (PC7-377.19)
\textsuperscript{1955} W D Croft (PC7-139.11), Four Hooves Ltd (PC7-272.8), C & S McAllister (PC7-255.18), Westburn Farm Ltd (PC7-377.20)
\textsuperscript{1956} This paragraph was prepared by Mark Megaughin
little bearing in the intended purpose of the regression relationships, which is to allow water
takes to be managed as per the minimum flow and allocation limits for the SWAZ.

6.106. We are aware that the recorder location at Stokes Bridge is incorrectly referred to as “Oxford Road” in Table 8-2 and should be amended to read “Rangiora-Oxford Road”.

6.107. The management focus for the Cust River over the life of PC7 is to:
- Recover over-allocation; and
- Undertake technical investigations into a revised minimum flow and allocation regime, based on a better understanding of water race inputs to the river, and the setting of a more robust management framework for these discharges.

6.108. The addition of a permanent recorder on the Cust River would assist in the second point above, making the science more robust, providing additional certainty for the Council and the community regarding any future changes required to the management regime. However, we note that the equation used currently to estimate flows at Cust River is robust, and there is unlikely to be sufficient scientific benefit or resource to support the requested amendments. Therefore, we recommend rejecting these submissions.

6.109. Fish & Game\(^{1957}\) submits that the proposed minimum flows for the Cust River are not sufficient to protect ecological values and request a preferred minimum flow of 150 L/s. Ngāi Tūāhuriri Rūnanga\(^{1958}\) also considers that the minimum flows for the Cust River should be increased to the ecological recommendation. Additionally, the submitter proposes that an allocation limit could be set for the Cust River so that cultural flows are achieved on 95% of days that they would be naturally during the harvest season (August to March).

6.110. The 150 L/s minimum flow was based on an estimate of 7DMALF which used the current measured flow record for the Cust River. The Cust River flow is currently enhanced by a number of discharges from water races which serve to increase the flow, and this therefore increases the 7DMALF. There is a high degree of uncertainty as to whether these discharges will continue. If the minimum flow was based on a 7DMALF calculated using the current measured flow record, and the discharges were then reduced, abstractors would likely be unable to take water for significant periods of time.

6.111. As such, the flow record was reanalysed for the period before the discharges occurred, and a naturalised 7DMALF was derived. A minimum flow of 60 L/s was then derived for that flow record. It was proposed that the 60 L/s minimum flow be used in PC7 as it will provide some ecological benefits for the river (compared to the status quo) and provide the abstractors some certainty about supply and reliability. If there is greater certainty about the management of discharges into the river over the long term, the minimum flow could be reassessed as part of a future plan review.

6.112. Several submitters\(^{1959}\) state that the current flow and allocation limits for the Cust River under the operative CLWRP framework allows unlimited B allocation and note that a limit for this block was not finalised during the ZIPA process. Therefore, the submitters assume the allocation limit of 131 L/s was determined from a summation of existing B block water permits and seek confirmation of whether this is the case. The submitters request that the B allocation

\(^{1957}\) PC7-95.44
\(^{1958}\) PC7-399.66
\(^{1959}\) W D Croft (PC7-139.12), Four Hooves Ltd (PC7-272.7), Bowden Environmental (PC7-84.27), Westburn Farm Ltd (PC7-377.21)
limit be amended to 1000 L/s to allow for the opportunity to store water during periods of higher flows in the Cust River.

6.113. Conversely, Ngāi Tūāhuriri Rūnanga considers that the proposed environmental limits for the Cust River are substantially below that needed to protect Te Mana o te Wai. The submitter seeks the deletion of the allocation limit for B permits unless it were used as similar to the ‘T’ allocation system for groundwater under the CLWRP, as a block only accessible when water from the A allocation block is surrendered.

6.114. We note that the ‘B block’ for the Cust River has been capped at the currently allocated rate (as described on page 395 of the Section 32 Report), and therefore effectively prevents any new users applying to take water from this block. In response to the submitters’ requests for a 1000 L/s B allocation for the Cust River, we note that hydrological studies were undertaken to assess the amount of water available within the river during high flows. The effects of a range of B block takes were assessed by Council ecologists. It was considered that the taking of any B block water would compromise the ecology of the Cust River and that none should be taken, particularly in the context of an already over-allocated A block.

6.115. However, the ZC reached the conclusion that removing the B block entirely would have too large an impact on the users of this block and determined that setting the B block limit at the current consented allocation was an appropriate compromise. Therefore, allowing any further abstraction of water from the Cust River above the currently consented allocation limits would move further away from ecological recommendations. As such, we recommend rejecting the submissions requesting a B allocation limit of 1000 L/s. Taking into account the impacts on existing abstractors, we also recommend rejecting the submission from Ngāi Tūāhuriri Rūnanga.

Cust Main Drain

6.116. Pineleigh Farm Ltd supports the proposed minimum flows and allocation limit for Cust Main Drain A permits of 230 L/s and 690 L/s respectively, highlighting that the resource is appropriately controlled and managed by the Cust Main Drain Water Use Group.

6.117. Ngāi Tūāhuriri Rūnanga also supports the proposed minimum flow for the Cust Main Drain as they consider it has been set at or above ecological recommendations.

6.118. Given the support from the submitters, we recommend retaining the flow and allocation regime for the Cust Main Drain as notified.

Silverstream

6.119. Fish & Game notes that the Kaiapoi River is a valuable fishery and thus maintaining fish passage for salmon is of high importance. The submitter seeks the minimum flow of 600 L/s from 20 July 2019 be amended to 900 L/s and requests further information from the Council on the proposed minimum flow for the Kaiapoi River. Ngāi Tūāhuriri Rūnanga

---

1960 PC7-399.7, PC7-399.8
1961 W D Croft (PC7-139.12), Four Hooves Ltd (PC7-272.7), Bowden Environmental (PC7-84.27), Westburn Farm Ltd (PC7-377.21)
1962 PC7-372.44
1963 PC7-95.97
1964 PC7-399.84
submits that the minimum flows on Silverstream should be raised at least to the ecological recommendation.

6.120. Under PC7, the Kaiapoi River refers only to the reach of river between the three-streams confluence and the Waimakariri River. The three-streams confluence is where Silverstream, Ohoka Stream and Cust Main Drain join. The reach of Kaiapoi River above the three-streams confluence is referred to as Silverstream.

6.121. In relation to Silverstream, the minimum flow was set using an ecological approach, based around the naturalised 7DMALF estimate for the stream. Flow data was available from a minimum flow site on Silverstream, just above the three-streams confluence. The justification for the selection of the minimum flow for Silverstream is provided in Arthur et al, 2019. Ecological analysis by Golder Associates in 2009 showed that a minimum flow of 1150 L/s would retain at least 90% habitat suitability for both adult and juvenile brown trout, and would also likely protect large eel habitat. The ZC considered that the economic cost of both the recommended ecological flow and the cultural recommendation of 1200 L/s, would be too great. However, the current WRRP minimum flow of 600 L/s was noted as being excessively low and not providing adequate protection for instream values. As such, an intermediate flow of 900 L/s was recommended by the ZC, in part to provide water depths for salmon passage, as well as a non-statutory future goal of 1200L/s for “the next plan change”. We have specifically considered Te Mana o te Wai when evaluating submissions on PC7, and in this case, we agree that there is a need to further increase the minimum flow for Silverstream, to better provide for instream values. We therefore recommend accepting the submission from Ngāi Tūāhuriri Rūnanga and recommend adopting the cultural flow requirements of 1200 L/s (which is the ZC “future goal”) for Silverstream, from 20 July 2032. The recommend date for the increased minimum flow provides water users with an additional 5 years to prepare for this change.

6.122. In relation to the Kaiapoi River, there is no minimum flow set specifically to protect the waterbody. The protection of this reach comes as a function of the minimum flows set on Silverstream, Ohoka Stream, Cust Main Drain and the Cam River/Ruataniwha, each of which flow into the Kaiapoi River. During the development of the technical work, concerns surrounding water quality of Kaiapoi River were not raised until the end of the process and the technical work to explore this could not be undertaken. This is something that could be explored during the coming years and included in a future plan review. The Kaiapoi River will benefit from the increased minimum flows at Silverstream and Ohoka Stream.

6.123. Waimakariri DC and several community boards request a new minimum flow gauge location in the lower Kaiapoi River to better measure lower river flows and tidal impacts. They consider that collecting data from this site over time will provide enough information to determine a more suitable minimum flow for the lower Kaiapoi River in consultation with stakeholders. The submitters also suggest that this could address the balance of effects from salt and freshwater interaction, whilst allowing for the need to drain Kaiapoi groundwater to ensure ongoing functioning of the storm water system.

6.124. We understand that the submitters requests are for a flow gauge in the lower reach of the Kaiapoi River which can collect data to be used in a future plan review, rather than a new
minimum flow site to be included in PC7 for the management of current takes. The existing site (Silverstream at Neeves Road) is a logical location to measure river flow, and a sensible place to locate a minimum flow site by which abstractions from Silverstream can be managed. We consider that the current site should remain for the management of abstraction from Silverstream in PC7.

6.125. The cumulative effects of abstractions on river flows at Kaiapoi River (through Kaiapoi town centre) comes not just from Silverstream abstraction, but also abstractions from Ohoka Stream, Cust Main Drain, Cust River and Cam River/Ruataniwha. Each of these rivers are managed by their own minimum flow site, located some way upstream on each river.

6.126. There is some technical merit in the installation of a flow gauge on the Lower Kaiapoi River. After a period of data collection, the flow record from the lower Kaiapoi River could be investigated in combination with the flow records from the other sites mentioned above to assess the relative impact of abstractions for the Lower Kaiapoi River.

6.127. We acknowledge that data from such a gauge could be potentially useful to inform the setting of future minimum flow limits, but do not see that it would be useful as a minimum flow site used to directly control abstraction. Either way it does not appear that this is a matter for PC7, rather it forms part of a decision to be made regarding the allocation of science resources over future LTP periods. Therefore, we recommend rejecting the relief sought by the submitters.

6.128. Wai Eyre Farm Partnership opposes the Silverstream provisions in Table 8-2 and considers the justification for the minimum flow increase for A permits from 600 L/s to 900 L/s is unclear. The submitter states that the Council lacks a clear understanding of the influences of the Eyre and Waimakariri Rivers on Silverstream, and considers further information and data is required before any amendments to the flow regime can occur. Conversely, Kaiapoi-Tuahiwi Community Board request that given its poor water quality, there should be an “urgent increase to the minimum flow” within the Kaiapoi River.

6.129. As previously discussed, the reasoning used to inform the amendments to the flow regime for Silverstream is provided in technical reports supporting Part C of PC7. The justification for the increase in minimum flows for Silverstream in 2027 states that the current minimum flow of 600 L/s provides poor protection to instream values and exacerbates water quality issues at low flows. The recommended minimum flow of 900 L/s is less than both the preferred ecological and cultural minimum flows for Silverstream. Therefore, we consider that maintaining the status quo approach would move further away from these recommendations. It would also not be consistent with the outcomes sought for the Waimakariri sub-region to improve flows and water quality in spring-fed streams, nor would it uphold Te Mana o te Wai and protect the mauri of Silverstream. On this basis, we recommend rejecting the submission from Wai Eyre Farm Partnership. The timing for the increase in minimum flow also considers the impacts on existing users and providing time to adjust to lower reliability of supply. An immediate increase would not provide the necessary time for users to adapt and we therefore do not recommend adopting the submission from the Kaiapoi-Tuahiwi Community Board.

6.130. Eyreton Produce Ltd did not submit on the flow and allocation limits within Table 8-2 but states within its submission that the Silverstream SWAZ is 43% allocated. The submitter notes that the modelling they were presented at “one of the public meetings” assumed 100% allocation. Eyreton Produce Ltd considers 100% allocation is unlikely to ever be required given

---

1969 PC7-274.27
the surrounding area is “almost completely subdivided into lifestyle blocks”. The submitter\textsuperscript{1970} requests that allocation modelling for Silverstream be based on “reality” rather than figures that won’t be achieved.

6.131. We acknowledge that the Silverstream SWAZ is not fully allocated, with technical reports stating that just over half of the existing allocation limit under the WRRP is consented in this catchment (591 L/s of the 1000 L/s limit within the WRRP)\textsuperscript{1971}. However, this allocation limit of 1000 L/s is more than double the ecological recommendation of 479 L/s, which is based on 30% naturalised 7DMALF as per proposed NES guidelines on Ecological Flows and Water Levels (MfE, 2008). The ZC recommended via the ZIPA that allocation be capped at the currently consented limit to improve the protection of instream values (in conjunction with an increase in minimum flow). We consider that allowing any further abstraction would compromise ecological and cultural values within Silverstream, and be inconsistent with direction within the NPSFM to avoid over-allocation of fresh water (Objective B2). Therefore, we recommend rejecting the relief sought on this basis.

Eyre River and Kairaki/Mcintosh

6.132. Bowden Environmental states that it is unclear why the Eyre River is included in Table 8-2 as there are no provisions that relate to the take and use of water from this SWAZ. The submitter\textsuperscript{1972} seeks that this row is deleted from Table 8-2. The submitter questions whether the intent of including the Eyre River is to prohibit takes from the river and stream depleting groundwater, or to continue the operative provisions within the CLWRP that do not provide any restrictions for this waterbody. In contrast, the submitter notes that policy guidance in PC7 clearly prohibits takes from Kairaki/McIntosh and this is reflected in Table 8-2.

6.133. Table 8-2 reflects that there is no surface water available for abstraction from the Eyre River SWAZ. The Eyre River is generally dry, but can flow for the length of the river, particularly after high or sustained rainfall (typically in winter). On this basis, and as there are currently no surface water abstractions from the river, an allocation limit stating “no surface water allocation” was adopted. In relation to the submitter’s request to delete the Eyre River row from Table 8-2, we note that there is currently no plan limit for the water body. Therefore, it is important to ensure that this water body is included so that any potential abstractions in future are prohibited. We recommend rejecting the submission from Bowden Environmental.

Submissions on new definitions

Surface Water Allocation Zone

6.134. Within Part C of PC7, water quantity is managed within five SWAZs for the Ashley River/Rakahuri FMU and 14 SWAZs for the Northern Waimakariri Tributaries FMU. New environmental flow and allocation limits are set for these SWAZs in Tables 8-1 and 8-2 respectively. Table 8-3 also references three SWAZs. Consequential amendments to the Planning Maps to include SWAZs are also proposed.

\textsuperscript{1970} PC7-231.5
\textsuperscript{1971} Table 6-3 of the Waimakariri Land and Water Solutions Programme Options and Solutions Assessment – Surface Water Quantity technical report
\textsuperscript{1972} PC7-84.28
6.135. “Surface Water Allocation Zone” is defined within Section 8 of the CLWRP as:

*means the areas identified as Surface Water Allocation Zones on the Planning Maps.*

6.136. In addition to Tables 8-1 and 8-2, the term is also referenced within Policies 8.4.14 and 8.4.18 and Rules 8.5.9, 8.5.12, 8.5.14, 8.5.17 and 8.5.27.

6.137. No submissions were received on the definition of SWAZ, or with respect to their location and extent within the Planning Maps. Therefore, we recommend that the definition is retained as notified.

6.138. We note that the reference to “SWAZ” in Section 8 is inconsistent. For example, proposed Table 8-1 deletes the reference to “river or stream” and replaces this with “SWAZ”. However, this amendment has not been made for Tables 8-2 or 8-3. The proposed amendments to the CLWRP Planning Maps, and several proposed policies and rules, refer to the waterbodies within these tables as SWAZs. It is our understanding that the reference to “river or stream” in Table 8-2 and 8-3 is an error. To ensure the effective implementation of the provisions within Section 8, we recommend that Tables 8-2 and 8-3 are amended to reference “SWAZs”.

While no specific submissions have been received on this issue, it is our opinion that this matter can be addressed as a minor correction under clause 16(2) of Schedule 1 of the RMA.

**Waimakariri Pro-rata Partial Restrictions**

6.139. Waimakariri Pro-rata Partial Restrictions is defined within Part C of PC7 as:

*means, with regard to abstraction restrictions, the proportional reduction of an abstraction that is required whenever the flow at the minimum flow site, as estimated by the Canterbury Regional Council, is less than the sum of the applicable minimum flow and the applicable allocation limit.*

6.140. The term is referenced within Policy 8.4.12 and Rule 8.5.6.

6.141. No submissions were received on the definition of Waimakariri Pro-rata Partial Restrictions. However, it is our view that there is an opportunity to better align the definition of “Waimakariri Pro-rata Partial Restrictions” with the definition of “pro-rata partial restrictions” proposed for Section 14 of the CLWRP (Part B of PC7). It is our understanding that both definitions have the same meaning, and therefore should say the same thing.

6.142. We also note that if a waterbody has both an A allocation for abstraction and an A allocation for Mahinga Kai, the partial restrictions should start at the sum of the minimum flow and the two allocation limits. The proposed definition does not specifically provide for this situation, and it is our view that additional clarification is necessary to ensure the flow in the waterbody does not fall below the minimum flow as a result of abstraction. While there are no submissions specifically on the definition, it is our view improvements can be made using the scope from the Pareora Catchment Society Inc’s 1973 submission where they request that PC7 be re-written for clarity with accurate definitions.

6.143. We therefore recommend that the definition of “Waimakariri Pro-rata Partial Restrictions” is amended as per Appendix E.

---

1973 PC7-108.14
7. Quantity – Abstraction of Groundwater

Rules 8.5.12 to 8.5.16

Background

7.1. This section discusses the provisions in Part C of PC7 that introduce a new rule framework for the take and use of groundwater within the Waimakariri sub-region.

7.2. Rules 8.5.12 to 8.5.13, which enable the take and use of groundwater from a “Transfer Allocation” that will replace an existing surface water take or groundwater take with a direct, high or moderate stream depletion effect, have previously been addressed within this report.

7.3. Rules 8.5.14 to 8.5.16 prevail over region-wide Rules 5.128 to 5.130 and manage the take and use of groundwater that is not covered under the “Transfer Allocation” provisions listed above (Rules 8.5.12 to 8.5.13).

7.4. Table 8-4 sets groundwater allocation limits for six groundwater allocation zones within the Waimakariri sub-region and includes limits for both A Permits and Transfer Permits. The submissions on the transfer allocation within Table 8-4 has previously been covered within Part 5, Section 5 of this report. This section of the report addresses the submissions on the proposed A Permit allocation within Table 8-4.

7.5. The Kowai GAZ is located within both the Waimakariri and Hurunui-Waiau sub-regions, and as such a consequential amendment to Table 6 within Section 7 of the CLWRP is proposed to reflect the amendments to the allocation limits for the Kowai GAZ in Section 8.

7.6. For the purposes of this section, the submissions have been grouped into and considered according to the following sub-topics:

- General submissions on groundwater take and use rules within Section 8
- Submissions on Rules 8.5.14 to 8.5.16
- Submissions on Table 8-4
- Submissions on Table 6

General submissions on groundwater take and use rules within Section 8

7.7. This section of the report describes several general submissions on the groundwater provisions that apply to several proposed groundwater take and use rules within Section 8 of the CLWRP.

7.8. As One Incorporated\(^\text{1974}\) requests a new condition to be inserted into Rules 8.5.12 and 8.5.14 that requires consent holders to take and test a groundwater sample for nitrate nitrogen from the shallowest on-farm bore and provide the details of the sample analysis to the Council. The submitter has included the proposed wording of this condition within their submission. As One Incorporated states that this relief will greatly increase the data available to the Council when assessing trends and results from reductions in nitrate losses and will inform future planning approaches.

\(^{1974}\) PC7-387.30, PC7-387.31
7.9. We note that the submitter requests this relief for multiple other provisions within Part C of PC7, including each nutrient management rule within Section 8. We consider that it would be more appropriate to consider the need for groundwater monitoring in relation to the provisions which manage farming land use activities and the associated discharge of nutrients, rather than through water permits. As such, we consider that it is not appropriate to include this condition for these rules.

7.10. Larundel Dairy Partnership states that the distinction between Rules 8.5.12 and 8.5.14 is unclear (as both refer to stream depleting groundwater takes). The submitter\textsuperscript{1975} requests that these rules are deleted or amended (including possibly combining the rules) to make the operation of the provisions clearer as to how applications “are to be approached”. The submitter also considers that a number of conditions in these rules are very specific and result in activities becoming prohibited under the associated rules even where the exceedances are less than minor. Larundel Dairy Partnership\textsuperscript{1976} requests that “prohibited” is amended to “non-complying” in such instances.

7.11. As previously discussed, Rule 8.5.12 manages the take and use of groundwater that will replace an existing surface water or stream depleting groundwater permit with a take from deep groundwater. Rule 8.5.14 covers the take and use of groundwater that will not replace a surface water or stream depleting groundwater permit. We consider that although both rules reference stream depleting groundwater takes, there is sufficient clarity in the wording of the rules and associated conditions as to which activities are managed by each rule. Therefore, we recommend rejecting the relief sought by the submitter as it is necessary to provide for clear and separate consenting pathways for these activities.

7.12. Federated Farmers\textsuperscript{1977} requests that matter of discretion (8) of Rule 8.5.12 and matter of discretion (13) of Rule 8.5.14, relating to adverse effects on Ngāi Tahu values or on sites of significance to Ngāi Tahu including wāhi tapu and wāhi taonga, are deleted until further consultation with land owners and managers has been undertaken. As discussed in Part 3 Section 4 of this report, Federated Farmers has requested this relief for multiple provisions throughout PC7. For the reasons previously set out in that section, we recommend rejecting this submission.

Rules 8.5.14 to 8.5.16

7.13. A total of twenty-one submissions were received on Rules 8.5.14 to 8.5.16. Three submissions oppose one or more of the rules in their entirety and two submissions seek the retention of the provisions.

7.14. The Egg Producer Federation NZ and Poultry Industry Association considers that the groundwater allocation limits and associated conditions in proposed Rules 8.5.14 and 8.5.15 may be difficult for the poultry industry to achieve, particularly for existing farms requiring replacement consents where groundwater is used for shed washdown, irrigation or stockwater. The submitter states that replacement water permits may not be sufficient to support existing poultry farm needs and there is a risk that these permits may not be granted. The submitter\textsuperscript{1978} requests that the above provisions are amended to provide exemptions for

\textsuperscript{1975} PC7-179.3, PC7-179.50
\textsuperscript{1976} PC7-179.4
\textsuperscript{1977} PC7-430.110
\textsuperscript{1978} PC7-197.17
reasonable water use for lawfully established poultry farms requiring replacement consents for shed washdown and irrigation.

7.15. We acknowledge that the lower groundwater allocation limits within the Waimakariri sub-region may present some challenges for landowners seeking new water, however these limits are applicable to all water users, and no special exemptions should be provided for particular land uses. Allowing over-allocation of fresh water to occur, regardless of what the intended use of the water is, would be inconsistent with Objective B2 of the NPSFM. On this basis, we recommend rejecting this submission.

7.16. Several submitters\textsuperscript{1979} note that abstraction to enable the irrigation of Regeneration Zone Land, once new recreational facilities are constructed, will be subject to Rule 8.5.14. They raise concerns about whether a consent would be granted for this activity given that groundwater and surface water is over-allocated “through the whole Kaiapoi River system”.

7.17. The submitters state that in accordance with condition (1) of Rule 8.5.14 (and associated Rule 8.5.16) abstractions are prohibited if they exceed a minimum flow limit regardless of whether there are any ecological effects in the tidal reaches of the lower river resulting from a temporary abstraction, or whether there are areas of very high groundwater that require drainage. The submitters consider that this minimum flow requirement relates only to the abstraction and does not take into account ecological effects, the return of dewatering water to a downstream location, or the period of time until the take is returned. The submitters seek that Rule 8.5.14 is amended so that abstractions from the tidal reaches of waterways and downstream wetter catchments where there is high shallow groundwater do not become prohibited if they exceed minimum flow limits.

7.18. We note that the proposed flow and allocation limits are based on the best available information, arising from the technical work that has been completed for PC7. Adopting the relief sought by the submitters without a full technical assessment may have unintended consequences on the hydrology of the river which have not been considered as part of this process. Therefore, with limited information provided by the submitter as to how these abstractions may function in practice, it is difficult for us to assess the potential implications of these activities. Furthermore, allowing further abstractions above set environmental limits would be inconsistent with the requirements of the NPSFM to avoid any further over-allocation of fresh water and phase out existing over-allocation\textsuperscript{1980}. Given the above, and in the absence of specific supporting information, we recommend rejecting this submission. We note that water taken and used for the irrigation of recreational facilities may not require a separate water permit, as the use is likely to be provided for under a ‘community water supply’, as defined in Section 2 of the CLWRP.

7.19. Bowden Environmental states that it considers the calculation of surface water and groundwater allocation limits within Part C of PC7 are incorrect or otherwise not based on science. On this basis, the submitter requests several amendments to Rules 8.5.14 to 8.5.16.

7.20. In particular, Bowden Environmental\textsuperscript{1981} seeks that condition (2)(a) of Rule 8.5.14 is amended to remove the reference to the allocation limits in Tables 8-1, 8-2 and 8-4, and in condition (2)(b), replaced with “all consented takes that exist as at the date of the Plan”. Additionally,

\textsuperscript{1979} Oxford-Ohoka Community Board (PC7-148.20), Kaiapoi-Tuahiwi Community Board (PC7-42.21), Rangiora-Ashley Community Board (PC7-149.21), Waimakariri DC (PC7-3.18), Woodend-Sefton Community Board (PC7-107.21)

\textsuperscript{1980} Objective B2 of the NPSFM 2014 (amended 2017)

\textsuperscript{1981} PC7-84.17, PC7-84.18
the submitter requests that condition (2)(b) of Rule 8.5.14 is amended to refer to all consented
takes that exist as at the date of the Plan rather than potentially incorrect summations within
Tables 8-1, 8-2 and 8-4.

7.21. Bowden Environmental also seeks several consequential amendments to Rules 8.5.15 and
8.5.16, including deleting the reference to condition (2)(b) of Rule 8.5.14 within Rule 8.5.16 so
that an exceedance of the allocation limits in Table 8-4 does not become a prohibited activity.

7.22. As discussed previously, it is our view that the allocation limits and estimates of the current
allocation have been prepared using the best available information. This is further discussed
under Table 8-4 (below). Allowing further abstractions above environmental limits would be
inconsistent with Objective B2 of the NPSFM and we therefore recommend rejecting the
request from Bowden Environmental to delete the reference to condition (2)(b) of Rule 8.5.14
within Rule 8.5.16.

7.23. Bowden Environmental also notes that the requirements for stream depletion assessments
are set out in Schedule 9 of the CLWRP and therefore requests that condition (1) of Rule 8.5.14
is replaced with condition (2) of Rule 5.128 (with the necessary amendments to refer to Tables
8-1 and 8-2). We note that condition (1) of Rule 8.5.24 refers to “stream depleting
groundwater”, which is defined in Section 2 of the CLWRP. The definition states “means
groundwater abstraction that has a direct, high, medium or low stream depletion effect,
calculated in accordance with Schedule 9 of this Plan”. Given the definition already includes
reference to Schedule 9 and it is our view that it does not also need to be included within the
condition. We recommend rejecting this submission point.

7.24. Federated Farmers supports Rules 8.5.15 and 8.5.16 and seeks that they are retained as
notified. The submitter considers the non-complying activity status of Rule 8.5.15 is
appropriate for the replacement of existing consents.

Table 8-4

7.25. Fourteen submissions from eleven submitters were received on Table 8-4. Seven submissions
support Table 8-4.

7.26. One submission point opposing Table 8-4 was included within the SoDR. However, the
matters raised within this submission point appear to relate to proposed Policy 8.4.24. For
this reason, this submission point has been addressed elsewhere in this report.

7.27. Five submitters support all of the proposed limits set within Table 8-4 and seek that the
table is retained as notified. Ngāi Tūāhuriri Rūnanga support the proposed groundwater
allocation limit reductions within the Ashley and Cust Groundwater Allocation Zones.

---

1982 PC7-84.21
1983 PC7-430.116, PC7-430.117
1984 Aratika Trust (PC7-199.31)
1985 Oxford-Ohoka Community Board (PC7-148.33), Kaiapoi-Tuahiwi Community Board (PC7-42.35), Rangiora-
Ashley Community Board (PC7-149.35), Waimakariri DC (PC7-3.32), Woodend-Sefton Community Board (PC7-
107.35)
1986 PC7-399.13
7.28. Ngāi Tūāhuriri Rūnanga\textsuperscript{1987} and Fish & Game\textsuperscript{1988} also support the framework within Table 8-4 for replacing existing stream-depleting groundwater takes with deep groundwater takes within over-allocated catchments. However, both submitters seek further amendments to the proposed allocation limits. The further amendments sought by Ngāi Tūāhuriri Rūnanga are applicable to the entire proposed flow and allocation regime within Part C of PC7. Therefore, these submission points attributed to Table 8-4 have been covered above in the section of this report titled “General submissions on the water quantity provisions”.

7.29. Waimakariri NGF\textsuperscript{1989} and Claxby Irrigation Limited\textsuperscript{1990} state that they support the requirement for groundwater allocation limits, however they do not support the proposed limits in Table 8-4. The submitters consider that the proposed limits do not recognise the complexity of varying depths of aquifers, amongst “other modelling limitations”. The submitters do not provide detail on any specific groundwater modelling limitations within their submissions. Given the above, the submitters request that Table 8-4 is deleted in its entirety, and that the operative allocation limits under the CLWRP are continued.

7.30. Bowden Environmental submits that the proposed groundwater allocation limits within Table 8-4 have not been determined as sustainable limits or limits beyond which adverse effects are shown to occur. Rather, the submitter considers that the proposed limits are based on an expert opinion of the stage that “a closer examination of sustainability is required”. On this basis, the submitter is concerned that the limit reductions are not based on resource management assessments and therefore may unnecessarily restrict further economic growth and prosperity within the Waimakariri sub-region. The submitter states that if there are water quality effects as a result of land use changes brought about by irrigation then these will be covered under the nutrient management provisions within PC7. Bowden Environmental\textsuperscript{1991} requests that the operative allocation limits under the CLWRP are retained as “interim” limits. The submitter does not provide an explanation of what ‘interim’ means in the context of its submission.

7.31. We note that the setting of new groundwater allocation limits is proposed to prevent the decline of groundwater levels, protect well supply reliability and surface water flows as well as providing for a transfer allocation (as an important part of the wider solutions package for the Waimakariri sub-region and a means for reducing over-allocation). For some GAZ, the proposed A Permit Allocation Limits provide for all existing consented allocation and an allowance for some new abstractions (equal to approximately 10% of the current allocation). Continuing to manage groundwater abstractions under the status quo approach would not achieve the objectives of the CLWRP or give effect to the NPSFM. A full efficiency and effectiveness assessment of the proposed provisions for managing groundwater in the Waimakariri sub-region is included in Section 15.6 of the Section 32 Report, where the Council concluded that the proposed provisions are the most appropriate way to achieve the Objectives of the CLWRP\textsuperscript{1992}. The methodologies used to calculate the groundwater allocation limits for the Waimakariri sub-region are set out within the technical reports supporting PC7.

7.32. With reference to Part 1, Section 3, we acknowledge the Court has expressed concerns with determining an allocation limit based on the sum of existing resource consents\textsuperscript{1993}.

\textsuperscript{1987} PC7-399.12
\textsuperscript{1988} PC7-95.46
\textsuperscript{1989} PC7-425.29
\textsuperscript{1990} PC7-433.22
\textsuperscript{1991} PC7-84.30
\textsuperscript{1992} Page 412 of the Section 32 Report for PC7 to the CLWRP.
\textsuperscript{1993} Lindis Catchment Group Inc v Otago Regional Council [2019] NZEnvC 166, at [3].
Notwithstanding these concerns, there are also difficulties associated with determining an accurate estimate of the total consented groundwater allocation.

7.33. Etheridge (2016) provides information on current groundwater allocation rates in the Waimakariri zone as shown in

7.34. Table 0-1 below. The possible range relates to uncertainty over the rate of stream depletion.\(^{1994}\) The data show that with the exception of the Eyre River GAZ, none of the GAZs are fully allocated, even if there is low stream depletion (as per the CLWRP definition).

<table>
<thead>
<tr>
<th>Groundwater Zone</th>
<th>Allocation limit (m(^3)/year)</th>
<th>Possible range of total allocated(^3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ashley</td>
<td>29,400,000</td>
<td>35 – 72%</td>
</tr>
<tr>
<td>Cust</td>
<td>56,300,000</td>
<td>21 – 40%</td>
</tr>
<tr>
<td>Eyre River</td>
<td>99,070,000</td>
<td>76 – 119%</td>
</tr>
<tr>
<td>Kowai</td>
<td>17,400,000</td>
<td>39 – 72%</td>
</tr>
<tr>
<td>Loburn</td>
<td>40,800,000</td>
<td>0.04 – 2.2%</td>
</tr>
</tbody>
</table>

7.35. The estimate of current allocation also changes over time due to consent renewals. Two things may change as part of this process:

a. A site-specific stream depletion assessment is generally undertaken. This can show that the take is stream depleting and hence a proportion of the water is allocated to the affected surface water body and removed from the groundwater allocation. This makes more groundwater available for allocation. If this happens for lots of consents on renewal it could make extra groundwater available for allocation and result in increased groundwater abstraction. Increased groundwater abstraction could cause adverse effects which have not been assessed or accounted for.

b. An annual volume is assigned. Many consents do not currently have an annual volume limit, which is why the groundwater allocation is based on an estimated annual volume (EAV). If lots of consents are assigned a lower annual volume limit than the previous EAV figure, this would again make more water available for allocation. The effects of any such increase in actual abstraction have not been assessed. Conversely, if the consented annual volume proved to be higher than the EAV for lots of consents, the groundwater allocation would increase, potentially to the point at which the zone becomes over allocated. This means that the 10% intended for new abstractions would not be available.

7.36. In our view, amendments to Table 8-4 are required to set groundwater allocation limits that provide for existing users and an additional 10% allocation for new takes\(^{1995}\), however the suggested amendments proposed by Bowden Environmental do not provide plan users with any greater certainty. We note that any change to the A Permit Allocation Limit will require a corresponding change to the Transfer Permit Allocation so that the total allocation limit does not increase. We understand that the Council is currently undertaking a project to determine

\(^{1994}\) The lower figures are based on stream depletion modelling results which show a large proportion of abstracted groundwater coming from surface water. This water is excluded from the calculated allocation. The higher figure assumes low stream depletion (as per the CLWRP definition) and therefore provides a severe worst case assessment of current allocation.

\(^{1995}\) Waimakariri ZIPA recommendations 5.1, 5.2, 5.4 and 5.6.
the consented allocation of all water allocation zones within Canterbury, and the results of this project will likely be available at the hearing to assist in determining an accurate and appropriate A Permit Allocation Limit that provides the head room envisioned by the ZC. In the absence of this information, we recommend that the allocation limits proposed in Table 8-4 are retained as notified.

7.37. Fish & Game raises concerns with the relationship between groundwater allocation and surface water flows. The submitter considers that abstraction from deep aquifers can “significantly influence surface water losses”. The submission1996 refers to very low flows in the Selwyn River at Coes Ford that occurred during the 2013-16 drought period as an example of when the lowering of both shallow and deep ground water associated with groundwater abstraction impacted surface water flows.

7.38. The submitter considers that further “claw back” is required over time to alleviate over allocation. Therefore, Fish & Game1997 requests amendments to Table 8-4 to provide for staged reductions in groundwater allocation of at least 10% by 2027 and a further reduction by 2032 in over-allocated zones in order to begin restoring a heathy water balance equilibrium in the Zone.

7.39. It is assumed that over-allocated zones, in this context, means the GAZs within which surface water allocations exceed the proposed allocation limits. The over-allocated water bodies comprise:

- Ashley River/Rakahuri (which borders the Cust, Ashley, Kowai and Loburn Fan GAZs)
- Saltwater Creek (within Kowai GAZ)
- Taranaki Creek, Waikuku Stream and Little Ashley Stream (Ashley GAZ)
- Cust River and Cust Main Drain (Cust GAZ)
- Ohoka Stream and Courtenay Stream (Eyre River GAZ)

7.40. Over-allocated surface water bodies are therefore located within or immediately adjacent to all five of the Waimakariri GAZs.

7.41. Groundwater allocation limits for all Waimakariri GAZs were based on the “Second Order” calculations presented in Scott (2004) and Dodson et al. (2012). These calculations set the allocation limit as 50% of average annual land-surface recharge including the recharge component contributed by intermittent streams.

7.42. Fish & Game’s submission1998 considers that abstraction from the deep aquifer can significantly influence surface water losses and refers to the very flows in the Selwyn River at Coes Ford during the 2013-16 drought period as an example of when the lowering of both shallow and deep ground water associated with groundwater abstraction impacted surface water flows.

7.43. We agree with the conclusions made by Fish & Game in relation to the influence of abstraction from deep groundwater on the Selwyn River. The CLWRP seven and 150 day stream depletion rules and use of 50% of the long-term average recharge to define allocation limits provides a means by which the effects of groundwater abstraction on stream flows can be controlled under “average” conditions (under which the aquifer is fully recharged over the winter months, between irrigation seasons). However, it is noted these controls are less effective

1996 PC7-95.46
1997 PC7-95.46
1998 PC7-95.46
during extended dry periods. The 2016 Super El Niño event is a good example of this: previous technical work undertaken in 2017\(^{1999}\) indicates that land surface recharge rates during the 2015-2017 period were probably more than 50% below average and hence the aquifer was not recharged back to normal levels over the winter months. If 50% of groundwater recharge is abstracted and recharge is 50% below average, then 100% of groundwater recharge is being abstracted. If this occurs over two consecutive years, aquifer storage becomes depleted, groundwater levels decline and baseflows in rivers and streams reduce significantly or can cease altogether as per the Coes Ford (Selwyn River) example referred to in the Fish & Game submission. This is a particularly important point because the frequency and severity of droughts is increasing globally with climate change.

7.44. Appendix D.5 to this report contains a summary of information on water budgets, current and proposed allocation rates in relation to groundwater recharge and a discussion of the effects of future improvement in irrigation efficiency on stream baseflows. This information sheds further light on the concerns raised in the Fish & Game submission discussed in paragraph 5.4 above.

7.45. Although groundwater allocation limits in the Waimakariri sub-region were not originally set at a level to specifically protect stream baseflows during extended dry periods, the impacts of groundwater abstraction on stream baseflows in the Waimakariri sub-region have been much less than those in the Selwyn sub-region because:

a. The effects of groundwater abstraction on stream baseflows in Waimakariri sub-region are currently mitigated by race losses and have also been mitigated by inefficient irrigation; and

b. Groundwater on the Ashley, Cust, Kowai and Loburn Fan GAZs has not been fully allocated and dry year usage rates represent less than 50% of recharge in those years; this means that some water is still available to support baseflows.

7.46. Based on the above information and that described in Appendix D.5, we consider that the proposed groundwater allocation limits are sustainable and support baseflows in streams and do not recommend accepting the submission from Fish & Game.

**Table 6**

7.47. Four submissions were received on Table 6. Three submitters\(^{2000}\) support Table 6 and seek that the proposed amendment is retained.

7.48. Bowden Environmental considers that the decrease in the limit for the Kowai GAZ within Table 8-6 is not based on any resource management assessment (e.g. a sustainability assessment or adverse effects assessment). The submitter\(^{2001}\) requests that the current limit of 17.4 million m\(^3\)/year is retained.

7.49. We note that the submission from Bowden Environmental on Table 6 raises the same concerns with the groundwater allocation limits as those discussed for Table 8-4. Therefore, these matters have already been addressed earlier in this section of this report.

7.50. Given the above, we recommend that Table 6 is retained as notified.

\(^{1999}\) Etheridge, unpublished
\(^{2000}\) J Richardson (PC7-65.22), Ngāi Tahu (PC7-423.73), Forest & Bird (PC7-472.77)
\(^{2001}\) PC7-84.2
Recommendation

7.51. That Rules 8.5.15 and 8.5.16, Table 8-4 and Table 6 are retained as notified.

7.52. That Rule 8.5.14 is amended as per Appendix E.
8. Water Quality and Nutrient Management

Introduction

8.1. This section discusses the provisions in Part C of PC7 that propose new water quality limits for all waterbody types in the Waimakariri sub-region and methods to achieve those limits. These methods include the introduction of additional requirements for the management of farming activities and diffuse discharges of nitrate nitrogen within the Waimakariri sub-region.

8.2. Proposed Plan Change 7 to the CLWRP proposes to introduce new water quality limits and targets for Waimakariri Rivers (Table 8-5), Lakes (Table 8-6) and Groundwater (Table 8-8). PC7 also proposes to introduce nitrate nitrogen limits for drinking water supplies from groundwater (Table 8-7).

8.3. Proposed Plan Change 7 to the CLWRP introduces seven new policies to Section 8 of the CLWRP for nutrient management and the use of land for farming activities. These policies are implemented by fifteen new rules and the associated Table 8-9, which prevail over the existing region-wide policies and rules for nutrient management. PC7 also includes new policies and rules to exclude stock from surface waterbodies.

8.4. The package of provisions also includes new definitions of ‘Nitrate Priority Area’ and ‘Nitrate Priority Sub-area’ and ‘Ashley Estuary (Te Aka Aka) Protection Zone’ (including changes to the planning maps to define these areas).

8.5. These provisions are a key component of the solutions package for the Waimakariri sub-region for the management of farming activities and in particular, the diffuse discharge of nitrate nitrogen. Nitrate is a significant issue for the Waimakariri sub-region, particularly in the Kaiapoi River catchment. There are currently high and upward trends in nitrate concentrations in Silverstream and elevated nitrate concentrations in Cust Main Drain and Ohoka Stream. The Ashley River/Rakahuri currently experiences cyanobacteria and algal blooms, where increased nitrogen losses could intensify nuisance growths. The Ashley Estuary/Te Aka Aka is highly susceptible to macroalgal eutrophication.

8.6. The provisions are grouped and considered according to the following topics:

- Water quality limits and targets
- Farming land use and nitrate management
- Ashley Estuary and Te Aka Aka Protection Zone
- Stock Exclusion

---

2002 This part of the report was prepared by Angela Fenemor (Planner), Amber Kreleger (Groundwater), Zeb Etheridge (Groundwater) and Jarred Arthur (Ecology)

2003 Policies 8.4.25 through to 8.4.29

2004 Nutrient Management Rules 8.5.21; 8.5.22; 8.5.23A; 8.5.23B; 8.5.23C; 8.5.24; 8.5.26; 8.5.27; 8.5.28; 8.5.29. Irrigation Scheme Rules 8.5.30; 8.5.30A. Incidental Nutrient Discharges Rules 8.5.31 and 8.5.32.
Water Quality limits and targets

Introduction and Provisions

8.7. This section of the report discusses the limits and targets in Part C of PC7 for rivers, lakes, groundwater and drinking water supplies that apply to the Waimakariri sub-region.

8.8. Table 8-5 sets water quality limits and targets for Waimakariri rivers which are divided into those within the Ashley-Rakahuri and the Northern Waimakariri Tributaries FMUs. Limits and targets are set for DIN, DRP, nitrate nitrogen and ammoniacal nitrogen for each river type, for example hill-fed and upland. Nitrate nitrogen targets are set as annual medians and annual 95th percentiles for the Cust River, Cust Main Drain, Cam River, Ohoka Stream and Silverstream. DIN limits for the Cust River, Cust Main Drain, Ohoka Stream, Silverstream and Courtenay Stream have not been set.

8.9. Table 8-6 sets water quality limits and targets for Waimakariri lakes, specifically Lake Pegasus in the Ashley River/Rakahuri FMU and Tūtaepatu Lagoon in the Northern Waimakariri Tributaries FMU. For both lakes, targets are set for Total Phosphorus and Total Nitrogen while limits are set for ammoniacal nitrogen.

8.10. Table 8-7 sets nitrate nitrogen limits for drinking water supplies from groundwater in the Waimakariri sub-region. The limits for individual Waimakariri DC community water supply wells is a maximum of 5.65mg/L while for private water supply wells the median limit is 5.65 mg/L.

8.11. Table 8-8 sets limits and targets for groundwater in each GAZ. Limits and targets are set for nitrate nitrogen, E. coli, and other contaminants of significance to human health as listed in the New Zealand Drinking Water Standards. A maximum concentration target for nitrate nitrogen applies in the Cust GAZ while all other GAZ have nitrate nitrogen limits.

8.12. The tables are implemented via Policies 8.4.25 – 8.4.28C, Rules 8.5.21 – 8.5.29 and Table 8-9. Table 8-9 sets out the staged reductions in nitrogen for each Nitrate Priority Sub-area required to achieve the water quality targets set in Tables 8-5, 8-6, 8-7 and 8-8 by 2080.

8.13. The water quality limits and targets attracted a significant number of submissions. Submissions on the nitrate limits generally, including those seeking reduced limits to protect ecosystem health and human health, and submissions seeking specific changes to Table 8-5, 8-6, 8-7 and 8-8 are discussed in this section in accordance with the following categories:

- General submissions on nitrate limits;
- Table 8-5;
- Table 8-6;
- Table 8-7; and
- Table 8-8.

Nitrate limits – General

8.14. More than 50 submissions were received generally opposing the nitrate limits proposed in Part C of PC7. Submitters typically support having nitrate limits for rivers and groundwater that restrict any further increases in nitrate discharges but cite various concerns for the quality of drinking water and state that the proposed limits would not provide for ecosystem health. As a result, a large number of submitters seek that the nitrate limits are reduced to better
protect these values. Other submitters simply state they seek no increases in nitrates in groundwater or surface water bodies, or both. The timeframes to achieve limits, including the staged reductions set out in Table 8-9 are also opposed by many submitters. Submissions on the methods to achieve the water quality limits are addressed later in this section of the report.

Drinking water quality and Christchurch aquifers

8.15. A large number of submitters specifically express concerns that the proposed nitrate limits would not protect the quality of drinking water for Christchurch City. We note that modelling has been used to estimate the concentration of nitrate nitrogen entering the aquifer system beneath Christchurch City, from which water is abstracted to provide community drinking water\textsuperscript{2005}. Submitters state that the aquifer system providing drinking water for Christchurch must be better protected and that the modelled increase in nitrate nitrogen in groundwater to a predicted level of 3.8mg/L poses an unacceptable risk to Christchurch residents.\textsuperscript{2006}

8.16. A typical submission in this respect is from C Bebbington\textsuperscript{2007} who states “I consider that the aquifer ecosystem which provides Christchurch’s drinking water requires specific protection, greater than that is afforded in the current plans rules for nitrate reductions.”

8.17. A number of submitters reference a Danish research study that identified a link between nitrates in groundwater at low concentrations and colorectal cancer\textsuperscript{2008}. This study has been used as the basis for submitters seeking lower nitrate nitrogen limits in PC7 and calls for further research in New Zealand to determine nitrate limits that will protect human health.

8.18. Reduced nitrate nitrogen limits have been requested by submitters with approximately 35 submitters\textsuperscript{2009} seeking urgent and immediate actions to address increasing nutrient concentration levels and the adoption of a precautionary approach to setting nitrate limits. Specific values for proposed alternative limits generally range from 0.4 mg/L to 1.1 mg/L based on information from a number of sources identifying limits to protect the health of aquatic ecosystems.

8.19. CCC has provided a comprehensive submission on their concerns for community water supplies of Christchurch City arising from the nutrient management framework, including the nitrate limits and targets proposed in PC7. CCC seek, overall, that the low concentrations of nitrate nitrogen currently experienced in the deep aquifer bores in Christchurch City are maintained\textsuperscript{2010}. CCC state the recent research on the health effects from the chronic exposure to low concentrations of nitrate nitrogen do not seem to have been considered in setting the nitrate limits in PC7. Similar to other submitters, CCC seek that a nitrate limit of 1 mg/L is applied. We note that the further submissions from Forest & Bird and Avon-Otakaro Network


\textsuperscript{2006} Including G Adriaens (PC7-151.15), S Campbell (PC7-164.15), K De Lu (PC7-256.10), K Gallagher (PC7-93.15), A McGregor (PC7-98.16), J Oldham (PC7-77.10), and F Zhang (PC7-80.10).

\textsuperscript{2007} PC7-320.15 and PC7-320.20


\textsuperscript{2009} For example, A Ackroyd (PC7-26.1)

\textsuperscript{2010} PC7-337.139
both support the primary submission from CCC related to “nutrient management and freshwater”, but do not specify which particular submission points.

8.20. We note that setting limits for waterbodies outside the Waimakariri sub-region including Christchurch’s aquifers is outside the scope of the plan change (which is to set limits for FMUs in the Waimakariri sub-region). However, the proposed provisions also specifically manage risks to Christchurch’s aquifers, by establishing a NPA (which includes the majority of the modelled source area for the Christchurch aquifers) and requiring consent holders to reduce nitrogen losses below Baseline GMP over two stages.

8.21. CCC is not only concerned about the nitrate levels proposed but also the timeframe provided to achieve those levels. CCC seeks that the reduction targets are brought forward such that nitrate nitrogen concentrations predicted to enter the Christchurch aquifer system are abated over shorter timeframes. The timeframe for achieving water quality limits and targets are addressed later in this section of the report.

8.22. The accuracy of the modelling used to inform Part C of PC7 has been raised in a number of submissions. V Southworth seeks that there is a review of the likely impacts on the Christchurch Aquifer system with the appropriate level of conservatism applied in selecting the probability percentile to apply when interpreting model results. V Southworth states the risk level applied in selecting the nitrate reductions does not reflect the uncertainty in the model and that based on the methodology there is a strong likelihood that nitrate concentrations will exceed the 3.8 mg/L threshold.

8.23. Aotearoa Water Action also highlights that the inability to predict with any certainty the likely level of nitrate increase in the Christchurch aquifers makes it more critical that the rules require more drastic and immediate nitrate reductions. Aotearoa Water Action consider the rules are based on an outdated model and timeframes which unacceptably increase the risk to the Christchurch community.

8.24. Submissions on the accuracy and limitations of the modelling undertaken to inform Part C of Plan Change 7 are discussed later in this section of the report.

8.25. Several submitters highlight the potential implications of PC7 for future generations and the significant economic and social costs associated with any nitrate nitrogen concentration increases in groundwater. V Southworth refers to the difficulties in removing nitrate from groundwater insitu such as using technologies including managed aquifer recharge. V Southworth, T Didham and K McKay refer to the estimated costs ranging between $550 million to $1.6 billion to provide either an alternative water supply for Christchurch from the Waimakariri River or to treat abstracted groundwater to remove nitrates. Submitters state the potential costs associated with increasing nitrate concentrations in Christchurch aquifers must be taken into account and provide further reasons to take immediate action to reduce nitrate discharges.

8.26. We note that while PC7 does not propose limits for the Christchurch aquifers, methods are set in the plan to achieve a target concentration of 3.8 mg/L, which is lower than the current region-wide water quality limit for Nitrate-N in groundwater set in Schedule 8. We note that the Council follows current Ministry of Health guidance on maximum acceptable nitrate levels in drinking water, but supports calls for more research into linkages between elevated nitrate

---

2011 PC7-293.5
2012 PC7-209.1

For example; A Cockburn; S Hailstone, and M J Ross.
concentrations and health risks so the need for a revision to the national drinking water limits can be properly determined. We are aware that the Government has initiated such a review. On the basis of the current DWSNZ, it is unlikely that an alternative water supply or treatment of the abstracted groundwater is necessary. As such, we recommend rejecting these submissions.

8.27. Submitters\textsuperscript{2014} are also concerned about the consequences for exceeding nitrate levels. D Main\textsuperscript{2015} states there are no penalties for exceeding nitrate limits so there is no incentive to reduce nitrate discharges. T Didham states “\textit{no enforcement or penalty is suggested for non-compliance. So failure to comply has no apparent consequences...}”. The Beckenham Neighbourhood Association Incorporated\textsuperscript{2016} also highlights the lack of provisions for policing and penalising breaches of the standards proposed.

8.28. We note that the rule framework proposed under Part C of PC7 is designed so that the water quality limits and targets will be met, over time. In the event that a landowner is unable to comply with the requirements of the plan (in particular, reductions in nitrate losses beyond GMP Baseline), region-wide strategic Policy 4.7 clearly states that resource consents for new or existing activities will not be granted if the granting would cause a water quality or quantity limit set in Sections 6 to 15 to be breached or further over allocation to occur. While this policy provides an exemption for replacement consents or new consents for existing activities, any consent granted must include conditions that contribute to the phasing out of over allocation over time. Given the strong relationship between the water quality limits and the corresponding rule framework in Section 8, and taking into account the strategic direction set in Policy 4.7, we consider there is little room for exceeding the limits. The commitment to continue to monitor plan effectiveness will also inform the appropriateness of the methods in the plan once the provisions have been implemented, which will feed into future plan review processes.

\textit{Submissions Across all Tables}

8.29. CCC seeks a number of amendments in relation to Tables 8-5 to 8-8, particularly in relation to the implementation and review of the targets and limits. CCC considers there is a disconnect between the water quality limits and targets and the rules and policies and therefore seeks:

- A method to specify how nitrate levels will be monitored, including the frequency to determine progress towards meeting water quality limits and targets;
- Clarification on how the targets will apply to a resource consent application on an individual basis; and
- Greater policy support for the targets including a requirement to minimise the loss or discharge of contaminants to achieve the outcomes.

8.30. These submissions are addressed in the sections below.

\textsuperscript{2014} For example; V Buck (PC7-525), J Chambers (PC7-519), R McLean (PC7-524) (not attributed to a submission point in the SODR),

\textsuperscript{2015} PC7-162.2

\textsuperscript{2016} PC7-446.1
Table 8-5

Introduction

8.31. As outlined above, Table 8-5 sets out the water quality limits and targets for Waimakariri Rivers. These limits and targets are set for nutrient attributes and apply according to river types in the Ashley/Rakahuri and Northern Waimakariri Tributaries FMUs.

Submissions

8.32. As One Incorporated\textsuperscript{2017} and DairyNZ\textsuperscript{2018} support the limits and targets as proposed in PC7 and seek Table 8-5 is retained as notified.

8.33. Submissions in opposition or opposition in part can be categorised into three groups:

- Submitters seeking amendments to the limits or targets but without specific numeric limits or targets sought;
- Submitters seeking specific changes to the numeric limits or targets and the timeframe to achieve them; and
- Submitters seeking amendments regarding the implementation of Table 8-5.

Submitters seeking amendments to the limits or targets but without specific numeric limits or targets sought

8.34. Several submitters oppose in part Table 8-5 and have requested amendments to provide for specific values associated with surface water bodies, including human health and aquatic ecosystem health.

8.35. CCC\textsuperscript{2019} seeks amendments to the values for rivers in the Northern Waimakariri Tributaries FMU to reduce the limits to align with recent research on human health and aquatic ecosystems. CCC refers to levels of nitrate nitrogen greater than 0.87 mg/L posing a risk to human health and 0.44 mg/L affecting aquatic ecosystems.

8.36. DOC\textsuperscript{2020} seeks that the Table 8-5 values are amended to ensure the limits and targets are set consistent with the freshwater outcomes sets for rivers in Waimakariri sub-regional zone. DOC state the DIN and DRP limits are sufficient for controlling nuisance periphyton, macrophyte and cyanobacteria growth outcomes but it is difficult to determine how the DIN and nitrate nitrogen limits will work together as the DIN limit is less than the nitrate nitrogen limit. DOC also oppose the lack of DIN limits for the Hill-fed lower and Spring-fed plains waterbody classes.

8.37. Ballance\textsuperscript{2021} seeks that the limits and targets are replaced with robust values which provide a measurable outcome citing concerns with the inconsistency of Table 8-5 with Schedule 8 of the CLWRP and the uncertain scientific basis for the values.

\textsuperscript{2017}PC7-387.43
\textsuperscript{2018}PC7-357.38
\textsuperscript{2019}PC7-337.163
\textsuperscript{2020}PC7-160.76
\textsuperscript{2021}PC7-441.25
8.38. J Webster-Brown\textsuperscript{2022} states that the targets and limits for the Cust River, Courtenay Stream and Silverstream are too high to ensure the environmental health of these water bodies as they will result in adverse effects such as excessive algal growth and loss of biodiversity. J Webster-Brown seeks that the limits for these waterways are deleted and replaced with alternative limits to offer the greatest practical protection for these ecosystems.

*Submitters seeking specific changes to the numeric limits or targets and the timeframe to achieve them*

8.39. CCC\textsuperscript{2023} seeks the inclusion of a nitrate limit or target is included for the Waimakariri River of 0.1 ppm to be measured at the Waimakariri Gorge and SH1 bridge.

8.40. G Harrison\textsuperscript{2024} opposes the limits and targets that seek to meet the minimum bottom line and requests that a minimum target value of 5 mg/L is imposed to better protect public and environmental health.

8.41. Several submitters\textsuperscript{2025} seek that the target date by which water quality targets are achieved is brought forward from 2080 to 2040 for achieving nitrate targets of 3.8 mg/L. Additionally, these submitters state that nitrate targets of 6.9mg/L should be set from the date the plan is operative as this the national bottom line set in the NPSFM.

8.42. For the Northern Waimakariri Tributaries FMU, Forest & Bird\textsuperscript{2026} also states the timeframes for achieving the water quality targets is too long and seek that the timeframe is brought forward to 2030.

8.43. Fish & Game\textsuperscript{2027} is concerned that the nitrate nitrogen targets and limits are set at very high levels, reflecting the current degraded state of the waterbodies. Fish & Game believes that the limits and targets do not consider the carrying capacity of the zone to absorb current and projected nutrient discharges or even recover to an overall healthy level. The levels are set above the recommended COMAR levels and Fish & Game have requested that a 30% precautionary reduction in the nitrogen limits is applied to more precisely reflect the level of change required to better safeguard the life-supporting capacity and ecosystem processes in these water bodies.

8.44. In relation to phosphorus, Fish & Game seeks to amend the phosphorus limits in Table 8-5 that are over 0.01 mg/L are reduced or at least set as a target of 0.01 mg/L.

8.45. Forest & Bird states that the Table 8-5 limits do not provide for ecosystem health. It is unclear what limits Forest & Bird seeks to amend as it states a precautionary limit of 0.4 to 0.5 is applied but also state that the nitrate nitrogen limit is reduced to <1.0. Forest & Bird does not provide units for their suggested limits.

\textsuperscript{2022} PC7-559.6  \textsuperscript{2023}PC7-337.104  \textsuperscript{2024}PC7-12.7  \textsuperscript{2025}Kaiapoi-Tuahiwi Community Board (PC7-42.36, PC7-42.37), Oxford-Ohoka Community Board (PC7-148.34, PC7-148.35), Rangiora-Ashley Community Board (PC7-149.36, PC7-149.37), Waimakariri DC (PC7-3.33, PC7-3.34), Woodend-Sefton Community Board (PC7-107.36, PC7-107.37).
\textsuperscript{2026}PC7-472.123 \textsuperscript{2027}PC7-95.47
Submitters seeking amendments regarding the implementation of Table 8-5.

8.46. Ballance\textsuperscript{2028} seeks the insertion of a provision to require the review and revision of the limits and targets and associated timeframes in response to the water quality data obtained via a comprehensive monitoring programme as well as potential changes in applicable practices and technology for nutrient management. It is not clear from the submission if the submitter is seeking a new policy or amendments to Table 8-5, or how this request differs from proposed Policy 8.4.35. We do not recommend accepting this submission.

Analysis

8.47. Submitters seeking amendments to Table 8-5 generally seek that the limits are lowered to better protect ecological and human health. In response to submissions seeking lower nitrate concentrations (including CCC’s suggested nitrate limits of 0.44 mg/L or 0.87 mg/L), we note that the NPSFM states\textsuperscript{2029} that where FMUs are below the national bottom lines specified in Appendix 2 for each attribute, water quality must be improved to at least the national bottom line. We note that the proposed limits and targets in Table 8-5 are consistent with these requirements and take into account the methods available to achieve those limits. In the absence of an assessment that more stringent limits are more appropriate, we recommend rejecting these submissions.

8.48. In response to the submission from Fish & Game, we have assessed the impact of lowering the nitrate concentration limits by 30% on the required nitrate loss reductions within the NPA. The results of this assessment (see Appendix D.4) indicate that significantly more receptors would need more than two 10-year nitrate loss reduction stages to reach their limit for nitrate nitrogen concentration. Taking into account the economic impact of lower limits and noting that the proposed limits and targets in Table 8-5 are consistent with the requirements of the NPSFM and DWSNZ, we recommend that the submission from Fish & Game be rejected.

8.49. In response to DOC’s concerns regarding the DIN limits, we note that these limits are set at current state conditions for waterways where the ecosystem nitrate nitrogen toxicity risk is low (annual median < 1.0 mg/L nitrate nitrogen). Water quality limits for these waterways use the Band A NOF threshold for nitrate nitrogen toxicity in the NPSFM, despite the concentrations being set higher than the corresponding limit for DIN. This is because each water quality limit (i.e. for DIN and nitrate nitrogen) functions for a different purpose. DIN limits are set primarily to manage nuisance instream plant and algal growths, whilst each nitrate nitrogen limit manages for toxicity effects on aquatic fauna. Nitrate nitrogen limits for all waterbodies were set based on a Waimakariri ZC decision to balance environmental, economic and social values. For this reason, DIN limits are not set for most streams in the Northern Waimakariri Tributaries FMU because the current state of DIN and nitrate nitrogen concentrations in these waterbodies are well in excess of those necessary to control nuisance plant and periphyton growths. The pathway to reduce nitrogen losses from land to achieve < 1.0 mg/L nitrate-nitrogen in these surface waterways was considered unsustainable for landowners in the short-term and therefore reducing the risk of nitrate toxicity effects instream is considered a first priority. DIN and nitrate nitrogen limits in Table 8-5 are also measured across different temporal scales so cannot be directly compared. DIN is measured as a 5-year median, whereas Nitrate-N is measured as an annual median or 95th percentile.

\textsuperscript{2028} PC7-441.52
\textsuperscript{2029} NPSFM preamble on page 5, paragraph 2 and Policy CA2 (d)
8.50. Several submitters oppose Table 8-5 and seek either DIN limits to be included, or the limits reduced to provide greater ecological protection. The water quality limits for all waterbodies nutrients have been set to manage environmental effects while recognising what is achievable by implementing the methods proposed in PC7. There is no DIN limit set for some waterbodies as for those waterbodies, water quality is being managed to address the toxicity effects of nitrate nitrogen rather than controlling periphyton and/or plant growth. These waterbodies currently experience high concentrations of nitrate nitrogen and in some waterbodies there are significant effects on aquatic fauna. Any reduction in the limits to provide greater environmental protection are unlikely to be achieved through the implementation of the methods proposed and will have a significantly greater economic impact. Policy 8.4.35 seeks to ensure information is gathered to inform future plan review cycles by requiring the collection of information on the progress made towards achieving freshwater outcomes. It is therefore our view that the efficacy of methods and data on the improvements in water quality made through the implementation of PC7 will be collected over the first 10 years following implementation and can be used to inform a future plan review. That plan review can then consider the appropriateness of amending the nitrate limits to better protect ecological health.

8.51. Timeframes to implement methods to achieve the limits in Table 8-5 are set out in Table 8-9. A full discussion of the timeframes is discussed later in this part of the report, but in summary some changes are recommended to the timeframes. The changes recommended take into account the significant changes to farming practices and/or land use change necessary to achieve the limits and considers the benefits of making improvements to water quality and the costs of achieving those limits.

8.52. In response to CCC’s request for a nitrate limit for the mainstem of the Waimakariri River, we note that PC7 does not set water quality limits or targets for this waterbody. However, the methods in PC7 are set, in part, to manage the nutrient inputs into the Waimakariri River. We note that a scenario including a limit of 0.1 mg/L for the Waimakariri River was presented to the Waimakariri ZC. Reducing the current concentration of 0.2 mg/L to 0.1 mg/L requires a 28% beyond Baseline GMP nitrate loss reduction for the land area just north of the river. The ZC considered potential benefits in the context of the economic impact on farming in this area and recommended that measures should be put in place to ensure that land use within the Waimakariri Zone is consistent with maintaining current concentrations. We note that the existing water quality is still considered good, and maintaining this quality is consistent with Objective A2 of the NPSFM. A discussion on the appropriateness of the methods to achieve a nominal limit of 0.2 mg/L is discussed later in this section of this report.

8.53. Fish & Game seeks to amend Table 8-5 to reduce any phosphorus limits that are over 0.01 mg/L to less than 0.01 mg/L. We note that the DRP limits set were based on the current state of water quality in each waterway to meet the NPSFM requirement to maintain or improve water quality. At the time, there was no national policy (i.e. NOF) guidance on appropriate DRP attribute limits for streams and rivers. However, the draft NPSFM document (published for consultation in September 2019) contains attribute bands for DRP in rivers. The draft NPSFM suggests a national bottom line for DRP of 0.018 mg/L (median). While this document is only a draft for consultation, we note that the PC7 DRP limits for Little Ashley Creek at SH1, Cust Main Drain at Skewbridge Rd, Courtenay Stream at Neeves Rd all exceed this. A target

---

2030 CCC, DOC, Fish & Game, G Harrison, Forest & Bird
2031 Table A6-12 Technical Overview Report.
of 0.01 mg/L for DRP as suggested by Fish & Game will result in improved environmental protection from algal blooms and nuisance aquatic plant growths in waterways that currently have PC7 limits greater than this. However, the methods proposed in PC7 to manage nutrient losses are unlikely to facilitate the achievement of the 0.01 mg/L target for DRP. Without further justification for greater improvement in water quality and an understanding of the methods required to deliver that target, we recommend rejecting the submission from Fish & Game seeking a lower DRP concentration in Table 8-5.

8.54. We do not consider an additional policy is required in response to Ballance’s submission. Section 35 of the RMA requires the Council to gather information and monitor the efficiency and effectiveness of policies, rules, or other methods in its regional plan. Policy 8.4.35 includes additional guidance on monitoring, investigations and plan effectiveness. As such, we consider it is unnecessary to insert any new provisions to re-state this requirement.

8.55. In summary, we do not recommend any changes to Table 8-5 in response to these submissions.

Table 8-6

Introduction

8.56. Table 8-6 proposes to set water quality limits and targets for Waimakariri Lakes which are identified as Lake Pegasus and Tutaetapu Lagoon. Annual average Total Phosphorus and Total Nitrogen targets, and limits for ammoniacal nitrogen as both an annual median and annual maximum, are proposed.

Submissions

8.57. As One Incorporated2033 and DairyNZ2034 support Table 8-6 and seek it is retained as notified. Forest & Bird2035 opposes Table 8-6 as proposed as it states it is not precautionary for ecosystem health. No specific decision is requested.

8.58. Ballance2036 seeks the limits and targets are replaced with robust values that provide a measurable outcome in accordance with the outcome sought for Waimakariri sub-region lakes. Ballance notes that the TP and TN targets for Ashley River/Rakahuri are less onerous than Schedule 8 and the ammoniacal nitrogen limits for both waterbodies are far more onerous than Schedule 8. Ballance is unclear on how the limits and targets were derived and their scientific basis.

8.59. Ballance2037 also seeks the insertion of a provision to require the review and revision of the limits and targets and associated timeframes in response to the water quality data obtained via a comprehensive monitoring programme as well as potential changes in applicable practices and technology for nutrient management. It is not clear from the submission if the submitter is seeking a new policy or amendments to Table 8-6.

---

2033 PC7-387.45
2034 PC7-357.37
2035 PC7-472.124
2036 PC7-441.26
2037 PC7-441.53
8.60. DOC supports the inclusion of water quality limits for lakes in the Waimakariri sub-region but considers that the nutrient targets are inconsistent with the Band B outcome for the Ashley River/Rakahuri FMU as they are set at the national bottom line. DOC states that without more stringent targets to achieve the Band B state for phytoplankton and TLI, it is unlikely that the lake outcomes for the Ashley/Rakahuri FMU will be achieved. DOC therefore seeks that the targets for lakes are consistent with the freshwater outcomes set in Table 8b.

8.61. Several submitters seek that the water quality limit and targets for lakes should be set at achievable levels citing previous water quality monitoring of TP and ammonia in Lake Pegasus have exceeded the proposed PC7 targets.

8.62. Todd Property Pegasus Town Ltd has raised concerns about setting water quality targets where those limits may not be achieved due to scientific or technical capability uncertainty. Todd Property Pegasus Town Ltd seeks that the water quality limits and targets for Lake Pegasus are removed from Table 8-6, or alternatively Table 8-6 is amended to specify that all values are targets.

Analysis

8.63. We note that the submission from Ballance seeking amendments to Table 8-6 to review and revise the limits and targets is likely already provided for in Policy 8.4.35 and is not further discussed here.

8.64. All TN and TP targets set for lakes in Table 8-6 are in accordance with the current state of water quality and NOF national bottom lines in the NPSFM. Ammoniacal nitrogen limits are set based off the current state of water quality and NOF Band A thresholds for protecting aquatic organisms from the threat of ammonia toxicity.

8.65. Both the DOC and Ballance submissions raise a similar issue, and we agree that there is a risk that meeting proposed PC7 nutrient targets for Lake Pegasus (Table 8-6) may not result in meeting the Table 8b lake phytoplankton and/or TLI outcomes. We also note that the consent holder is currently employing other methods to achieve these outcomes (e.g. aeration). While there is merit in proposing more stringent nutrient targets (TN and TP) to ensure greater consistency with PC7 Schedule 8 limits for ‘Other artificial lakes’, there is no pathway in PC7 for achieving these nutrient targets. This would need to be achieved by reducing land-based nutrient losses to groundwater from the lake’s inland source area.

8.66. Lake Pegasus is predominantly fed by groundwater that is influenced by nutrient inputs from inland land-uses that are largely beyond the control of the consent holder for Lake Pegasus. Todd Property Pegasus Town Ltd currently holds resource consents (CRC135323, CRC135322 and CRC135321) which authorise taking and using of groundwater, the taking and diversion of surface water, and the damming of water in relation to the Pegasus Town development. The consents include conditions relating to the management of water quality and environment of Pegasus Lake. Consent conditions for Pegasus Lake more-so refer to controlling other aspects of water quality, lake ecology and aesthetics.

2038 PC7-160.77
2039 Kaiapoi-Tuahiwi Community Board (PC7-42.38), Oxford-Ohoka Community Board (PC7-148.36), Rangiora-Ashley Community Board (PC7-149.38), Waimakariri DC (PC7-3.35), Woodend-Sefton Community Board (PC7-107.38)
2040 PC7-472.5
8.67. For completeness, we recommend that nutrient targets for Tūtaepatu Lagoon remain unchanged as they are already consistent with PC7 Schedule 8 limits for ‘All other coastal lakes’.

**Table 8-7**

*Introduction*

8.68. Table 8-7 sets nitrate nitrogen limits for drinking water supplies from groundwater in the Waimakariri sub-region. Two limits are set for individual Waimakariri DC community supply wells and private water supply wells.

*Submissions*

8.69. As One Incorporated\textsuperscript{2041} and DairyNZ\textsuperscript{2042} support Table 8-7 and seek it is retained as notified.

8.70. CDHB\textsuperscript{2043} is concerned that the proposed median limit for private water supplies will not allow for the identification of individual wells that may be over half the MAV. CDHB is also concerned with how the limit is applied noting that Table 8-7 includes a note stating the limit is the median value for all samples collected from a representative area but does not specify how a representative area will be defined. CDHB requests that the maximum value criteria is applied to private water supply wells.

8.71. CCC\textsuperscript{2044} seeks amendments to Table 8-7 to include a limit for the CCC deep aquifer bores, requesting a limit of 1 mg/L and the insertion of a footnote that describes the limit is assessed based on the median value for all samples collective from all bores actively used by CCC.

8.72. Additionally, CCC\textsuperscript{2045} states that the nitrate nitrogen limits proposed are too high to protect human or ecosystem health and seeks that the limits for Waimakariri DC wells and private supply wells be reduced to 1 mg/L. CCC\textsuperscript{2046} requests that the Council undertake an investigation into the links between increased human health risks from nitrate nitrogen levels in groundwater, including colorectal cancer, and revise the limits and targets using the results of this research.

8.73. Several submitters\textsuperscript{2047} support the proposed maximum nitrate nitrogen limit for community supply wells in principle as it is set at a precautionary level, below the Drinking Water Standards MAV. However, these submitters seek that further research into the links between nitrate levels in drinking water and colorectal cancer is undertaken.

8.74. The remaining submissions\textsuperscript{2048} on Table 8-7 also oppose the nitrate limits and seek they are reduced to a concentration at or below 1 mg/L.

\textsuperscript{2041} PC7-387.46
\textsuperscript{2042} PC7-357.40
\textsuperscript{2043} PC7-347.10, PC7-347.11
\textsuperscript{2044} PC7-337.105
\textsuperscript{2045} PC7-337.164, PC7-337.165
\textsuperscript{2046} PC7-337.178
\textsuperscript{2047} Kaiapoi-Tuahiwi Community Board (PC7-42.39), Oxford-Ohoka Community Board (PC7-148.37), Rangiora-Ashley Community Board (PC7-149.39), Waimakariri DC (PC7-3.36), Woodend-Sefton Community Board (PC7-107.39).
\textsuperscript{2048} For example; Forest & Bird (PC7-472.125), R McFarlane (PC7-191.1)
Analysis

8.75. In response to the submission from CDHB, we note that PC7 does not specify the “representative area” for private drinking water supplies as it is anticipated that the areas will be identified as part of the development of a programme for testing and reporting of water quality in private drinking water supply wells.

8.76. Irrespective of the size and location of the representative areas, we agree with CDHB that the proposed limit allows for individual wells to exceed half of the MAV for nitrate. The purpose of setting a limit for a “representative area” is to prevent the decline of groundwater quality in more localised areas, given it is not possible to prevent each individual well from exceeding the drinking water limits. Kreleger and Etheridge (2019) have established, for the Canterbury Plains, a relationship between spatially averaged measured nitrate concentrations in groundwater and the percentage of samples that might exceed half of the MAV for nitrate. Based on this relationship it is impossible to protect each individual well from exceeding half the MAV or the MAV at any time, even when the nitrate concentrations in groundwater in the area are very low. This is due to localised higher nitrate concentrations that affect these wells. The limits in Table 8-7 aim for 50% of the samples as this is assessed as achievable with the proposed methods in the PC7 (notably, the nitrate reductions described in Table 8-9) and means that less than 10% of all wells are likely to exceed the drinking water limit of 11.3 mg/L nitrate nitrogen.

8.77. In response to the request from CDHB to include a maximum limit for all private wells, we note that it is not practical to sample all wells to determine compliance and plan efficacy. The rationale for setting a median value for samples from representative areas is that it supports a risk management approach, including the use of statistical relationships between the median concentration in a set of representative wells and the risk of individual wells exceeding the limit. Technical analysis presented in Appendix 2 of Kreleger and Etheridge (2019) shows that a median concentration of 5.65 mg/L is likely to mean that less than 10% of samples exceed the 11.3 mg/L drinking water limit. Use of a median target from a representative set of wells therefore seeks to ensure that a small percentage of samples exceed the drinking water limit, whilst recognising the practicalities of sample collection and the inherent spatial and temporal variability in nitrate concentrations in groundwater. On this basis, we recommend rejecting the submission from CDHB.

8.78. As described earlier in this section of the report, setting groundwater quality limits for the deep Christchurch aquifers is outside the scope of PC7. Managing activities in the Waimakariri sub-region to a nominal threshold of 3.8 mg/L recognises the connection between land in the Waimakariri sub-region and the deep aquifers of Christchurch. Implementing methods to achieve a limit of 1 mg/L in the Christchurch deep aquifers would be extremely challenging. Kreleger and Etheridge (2019) explored a scenario under which all farmland in the modelled Christchurch aquifer recharge area within the Waimakariri Zone was converted to dryland farming and forestry. Model results predicted that this would result in a long-term nitrate nitrogen concentration of 1.5 mg/L. The economic impacts of this scenario are evaluated in Harris (2019).

8.79. We note that the purpose of setting methods in PC7 to achieve a 3.8 mg/L concentration in the Christchurch aquifers is to allow for immediate action to be undertaken to address the risk of water quality deterioration. A future limit setting process may conclude that a lower limit (e.g. 1.0 mg/L) is appropriate, in which case further nitrogen loss reduction stages would be required for part of the Waimakariri sub-region. Increasing the nitrogen loss reduction stages in Table 8-9 would not affect the plan provisions for the initial 10 year period of plan
implementation. If additional stages of reduction are required to achieve a lower nitrate limit for the Christchurch aquifer, this could be implemented when the plan is reviewed after 10 years.

8.80. As described earlier in this report, we note that the Council follows current Ministry of Health guidance on maximum acceptable nitrate levels in drinking water, but supports calls for more research into linkages between elevated nitrate concentrations and health risks so the need for a revision to the national drinking water limits can be properly determined. On the basis of the current DWSNZ, and taking into account the significant economic impact of achieving the lower threshold of 1 mg/L, we recommend rejecting the submission from CCC. For similar reasons, we also recommend rejecting the submission from those seeking a more precautionary limit that is lower than the current DWSNZ.

8.81. For consistency across Section 8, we recommend that reference to “Waimakariri” is removed from Table 8-7, as the table is already contained within the Waimakariri sub-region section.

**Recommendation**

8.82. That Table 8-7 is amended as per Appendix E.

**Table 8-8**

**Introduction**

8.83. Table 8-8 sets water quality limits and targets for groundwater for the Waimakariri sub-region for each GAZ. Limits or targets are set for nitrate nitrogen, *E. coli*, and other contaminants of health significance as listed in the DWSNZ. A target only applies for the annual average nitrate nitrogen concentration for the Cust GAZ. Table 8-8 also states that actions to achieve the nitrate targets in the table will be implemented by 1 January 2080.

**Submissions**

8.84. Thirty-three submissions were received on Table 8-8. Three support the proposed table and thirty request amendments.

8.85. The submissions have been grouped into, and considered according to, the following topics:

- Supporting submissions
- Specific submissions requesting amendments to limits and targets
- General submissions on limits and targets
- Submissions on implementation timeframes

8.86. Several submission points²⁰⁴⁹ have been allocated to Table 8-8 within the SoDR, however the matters raised within these submissions are not specifically relevant to this table, and/or are applicable to multiple provisions introduced within PC7. Therefore, these submission points are addressed elsewhere in this report.

²⁰⁴⁹ Ngāi Tūāhuriri Rūnanga (PC7-399.74, PC7-399.82), J Richardson (PC7-65.28), CCC (PC7-337.186, PC7-337.187)
Supporting submissions

8.87. DairyNZ\textsuperscript{2050} and Fish & Game\textsuperscript{2051} support Table 8-8 and seek its retention. Reasoning for this support includes that the limits and targets are generally consistent with the NPSFM and community values, and that they recognise the sensitivity and special values of the water bodies.

Specific submissions requesting amendments to limits and targets

8.88. As One Incorporated\textsuperscript{2052} seeks a specific increase to the nitrate nitrogen limit for the Eyre GAZ from 4.1 mg/L to 5.65 mg/L. No reason for the requested increase has been provided. We note that the 4.1 m/L proposed for the Eyre GAZ is the average of all the samples collected within the GAZ over the preceding 5-year period. An increase in the limit would not meet the requirements of the NPSFM to maintain or improve water quality. We also note that a 5.65 mg/L target has been proposed for the Cust GAZ, which represents an improvement in water quality as the average concentration currently exceeds half of the MAV for nitrate.

8.89. CDHB, CCC and Forest & Bird seek that the nitrate nitrogen limits are reduced. CDHB\textsuperscript{2053} consider that the maximum concentration for nitrate nitrogen should be consistent with the value associated with “Other Contaminants” (being >50% MAV). It considers that increasing nitrate nitrogen levels in the catchment should not result in a higher threshold being applied within the Waimakariri sub-region. We note that the proposed maximum concentration for nitrate nitrogen is similar to the region-wide maximum concentration for nitrate nitrogen in groundwater (as set out in Schedule 8), meaning that Table 8-8 is not representative of a higher threshold for the Waimakariri sub-region. CCC\textsuperscript{2054} request amendments to add a GAZ for deep groundwater in Christchurch with a nitrate threshold of less than 1 ppm. Similarly, Forest & Bird\textsuperscript{2055} considers the proposed limits do not reflect a precautionary approach for ecosystem and human health and seeks that the limits are reduced to <1.0 mg/L. Waimakariri DC and various Community Boards state that they support the Council with a call for New Zealand based research into a link between nitrate levels in drinking water and colorectal cancer incidents. For the reasons described above, we do not recommend accepting these submissions.

General submissions on Table 8-8 limits and targets

8.90. Two submitters\textsuperscript{2056} seek that the limits for the Northern Waimakariri Tributaries FMU are reduced, consistent with up to date research on the effects of nitrate nitrogen, to protect human and ecosystem health. The submitters do not propose any specific replacement limits.

8.91. Waimakariri DC and four Community Boards\textsuperscript{2057} seek that the limit proposed of 50% of the MAV for other contaminants in the NZ Drinking Water Standards should only apply for

\textsuperscript{2050} PC7-357.41
\textsuperscript{2051} PC7-95.49
\textsuperscript{2052} PC7-387.47
\textsuperscript{2053} PC7-347.12
\textsuperscript{2054} PC7-337.106
\textsuperscript{2055} PC7-472.126
\textsuperscript{2056} CCC (PC7-337.167), J Richardson (PC7-65.26)
\textsuperscript{2057} Waimakariri DC (PC7-3.39), Kaiapoi-Tuahiwi Community Board (PC7-42.42), Oxford-Ohoka Community Board (PC7-148.40), Rangiora-Ashley Community Board (PC7-149.42), Woodend-Sefton Community Board (PC7-107.42).
contaminants that are influenced by human activity, specifically the submitters identify that naturally occurring contaminants such as arsenic is excluded from the limit. We note that the limits for ‘other contaminants’ reflects the region-wide limits set in Schedule 8. Removing any naturally-occurring contaminants from the limits tables may have unintended consequences and therefore we recommend rejecting these submissions.

8.92. Aratika Trust2058 and Wai Eyre Farm Partnership2059 oppose Table 8-8 due to the reductions being unachievable, based on incorrect modelling, and the resulting effects on farming operations. The latter submitter seeks that Table 8-8 is amended based on scientifically measured results. The appropriateness of the modelling and the methods to achieve the proposed limits are addressed earlier in this section of the report and are not repeated here.

8.93. Beef + Lamb2060 considers the nitrate nitrogen concentrations in Table 8-8 should reflect water quality at the time PC7 is notified, or if degraded reflect the required concentration to provide for environmental outcomes consistent with the requirements for the NPSFM. We note that proposed nitrate nitrogen limits in Table 8-8 reflect the average of all samples collected within the GAZ over the preceding five-year period. Only the Cust GAZ is classified as “degraded”, where a target of half the MAV is proposed. We do not recommend any amendments to Table 8-8 in response to this submission.

Submissions on implementation timeframes

8.94. Waimakariri DC and four Community Boards2061 request that the timeframe to achieve the water quality target for the Cust GAZ is brought forward to 2040. Forest & Bird2062 requests that the timeframe for achieving the targets is amended to 2030. We note that the timeframe for achieving the target nitrate nitrogen concentration for the Cust GAZ is reliant on the methods available to reduce nitrate losses from farming activities in the ‘source’ area. While the groundwater modelling undertaken for Part C of PC7 was based on achieving water quality limits and targets in different receptors, the methods proposed to improve water quality in the receptors will also benefit the water quality in the GAZ. We also note that nitrate nitrogen concentrations in the Cust GAZ will improve together with the receptors within the GAZ, which are influenced by farming activities undertaken in Nitrate Priority sub-area E. Proposed Table 8-9 sets out six 10-year staged reductions proposed for Sub-area E, meaning that actions to achieve the nitrate -nitrogen limits or targets will be implemented by 1 January 2080. We are suggesting an option to change to Table 8-9 (discussed later in this report), and therefore the timeframe for implementing actions to achieve the limits or targets in Table 8-8, should the Hearing Panel agree that a shorter time period is more appropriate.

Recommendation

8.95. That Table 8-8 is retained as notified.

2058 PC7-199.33
2059 PC7-274.22
2060 PC7-214.102
2061 Waimakariri DC (PC7-3.37, PC7-3.38), Kaiapoi-Tuahiwi Community Board (PC7-42.40, 42.41), Oxford-Ohoka Community Board (PC7-148.38, 148.39), Rangiora-Ashley Community Board (PC7-149.40, PC7-149.41), Woodend-Sefton Community Board (PC7-107.40, PC7-107.41).
2062 PC7-472.127
Farming land use and Nitrate Management

Introduction and Provisions

8.96. This part of the report considers the submissions on the provisions related to farming land use and nitrate management.

8.97. Proposed Plan Change 7 to the CLWRP introduces seven new policies to Section 8 of the CLWRP for nutrient management and the use of land for farming activities. These policies are implemented by fifteen new rules and associated Table 8-9, which replace the existing region-wide policies and rules for nutrient management.

8.98. Under the provisions proposed by PC7, the Waimakariri sub-region is treated as one zone for the purposes of nutrient management, with an additional NPA where properties are required to reduce nitrogen losses below the GMP Baseline Loss Rate, in 10 year stages. The NPA is divided into five Nitrate Priority Sub-areas, where the reductions in nitrogen losses for each sub area is set out in Table 8-9, with reductions occurring over time until the proposed water quality limits and targets are met (as indicated by the modelling undertaken to support proposed PC7 in Kreleger and Etheridge (2019)).

8.99. Another key difference between the proposed nutrient management framework for the Waimakariri sub-region and the existing region-wide nutrient management rules is the permitted activity thresholds, in particular, the reduced allowance for winter grazing.

8.100. Rule 8.5.21 permits the use of land for farming activities on properties less than 5 hectares, compared to the region-wide permitted activity threshold of 10 hectares. Rule 8.5.24 permits farming land use activities on properties greater than 5 hectares provided that the property is registered in the Farm Portal by 20 July 2022, a Management Plan in accordance with Schedule 7A has been prepared, and the area-based thresholds for irrigation and winter grazing are not exceeded.

8.101. PC7 proposes to amend the boundary for the Waimakariri sub-region to include some land adjacent to the Waimakariri River that is currently within the Central Canterbury Alpine Rivers sub-region (Section 12 of the CLWRP) which is currently within a “green NAZ”.

8.102. For properties within the NPA (identified on the Planning Maps) that require resource consent for farming activities, proposed Rule 8.5.26 includes a matter of discretion which allows the Council to consider the methods and timeline for achieving nitrogen loss rate reductions, where the reductions required for each sub-zone are set out in Table 8-9.

8.103. The starting point for applying each percentage reduction in nitrogen loss in Table 8-9 is described in note 1 of Table 8-9 and is generally the Baseline GMP Loss Rate except where this rate has been lawfully exceeded and provided for in Policy 8.4.26 (individual farming activities and farming enterprises) and in Policy 8.4.29 (irrigation schemes).

---

2063 Policies 8.4.25 through to 8.4.29. Policies 8.4.28 and 8.4.28A relate to the Ashley Estuary (Te Aka Aka) and Coastal Protection Zone

2064 Nutrient Management Rules 8.5.21; 8.5.22; 8.5.23A; 8.5.23B; 8.5.23C; 8.5.24; 8.5.26; 8.5.27; 8.5.28; 8.5.29. Irrigation Scheme Rules 8.5.30; 8.5.30A. Incidental Nutrient Discharges Rules 8.5.31 and 8.5.32.

2065 Tables 8-5, 8-6, 8-7 and 8-8.

2066 Discretion matter 7
8.104. Policy 8.4.27 proposes an exemption for low emitters from having to make further reductions in nitrogen losses, which is reflected in note 3. of Table 8-9.

8.105. Rules 8.5.23A-C allow for the use of a “Equivalent Baseline GMP Loss Rate” or “Equivalent Good Management Practice Loss Rate” where the Farm Portal is unable to generate a loss rate, or the number generated is demonstrated to be erroneous, or is not representative of the farming land use.

**Submissions and analysis of Nitrate Management Provisions**

**Overview of submissions**

8.106. The setting of water quality limits and the provisions that relate to the use of land for farming activities attracted a significant number of submissions. Generally, most submitters are supportive of the intent for improved water quality and additional controls on the loss of nutrients to groundwater and surface water. However, the majority of submitters sit in two opposed camps – one which generally seeks greater improvements in water quality (requiring a larger reduction in nitrogen losses, sooner) and those who oppose the total reduction in the nitrogen loss rate from farming activities in the NPA.

8.107. The majority of submissions on this topic were typically made on the group of nitrate management provisions, with very few submitters seeking specific amendments to particular policies or rules. As such, the submissions relating to nitrate management have been grouped into and considered according to the following topics:

- General submissions in support of the nitrate management provisions
- General submissions in opposition of the nitrate management provisions
- Submissions on the Section 32 analysis
- Submissions on the Nitrate Priority Sub-areas and reductions in nitrogen loss
- Submissions on the nitrate modelling
- Submissions on measuring success: meeting the water quality limits and targets
- Submissions on plan effectiveness and monitoring
- Submissions on the Farm Portal, use of OVERSEER® and the definition of GMP
- Submissions on the methods for achieving water quality limits (including nitrate reductions)
- Submissions requesting alternative management approaches

8.108. Given the more general nature of the submissions in this section of the report, we make recommendations on accepting or rejecting submission points. Recommendations to retain or amend specific provisions are set out in later sections of this report.

2067 Over 1800 submission points
2068 For example; As One Inc (PC7-387.2)
General submissions in support of the nitrate management provisions

Submissions and analysis

8.109. There are approximately 40 submissions that generally support the setting of nitrate limits for rivers and groundwater and the policies and rules that restrict any further increase of nutrient discharges, as notified. However, despite this support for including limits, the submitters also request that the limits are amended to further improve water quality.

8.110. Styx Living Laboratory Trust supports consent duration and review in Waimakariri, with no specific decision sought.

8.111. We acknowledge the support for setting and managing towards nitrate limits and targets and recommend accepting this submission.

General submissions in opposition to the nitrate management provisions

Overview

8.112. A significant number of submitters generally oppose and submit on the entirety of the proposed nutrient management provisions.

8.113. Submitters largely support the initial nitrogen loss reductions (required by 1 January 2030) but oppose, and seek the deletion of, any further reductions beyond this date. Reasons for opposing the nutrient management provisions include:

- inadequate evaluation of the economic cost associated with the provisions;
- the achievability of further reductions and the impact on farm businesses and wider communities; and
- uncertainty in the modelling supporting the provisions.

Submissions on the Section 32 analysis

Submissions and analysis

8.114. Several submitters request that the Council provides further information or analysis of the costs and benefits of the proposed provisions. V Buck opposes the plan change on the basis that there is a lack of alignment between the costs and benefits. WIL and others request that the Council considers the costs associated with the proposed reductions required by Table 8-9. They also state that it is unclear whether alternative land uses are available to assist in achieving the water quality limits, stating that lifestyle blocks (which they consider to be the most likely next most valuable land use) would continue to have nitrate loss.

---

2069 For example; M Baird (PC7-268.4), K De Lu (PC7-256.4), J Downard (PC7-261.4), D J Evans (PC7-123.6), C Low (PC7-99.4), E Perriam (PC7-398.4), W Reiner (PC7-119.4), A Ridden-Harper (PC7-388.4), J Robertson (PC7-116.4), M J Ross (PC7-78.4), F Zhang (PC7-80.4)

2070 PC7-205.17

2071 For example; Croft Farming Ltd (PC7-324.61, PC7-324.40), Rosebrook Farm (PC7-329.5, PC7-329.6), G Reed (PC7-374.38, PC7-374.39), T Stokes (PC7-369.3, PC7-369.5), Torlesse Farm Ltd (PC7-363.1, PC7-363.2)

2072 PC7-525.5

2073 PC7-349.23

2074 For example; S & J Tallott (PC7-405.26)
8.115. CCC\textsuperscript{2075} seeks that the Section 32 analysis includes the costs of removing nitrate from the water supply, and that an assessment is provided on an alternative scenario in which nitrate nitrogen levels are kept considerably lower. It also requests\textsuperscript{2076} that the Council undertake a proper alternatives evaluation for Table 8-9, given the economic, social, recreational, and environmental value of the Christchurch aquifers as a drinking water supply for Christchurch and its contribution to maintaining ecological values in spring-fed rivers.

8.116. DairyNZ also raises concerns with what they consider to be gaps in the Section 32 assessment, noting that the long-term economic impacts of the reductions were not able to be assessed. It also notes that the additive economic impact of the nitrogen loss reductions and loss of irrigation reliability have not been assessed. Dairy Holdings Ltd\textsuperscript{2077} seeks that the Council appropriately assess the impacts of PC7 Section 8.

8.117. DairyNZ state that impacts on community wellbeing are an important part of a Section 32 evaluation and have not been assessed as part of the PC7 Section 32 Report.

8.118. We note that alternative scenarios that resulted in lower nitrate nitrogen levels was assessed in the development of PC7 (see Kreleger and Etheridge, 2019), where the economic impact of the alternative is included in Harris (2019) and assessed in the Section 32 Report. As described in Part 1, Section 3 of this report, the Section 32 evaluation undertaken for PC7 meets the requirements of Section 32 of the RMA.

Submissions on the Nitrate Priority Sub-areas and reductions in nitrogen loss

Submissions and analysis

8.119. A number of submitters oppose the Nitrate Priority Sub-areas and the total reduction in nitrogen loss required from farming land use activities within the sub-areas. Submitters are particularly concerned about the long-term financial implications for individual farming properties and the flow-on wider social and economic impacts in the Waimakariri district. Several submitters are concerned that even achieving GMP is likely to require considerable individual farm investments on a number of properties.

8.120. A number of Community Boards\textsuperscript{2078} consider that the pace of implementation of the new limits within PC7 must take into account the situation of individual farmers to ensure their economic viability and personal well-being. They seek that “farm advisory assistance” be made available to those most seriously affected by the changes. We note that providing farming advisory assistance is largely out of the scope of PC7, but will be addressed via ongoing implementation of the provisions by Environment Canterbury.

8.121. Alex Mason Contracting Ltd\textsuperscript{2079} requests that the provisions are amended to provide farmers an opportunity to comply with the nitrate rules over an extended period of time, where it is affordable and achievable with a higher level of willingness to comply and allowing the community to continue to prosper and grow. Several other submitters seek amendments to the provisions to provide more achievable targets and timeframes. Conversely, other

\textsuperscript{2075} PC7-337.146
\textsuperscript{2076} PC7-337.179
\textsuperscript{2077} PC7-415.63
\textsuperscript{2078} Oxford-Ohoka Community Board (PC7-148.1, PC7-148.2), Rangiora-Ashley Community Board (PC7 149.3), Woodend-Seton Community Board (PC7-107.3).
\textsuperscript{2079} PC7-290.4
submitters are concerned that the timeframes for achieving the improvements in water quality are too long and seek that there are increased reductions, to achieve the targets sooner.

8.122. Waimakariri NGF seeks the addition of a new policy that requires that by 2040 water quality is to be improved to achieve defined nitrate toxicity limits, and that this is to be achieved by reducing the discharge of nitrogen from farming activities (i.e. meeting the 2030 and 2040 reduction targets) and implementing managed aquifer recharge and targeted stream augmentation.

8.123. We note that the proposed timeframes for the staged reductions in nitrate losses balances the need to maintain and improve water quality with the economic impact of those restrictions. The current CLWRP provisions require consented farming land uses to meet the GMP Baseline Loss Rate by 1 July 2020, where this requirement has been clearly communicated to the farming community for some time. As such, we do not consider that difficulties in meeting the GMP Baseline Loss Rate is a compelling reason for extending the timeframes for the staged reductions. We acknowledge that long term compliance with the proposed reductions in Table 8-9 will be challenging and, in some cases, will necessitate system change. However, continuing with the status quo on the back of extending periods of poor water quality is not consistent with the requirements of the NPSFM (in particular, Objective A2).

8.124. Now that there is a greater appreciation for the meaning and application of Te Mana o te Wai, it is our view that the timeframes for achieving the targets proposed in Table 8-9 warrant re-examination. Improving water quality sooner (i.e. within a shorter timeframe) may be achieved through catchment interventions (such as MAR or TSA), however the greatest certainty comes from increasing the percentage reductions for each 10-year stage, set in Table 8-9.

8.125. We understand that the first 10% reduction in nitrogen loss beyond GMP baseline is unlikely to significantly affect operating profit of dairy farms (Harris, 2019), however increasing the reductions to 30% for dairy in the first 10-year stage will incur significant costs to individuals and the local economy. We acknowledge that increasing the nitrogen loss reductions will have a significant impact on some farms viability and will likely incur a greater economic cost over a shorter time period than what is acceptable to the local ZC and many submitters. In particular, a reduction of 30% in nitrogen losses beyond GMP for dairy farms is modelled to have a 30% reduction in operating profit, meaning that farms with more than average debt will likely be not viable, whereas a reduction of 20% in nitrogen losses beyond GMP for dairy farms is expected to be non-viable for heavily-indebted properties. Objective A4 of the NPSFM seeks to enable communities to provide for their economic well-being, including productive economic opportunities, in sustainably managing freshwater quality, within limits. We note that productive economic opportunities exist within the proposed nutrient management framework, however those opportunities are likely to look different to the current land uses.

8.126. We also understand that there is a long lag time before any improvement will likely be seen in water quality, however it is our view that this should not be used as a reason to delay or

---

2080 For example, CCC (PC7-337.142)
2081 PC7-425.34
2082 Rule 5.44A and Rule 5.54A
2083 Table 12, Harris (2019)
prolong the necessary changes to improve water quality. As such, we consider there are opportunities to include shorter timeframes for achieving the nitrogen reductions in the NPA (for example, over a 30-year period), with the 10-year staged reductions amended to 20 or 30% for dairy and 10%. However, taking into account the required reductions to achieve the water quality limits and targets for some sub-areas, the percentage reduction per 10-year period may differ between each sub-area. There are also likely to be additional nuances with this approach which may be compounded should a new NPSFM raise water quality expectations further. However, should the panel consider that the required reduction in nitrogen loss should be increased per 10-year stage, further analysis will likely be necessary.

8.127. WIL submits that a number of individual dairy farms will be able to achieve a 15% reduction target by 2030, but equally, a number potentially will not meet this target without significant impacts on profitability and a significant risk that the individual farming operation becomes unviable. WIL seeks that the first stage of reductions is retained on the basis that WIL is able to manage losses on an aggregated basis across the NPA. It believes further reductions should form part of a future plan change review process when more information is known. WIL also notes that these restrictions will have flow-on economic and social effects on the affected farming businesses, and the wider community.

8.128. A number of submitters seek that the Nitrate Priority (NP) Sub-areas be removed so that the area is encompassed via one zone with one set of reductions. The reasons for requesting that the sub-areas are removed include:

- The sub-areas are arbitrary;
- The inclusion of single nitrogen loss requirements in the nitrate priority areas (to 2030) would lessen the risk of community divide, and may encourage a more collaborative approach to achieving the nitrogen loss requirements;
- that there is too much uncertainty in the existing monitoring and modelling to justify the longer-term reductions set out in Table 8-9;
- the extent of long-term reductions as currently set out is likely to severely impact farm viability and/or require fundamental farm system change in parts of the NPA;
- The long-term reductions are a disincentive for farmers to invest in wider catchment interventions.

8.129. Subsequently, submitters have asked for all references to the NP sub-areas to be removed from PC7, which includes Table 8-9, the planning maps, definitions, and parts of the nutrient management policies and rules in Section 8.

8.130. We note that the Nitrate Priority sub-areas are integral for meeting the water quality limits for each of the receptors (receiving waterbodies) both within the sub-region and outside the sub-region boundaries. A full description of how the NPA was delineated into sub-areas is contained in Appendix D.1. Removing the sub-areas from PC7 and allowing the management of nitrogen losses on an aggregated basis (either by an irrigation scheme or a Farming Enterprise) could result in greater reductions occurring in a concentrated part of the NPA, and lesser reductions occurring in other areas, meaning that the necessary progress is not made.

---

2084 PC7-349.41
2085 Rosebrook Farm (PC7-329.66, PC7-329.4, PC7-329.67)
2086 Synlait Farms (PC7-188.8)
2087 For example, WIL (PC7-349.24)
2088 For example, DairyNZ (PC7-357.42)
2089 WIL (PC7-349.19)
towards achieving all the water quality targets and limits. We do not recommend removing the NP sub-areas from the plan.

8.131. As part of removing the longer-term reductions in nitrate losses (beyond 2030 or 2040) submitters suggest that ongoing monitoring and modelling is required to better understand the impacts of farming. WIL seeks that further comprehensive monitoring is undertaken to better inform future decision making, but the need for long-term reductions should form part of future plan review processes (rather than being directly anticipated now)\textsuperscript{2090}. Carleton Dairies Ltd\textsuperscript{2091} seeks that the Council facilitates localised catchment management to improve water quality and biodiversity.

8.132. Several of these submitters state that the requirement for, and scope of, any future reductions should be determined following a review of the provisions after 2030. G Reed\textsuperscript{2092} requests that this review occur earlier in 2027. The submitters\textsuperscript{2093} consider that this would allow for the development and use of new science, technology and monitoring data to measure nitrate diffusion (following the initial reductions), and to inform any future methods to address nitrogen losses.

8.133. We note that future plan reviews will determine the most appropriate methods for meeting water quality limits and targets over time, as new technologies and more data becomes available. However, the current information indicates that significant changes in land management are necessary to achieve the water quality limits and targets. Removing the proposed reductions beyond 2030 or 2040 from Table 8-9 would result in a gross understatement of the actions required to improve water quality. We acknowledge the direction in Objective A4 of the NPSFM (to enable communities to provide for their economic well-being in sustainably managing freshwater quality, within limits) and note the staged reductions allow for reductions to be applied over time, to spread the financial cost of implementing mitigations (where feasible). We consider there is sufficient information available to warrant a conservative approach to setting water quality limits and the methods to achieve them. As such, we recommend retaining a revised version of the nitrogen loss reductions in Table 8-9.

8.134. We also note that the proposed provisions already include guidance for monitoring plan effectiveness (Policy 8.4.35), which includes an “assessment of the effectiveness of the framework” in achieving freshwater outcomes and limits. Given the that regulatory framework is heavily reliant on managing farming land use activities, the evaluation will require an understanding of the impacts of farming. Given that the proposed provisions already include this guidance, it is recommended that the submission from WIL (and others) is not accepted.

8.135. A Hawkins\textsuperscript{2094} seeks that all references to NPA and Table 8-9 are deleted from PC7, as an alternative, seeks that PC7 is amended to include a new definition of dairy support, so that

\begin{footnotesize}
\begin{itemize}
\item \textsuperscript{2090}PC7-359.24
\item \textsuperscript{2091}PC7-273.5
\item \textsuperscript{2092}PC7-374.58, PC7-374.59
\item \textsuperscript{2093}For example; Torlesse Farm Ltd (PC7-363.1, PC7-363.2), Gilchrist Brothers Ltd (PC7-483.1, PC7-483.2), Parkdale Ltd (PC7-353.1, PC7-353.2), Knightlea Ltd (PC7-368.6, PC7-368.7); Aratika Trust (PC7-199.30).
\item \textsuperscript{2094}PC7-413.14
\end{itemize}
\end{footnotesize}
self-sufficient dairy farms can apportion the reductions in nitrogen loss according to land use type on the property, as follows:.

Dairy support means pastoral farming where the animals grazed are dairy cattle not being milked (young animals or mixed-age cows) that are grazed of the milking platform (i.e. the area devoted to feeding dairy cows on a daily basis during the milking season) either temporarily or throughout the year.

8.136. We note that in the modelling undertaken to determine the staged reductions in Table 8-9, a dairy support component of a dairy farm was modelled as a 15% reduction. However, a dairy support unit that is not part of a dairy farm (i.e. a standalone operation), was modelled as a 5% reduction. The difference is due to the difficulties of isolating a dairy support component of a dairy farm from the farm land use map used to inform the modelling. This means that for groundwater recharge zones with a high percentage of dairy farms that also have dairy support land, the modelled reductions per 10-year stage may be slightly greater than the actual reduction rates that are achieved, depending on the relative proportions of dairy platform and dairy support. Accordingly, we do not recommend that the amendments sought by A Hawkins are adopted.

8.137. Several submitters also raise concerns with the accuracy of the modelling used to calculate the required reductions within Table 8-9. Croft Farming Ltd and Wai Eyre Farm Partnership state that it is important to move away from a predicted model to a measured science approach. Rosebrook Farm consider that a review in 2030 may provide for the use of a more robust model to calculate any reductions required in future.

8.138. We have addressed submissions about the appropriateness and accuracy of the modelling undertaken to support PC7 earlier in this report. We also note that considerable time and resource was invested in the technical work and modelling that underpins PC7 to ensure that the science is technically sound and fit for purpose. As described later in this report, the technical work and modelling that underpins PC7 underwent an extensive external peer review process. It is acknowledged that there is inherent uncertainty in the modelling, which has been rationalised as much as possible through the modelling process. The risk of acting or not acting if there is uncertain or insufficient information about the subject matter of PC7 has been assessed in the section 32 report, and we note that uncertainty of scientific information is not a reason alone to take no action. In the absence of evidence supporting these submissions, we consider this is the best information available and is sufficiently certain to warrant action towards improving water quality, using the methods set in Section 8. We recommend rejecting the submissions seeking the provisions are amended or deleted due to concerns about the modelling and science that underpins PC7.

8.139. Three submitters considers that historic investments and voluntary reductions should be taken into account when determining future reductions beyond 2030. Within these submissions, several submitters note environmental initiatives and other investments already established on their farms, such as fencing of waterways and infrastructure upgrades.

8.140. We note that proposed Policy 8.4.27 already provides for the scenario described by these submitters, and do not recommend any additional policy guidance is necessary.

---

2095 The farm land use map is described in Section 2.3 of Lilburne et al (2019)
2096 Croft Farming Ltd (PC7-324.103), Wai Eyre Farm Partnership (PC7-274.3), Rosebrook Farm (PC7-329.7)
2097 Croft Farming Ltd (PC7-324.19), Parish Dairies and Todd Enterprises (PC7-442.3), Wai Eyre Farm Partnership (PC7-274.3)
8.141. Croft Farming Ltd\textsuperscript{2098} consider that testing of nitrate diffusion on an individual farm should be used to inform whether any future reductions are required. Ashley Gorge Farming Company\textsuperscript{2099} seek that the community works together towards an overall groundwater nitrate nitrogen concentration after 2030. D R & RE Clark, Wani Grange Ltd and Swanlea Fields Ltd and Glen Eyre Dairy Ltd\textsuperscript{2100} also consider the provisions are not consistent with a community approach towards maintaining or improving water quality.

8.142. We note that PC7 is addressing the cumulative impact of diffuse discharges of contaminants, and while nitrate diffusion testing on an individual farm basis may provide useful information, it is unclear how this will assist with achieving the water quality limits and targets. It is not recommended that the submission from Croft Farming Ltd is accepted. Regarding submissions seeking a community approach to maintaining or improving water quality, we note that there are still opportunities for the community or groups of landowners to work together to implement other on the ground actions that will result in improved water quality outcomes (including MAR and TSA). It is unclear what specific amendments are necessary to better provide for the community approach favoured by the submitters, that still provides a clear pathway for achieving water quality limits and targets (as required by Policy A2 of the NPSFM). As such, we do not recommend accepting these submissions.

8.143. M Adams\textsuperscript{2101} requests that PC7 is amended to include a targeted approach for farmers with high nitrogen losses and work with them to address the issues. We note that to achieve the freshwater outcomes and water quality limits and targets, all properties that require consent (irrespective of the nitrogen loss relative to other properties) are required to adhere to the methods in PC7 for managing nutrient discharges. It is recommended this submission is rejected.

8.144. WIL\textsuperscript{2102} requests that the provisions are amended to balance the NPSFM framework against the wider considerations that reflect sustainable management rather than the achievement of water quantity and quality outcomes at the potential cost of the total loss of farming within at least large parts of the NPA. We note that these matters were considered at length during the plan development stage and are set out in the Section 32 Report and supporting documentation. No amendments are recommended by us in response to this submission.

**Submissions on the nitrate modelling**

**Submissions and Analysis**

8.145. Several submitters\textsuperscript{2103} oppose the proposed provisions for managing nitrate on the basis that the modelling undertaken to support PC7 has a high degree of uncertainty, is not backed up by ‘robust science’\textsuperscript{2104} and a lack of technical data\textsuperscript{2105}. Several submitters are concerned that the median or 50\textsuperscript{th} percentile scenario is not accurate or achievable. Several submitters\textsuperscript{2106}

\begin{footnotesize}
\textsuperscript{2098}  PC7-324.103
\textsuperscript{2099}  PC7-195.5
\textsuperscript{2100}  D R & RE Clark, Wani Grange Ltd and Swanlea Fields Ltd (PC7-230.2), Glen Eyre Dairy Ltd (PC7-113.1)
\textsuperscript{2101}  PC7-554.4
\textsuperscript{2102}  PC7-349.20
\textsuperscript{2103}  WIL, DairyNZ
\textsuperscript{2104}  Carleton Daries Ltd (PC7-273.11)
\textsuperscript{2105}  Gilchrist Brothers Limited (PC7-483.24)
\textsuperscript{2106}  V. Southworth (PC7-293.5), D Hartwell (PC7-170.2)
\end{footnotesize}
request that a precautionary approach (adopting the 95\textsuperscript{th} percentile model results) should be used as a basis for setting limits and provisions in PC7.

8.146. A number of submitters\textsuperscript{2107} seek that the Council provides more certainty around the science used to set nitrate reductions and how the effectiveness of these reductions will be monitored going forward. We note that proposed Policy 8.4.35 includes direction for the Council to monitor the catchment, particularly for future plan reviews.

8.147. In its submission, DairyNZ states that it has commissioned Aqualinc to undertake an independent review of the hydrogeological model, who concluded it is more likely than not that flow is predominantly towards the coast, rather than Christchurch city. It states that there are various mismatches between measured and modelled nitrate concentrations; and measured nitrate trends are sometimes inconclusive, flat, or declining in some areas that are modelled to increase.

8.148. CCC is concerned about the potential for considerably faster transmission of nitrate into deep aquifers in Christchurch.

8.149. We note that while the submission from CCC does not contain evidence about the travel time of groundwater, we acknowledge that groundwater travel times cannot be known precisely and there is uncertainty in how long it will take to see measurable effects in the Christchurch aquifers. The modelling undertaken for Part C of PC7 assumed a linear increase in nitrate over time and estimated that it would take in the order of 100 to 200 years to exceed a nominal threshold of 3.8 mg/L in deep wells in Western Christchurch.

8.150. To address CCC’s concerns, we have refined the modelling by introducing assumptions of mixed groundwater ages which were ignored in Kreleger and Etheridge (2019). The Exponential Piston Model and Binary Mixing Model are both models that take into account mixed groundwater ages, with Binary Mixing Model also accounting for primary and secondary porosity of the aquifer. The refined modelling (set out in Appendix D.2) shows that accounting for groundwater age distribution does not result in a considerably faster transport of nitrates to the deep aquifers of Christchurch and that there is still a high probability that it will take several hundred years to exceed the threshold of 3.8 mg/L. Therefore, we consider that the potential for considerably faster travel times towards the Christchurch deep aquifer system is low.\textsuperscript{2108}

8.151. The assertion from DairyNZ that groundwater flow is more likely towards the coast instead of the deep Christchurch aquifers appears to be drawn from a presentation by Aqualinc on 3 September 2019. A copy of this presentation was included with several submissions (e.g. Onfarm Data Ltd\textsuperscript{2109}), but not by DairyNZ.

8.152. The Aqualinc presentation does not contain any evidence to support the claim that groundwater in the Waimakariri zone is more likely to flow to the east rather than towards Christchurch. In lieu of evidence, the presentation instead focuses on the paucity of data on the deep aquifer system and concludes that the available data is inconclusive and therefore the groundwater model cannot be used to predict deep flow towards Christchurch. We note that this conclusion is contrary to the unanimous conclusion of the panel of six external

\textsuperscript{2107} For example; Oxford Agriculture Services Ltd (PC7-409.1)
\textsuperscript{2108} This paragraph was prepared by Amber Kreleger and Zeb Etheridge
\textsuperscript{2109} PC7-232.7
groundwater experts who were engaged to review the evidence for connectivity between these groundwater systems. 2110

8.153. Section 3.4 of Kreleger and Etheridge (2019) describes the three-year collaborative groundwater model development programme (September 2015 - November 2018). The technical team were supported by a Technical Lead Advisory Group and an expert panel comprising individuals (research scientists and consultants) from a range of backgrounds with extensive experience in the study area. Model-based and conceptual evidence obtained in this programme supports the conclusion that groundwater draining from part of the Waimakariri sub-region is likely to flow into the Christchurch aquifer2111, and therefore we do not recommend accepting the submission from DairyNZ.

8.154. We note that evaluation of modelling uncertainty was identified as a key issue for the technical work supporting Part C of PC7, as described in Sections 8, 9 and 10 in Etheridge and Hanson (2019a) and Sections 3.3 – 3.6 in Kreleger and Etheridge (2019). Appendix D.3 includes a summary of the modelling uncertainty for Part C of PC7, which is further summarised below.2112

8.155. Modelling uncertainty was addressed by:
   a. Quantifying the potential range of nitrate loss rates from the soil profile;
   b. Evaluating and incorporating the degree of mixing between high nitrate drainage water from agricultural land with low nitrate water sources like irrigation race and Waimakariri River leakage; and
   c. Using a state-of-the-art numerical modelling uncertainty analysis technique to explore the potential range of flow paths for nitrate leaching from high intensity farmland to receptors like spring-fed streams and the Christchurch aquifer.

These three main elements of modelling uncertainty were combined through statistical analysis techniques to generate stochastic (i.e. probabilistic) projections of future nitrate concentrations.

8.156. The 50th percentile nitrate concentration is the middle point in the range of our modelling results: there is a 50% probability that the true nitrate concentration will be either lower or higher than the modelled value. For the 95th percentile model results there is a 95% probability that the true nitrate concentration will be lower or a 5% probability that the true nitrate concentration will be higher than the modelled value.

8.157. Using the more conservative 95th percentile model results to estimate the total long-term loss rate reduction will only have limited water quality benefits compared to using the median (50th percentile) results, but the implementation costs are significantly higher due to land value impacts associated with higher long-term nitrate loss rate reduction requirements2113. The Waimakariri ZC recommended focussing on the 50th percentile model results for the Solution Package. Given that using the 95th percentile model results only provides limited water quality benefits relative to the implementation costs, we do not consider it appropriate to use these results as the basis for setting water quality limits/targets and the methods to achieve those limits. We recommend rejecting the requests from submitters to use those model results.

2110 This paragraph was prepared by Amber Kreleger and Zeb Etheridge
2111 This paragraph was prepared by Amber Kreleger and Zeb Etheridge
2112 Paragraphs 9.155-8.157 were prepared by Amber Kreleger and Zeb Etheridge.
2113 Harris (2019), Section 3.2, page 29.
8.158. We acknowledge the inherent uncertainty in modelling and consider that the process and refinement of the modelling undertaken for PC7 is robust and the models are fit for purpose. We consider there is sufficient information and certainty to take action to improve water quality using the methods prescribed in Section 8.

**Submissions on measuring success: meeting the freshwater outcomes, limits and targets**

**Submissions and Analysis**

8.159. WIL submits that the link between the outcomes and the percentage reductions is weak and the provisions do not clearly identify the measure of success. It states that achieving the desired outcomes will be reliant on a combination of achievable (but still significant) changes in farming systems, catchment interventions and improved farming practices. The submitter seeks that PC7 Section 8 be amended to clearly identify, at a policy level, the outcomes being sought, but to defer to longer-term reductions until such a time as existing water quality is better understood and the model is ‘ground-truthed’. In particular, it requests the inclusion of a policy and rule package\(^\text{2114}\) that identifies a target nitrate nitrogen concentration and notes that this will be achieved by both reductions in farming activities and catchment interventions/future technologies. Dairy Holdings Ltd\(^\text{2115}\) and Waimakariri NGF\(^\text{2116}\) also seek a similar policy and rule package.

8.160. We agree that there is the opportunity to better place more emphasis on the package of interventions available to achieve the nitrate nitrogen limits and targets. However, without certainty that voluntary interventions will be implemented and are successful, the nitrate reductions set out in Table 8-9 are necessary to demonstrate a clear pathway for achieving the limits and targets. It is recommended the submissions from WIL, Dairy Holdings Ltd and Waimakariri NGF are rejected.

8.161. CCC submits that the targets and timeframes contained in the tables in Section 8 are not adequately connected to the proposed policies and rules, such that the consequences of them not being met are not clear. CCC seeks that the provisions are amended to adequately connect to the tables in Section 8.\(^\text{2117}\) It also submits that there is no indication about the frequency and method used to determine whether the limits/targets are being met. We consider that the proposed provisions (including strategic Policy 4.7 in Section 4 of the CLWRP) provide a sufficient link between the targets and timeframes contained in the tables, and it is unclear how this link could be improved. We recommend rejecting this submission from CCC.

8.162. CCC is also concerned that the timeframes to achieve nitrate nitrogen reduction timeframes are too long. In its submission it raises concerns about the uncertainty associated with the modelling, and states that there is the potential for considerably faster transmission of nitrate nitrogen to could occur into deep aquifers in Christchurch. Accordingly, CCC seek that the reduction targets are brought forward such that nitrate nitrogen concentrations predicted to enter the Christchurch aquifer system are reduced over shorter timeframes\(^\text{2118}\). We have addressed concerns about the uncertainty associated with the modelling and the speed of nitrate nitrogen transmission earlier in this section of the report. Taking into account the

\(^{2114}\)PC7-349.6  
\(^{2115}\)PC7-415.51  
\(^{2116}\)PC7-425.34  
\(^{2117}\)For example: PC7-337.183  
\(^{2118}\)PC7-337.107 and PC7-337.142
technical information available and the likely impact of faster reductions on landowners within the NPA, we do not recommend bringing forward the reduction targets, as requested by CCC.

**Submissions on plan effectiveness and monitoring**

**Submissions and Analysis**

8.163. Several submitters support the proposed guidance for monitoring, modelling and reporting on the effectiveness of PC7. Waimakariri NGF\textsuperscript{2119} submits that it is committed to working with the Council, and other stakeholders to develop and implement a stronger water quality monitoring programme and data analysis programme to inform the next plan review. It notes that farmers will likely have bores and surface water sampling sites that can be monitored on behalf of the Council, and that data can be amalgamated to help show relationships and trends in water quality and quantity over time.

8.164. Several submitters\textsuperscript{2120} raise concerns about the timeframes to achieve the targets in Table 8-5 and 8-8. To alleviate these concerns, CCC\textsuperscript{2121} requests that the provisions are amended to specify the method(s) by which nitrate levels will be monitored and the frequency with which monitoring will be undertaken in order to determine progress towards meeting limits/targets in Tables 8-5 to 8-8. It also requests clarification how the targets in Table 8-5, 8-6, 8-7 and 8.8 will apply to a resource consent application on an individual basis. Kaiapoi-Tuahiwi Community Board\textsuperscript{2122} request continuous monitoring for water quality in the middle of the Kaiapoi River to clarify the extent and effectiveness of solutions to improve water quality.

8.165. Ngāi Tūāhuriri Rūnanga\textsuperscript{2123} is concerned about the time taken to return to reasonable water quality outcomes. The submitter considers that land use change and substantial changes in farm practices are needed and that the scale of change needed should be strongly indicated to existing landowners. It states that being explicit about the ongoing need for improvement and giving the future reductions regulatory weight will provide certainty both for Ngāi Tūāhuriri Rūnanga and landowners. As such, the submitter seeks that the requirements for staged reductions in Table 8-9 are retained throughout PC7.

8.166. We note that specifying procedures for monitoring effectiveness of a regional plan is not a mandatory requirement under the RMA\textsuperscript{2124}, and that the CLWRP does not include such procedures as a matter of course. However, it is acknowledged that monitoring is an important part of the policy cycle that will assist with determining the efficiency and effectiveness of the provisions, as reflected in proposed Policy 8.4.35. Section 35 of the RMA requires regional councils to undertake a review of the efficiency and effectiveness of the policies and methods of a regional plan at five-year intervals after a plan becomes operative. That review may inform changes that need to occur to the provisions. Submissions on Policy 8.4.35 are analysed in Part 5, Section 10 of this report.

\textsuperscript{2119} PC7-425.16
\textsuperscript{2120} For example: Kaiapoi-Tuahiwi Community Board PC7-148.36; Rangiora-Ashley Community Board PC7-149.36; Forest & Bird PC7-472.123; Ballance PC7-441.52
\textsuperscript{2121} For example: PC7-337.98
\textsuperscript{2122} PC7-42.3
\textsuperscript{2123} PC7-399.15
\textsuperscript{2124} Section 67(2)(e) of the RMA provides that a regional plan may state the procedures for monitoring the efficiency and effectiveness of the policies and methods in the plan.
Submissions on OVERSEER® and the Farm Portal

Submissions and Analysis

8.167. Several submitters2125 oppose the provisions in PC7 that are based on a model and not measured data. They believe that the model will not adequately show or represent the “nitrate diffusion changes” and that OVERSEER® and the Farm Portal are unable to effectively reflect the farm systems and subsequently generate the GMP portal number.

8.168. Several submitters2126 seek that the provisions are amended to set “firm GMPs and create achievable proxies to give farmers certainty with the numbers so they know where to start from” or provide an alternative set of guidelines for calculating GMP (in particular, for the nitrogen and irrigation proxies).

8.169. Ashley Gorge Farming Company2127 is concerned about the variability of the OVERSEER® model and believes that good farmers with good practice will be “criminalised through a flawed computer model”. The submitter seeks that PC7 is amended with a “replacement measuring system”. The submission does not include a description of the system sought by the submitter.

8.170. The appropriateness of the use of OVERSEER®, the Farm Portal and the proxies to model GMP has been discussed in Part 2, Section 3 of this report. In addition to the conclusions reached in that part of the report, we note that the starting point for reductions is generally the GMP baseline loss rate, where if the portal is unable to generate a number, then the “equivalent pathway” is provided for (see Policies 8.4.28B and 8.4.28C).

Submissions requesting alternative management approaches

Submission and Analysis

8.171. Many submissions have been received in opposition to the provisions that manage diffuse nutrient discharges and have sought alternative approaches for managing land use. These approaches include managing land use through FEPs and removing the proposed nutrient management framework.

8.172. Beef + Lamb opposes the proposed nutrient management framework, stating that it is based on grandparenting which does not incentivise land use change and unfairly disadvantages past/current low emitters. Beef + Lamb2128 requests the development of an alternative nutrient management framework to meet the list of criteria set out in its submission. It proposes two alternative approaches to manage nutrient allocation in the Waimakariri sub-region. The first is to set a flat rate of permitted nitrogen discharge per hectare based on the sub catchment load. The second option is based on the natural productive potential of soil and would manage nitrogen allocation based on the LUC classification system. Beef + Lamb have requested similar relief for Section 14 of the CLWRP (Part B of PC7). A full summary and assessment of the alternative management approach is set out in Part 4, Section 12 of this report.

2125 For example; The Downs Pastures Ltd and the Gillespie Family Trust (PC7-196.2, PC7-196.6)
2126 PLI & BS Philpott (PC7-229.14, PC7-229.7), Pineleigh Farm Ltd (PC7-372.25)
2127 PC7-195.3
2128 PC7-214.81
8.173. WIL\(^{2129}\) seeks that the nitrogen losses from the WIL scheme area are managed as a load, based on the baseline of its existing consent, calculated from files derived from the technical work undertaken by MRB. This submission is addressed in relation to Table 8-9 in this report.

8.174. Several submitters\(^{2130}\) submit that an adaptive management approach is more appropriate for managing nutrient discharges and meeting the freshwater outcomes than the proposed provisions. As One Incorporated seeks several amendments to the provisions to enable an adaptive management approach, which includes reliance on measured data for the “assessment of the actual reductions in nutrient losses” and allowing an adaptive management response “tailored and able to respond to whether, or to what extent, the measures implemented through the proposal do actually result in improvements in water quality”. DairyNZ makes similar statements in its submission.

8.175. We note that the long-term targets (and associated reductions in nitrogen losses), along with 10-year plan review cycles, will enable provisions to change and adapt as further information and new technologies become available. We do not consider it necessary or appropriate to include a true adaptive management approach as part of the PC7 provisions.

8.176. F Hill\(^{2131}\) requests that targets are included within PC7 to remove stock units within the Waimakariri sub-region. They consider that no more cows should be allowed in the Waimakariri zone until there is “overwhelming evidence” that water quality is improving. D A Rankin\(^{2132}\) requests, in relation to the Christchurch groundwater capture zone\(^{2133}\), the insertion of new nutrient management rules that remove “any dairy farming as it is currently being practiced” and any other high emitters such as irrigated beef farms or vegetable growing operations within this area. The submitter seeks that only farming practices that result in zero effluent or very little discharge to the aquifer capture zone, or forestry, be permitted in future.

8.177. T Huggins\(^{2134}\) requests that no topdressing occurs within 30 km of the Waimakariri River, and instead fertiliser should be drilled into the soil when planting, or practice organic regenerative farming. T Huggins also requests a reduction in irrigation.

8.178. We note that the managing the nitrogen losses from each property enables landowners to determine the most appropriate land use for their property, including stocking rates and methods for applying fertiliser, within the prescribed limits. We consider that the proposed rules for managing farming land uses and nutrient discharges appropriately limit further intensification in the Waimakariri sub-region and additional controls are not considered necessary and as such, do not recommend adopting the submission from F Hill, D A Rankin or T Huggins.

8.179. A Sanders\(^{2135}\) requests that the impacts on water quality from sources of contaminants other than livestock are reasonably considered. The submitter identifies a range of biological

---

\(^{2129}\) PC7-349.9

\(^{2130}\) Synlait (PC7-188.4), As One Inc (PC7-387.34), DairyNZ (PC7-357.27), Claxby Irrigation (PC7-433.29)

\(^{2131}\) PC7-400.7

\(^{2132}\) PC7-220.38

\(^{2133}\) The submitter identifies this area as “…essentially all of Sub-area A of the NPA and any other relevant parts in Figure 3-8 in Kreleger and Etheridge (2019) and elsewhere…”

\(^{2134}\) PC7-13.2

\(^{2135}\) PC7-266.15
contaminant sources that they consider have an impact on water quality including birds such as ducks, geese and gulls. The submitter also requests further studies on the impact of 1080, sprays, and drugs (pharmaceutical and illicit) in urban areas on water quality.

8.180. We acknowledge that water quality can also be degraded as a result of other inputs, including run-off from urban environments and birds. However, these issues are generally not within the jurisdiction of a regional council and recommend that this submission is rejected.

8.181. Both Synlait and As One Inc\textsuperscript{2136} have requested that additional provisions be inserted into Section 8 which set out requirements for farm-scale water quality monitoring. Synlait considers that an increase in information and monitoring data, from a wider range of sources, will result in better science when the CLWRP is reviewed again. It states that any decisions should be based on measured outcomes and not modelled assumptions.

8.182. As discussed previously in this report, the provisions seek to manage the cumulative impacts of farming land uses on water quality, and while we consider farm scale water quality monitoring could provide useful information to feed into catchment modelling, it is unclear how this could assist in achieving the water quality limits and targets.

Submission on the nutrient management policies

8.183. The following sections summarise and consider the submissions that seek specific relief for the policies related to nutrient management (nitrates).

Policy 8.4.25

Introduction

8.184. Policy 8.4.25 describes the methods that will be used to achieve nitrate nitrogen limits and targets in the Waimakariri sub-region and to manage nitrate concentrations of waterbodies outside the Waimakariri sub-region. The methods include restricting the area of land used for farming or for winter grazing as a permitted activity (relative to the region-wide rules); and requiring further reductions in nitrogen loss from farming activities in the NPA.

Submissions and Analysis

8.185. Policy 8.4.25 received 79 submissions, with 16 in opposition seeking that the policy is deleted in its entirety and 14 submissions in support seeking that the policy is retained as notified.

8.186. C McLachlan\textsuperscript{2137} opposes proposed Policy 8.4.25, stating that the time period for nitrate reductions needs to be shortened, and the overall reduction needs to be significantly increased. The submitter also states that the targets for nitrate concentrations are too high to protect ecosystems and likely to be too high to protect human health. The submitter includes reference to a number of studies to support their submission. As discussed in earlier sections of this report, we recommend amending the time period for nitrate reductions on the basis that the staged reductions need to strike a more appropriate balance between the need to meet freshwater outcomes and providing the farming community time to implement appropriate changes on their properties (which are significant). We also do not recommend

\textsuperscript{2136} Synlait (PC7-188.6), As One Inc (PC7-387.32)
\textsuperscript{2137} PC7-57.2
increasing the overall reductions. The modelling indicates that the proposed staged reductions for each Nitrate Priority Sub-area are likely to be sufficient to meet the water quality limits and targets proposed for the Waimakariri sub-region, and the receiving environment outside the sub-region boundaries. We recommend the submission from C McLachlan is accepted in part.

8.187. Melbury Ltd\textsuperscript{2138} seeks that clause (a) of proposed Policy 8.4.25 is amended to exclude the Ashley Rakahuri FMU/Orange NAZ, or specifically only include the NPA/Red NAZ. The submitter states that further restrictions on permitted activities in the Ashley Rakahuri FMU are not justified.

8.188. Federated Farmers\textsuperscript{2139} seeks that restrictions on intensive winter grazing are amended to reflect the region-wide rules. Federated Farmers state that the region-wide restrictions have been well considered and through rigorous hearing and appeal processes. The submitter believes that the rationale for imposing greater restrictions on winter grazing in the Waimakariri sub-region (as articulated in the Waimakariri ZIPA) is “vague” and needs to be justified. The submission from Federated Farmers describes the low likelihood of landowners increasing their winter grazing up to the region-wide threshold using the recent information prepared for Plan Change 1 to the HWRRP, stating that there is no demand for winter grazing and farmers choose not to engage in it. The submission also states that the lower 5\% threshold proposed for the Waimakariri sub-region removes a lot of flexibility for dryland farmers.

8.189. We note that the tighter controls on permitted farming land uses are in response to the need to maintain water quality, particularly in the Ashley Estuary/Te Aka Aka which is particularly susceptible to nitrogen enrichment and subsequent ecological consequences (including eutrophication)\textsuperscript{2140}. Given that the operative permitted activity thresholds for winter grazing and other intensive land uses may result in increased nitrogen loads in the Estuary, we recommend retaining the more stringent permitted activity thresholds for winter grazing and irrigation in the Waimakariri sub-region, as proposed by PC7. We note that where consent is needed for a farming land use activity, an audited FEP is required. FEPs must also include the actions that will be implemented to minimise contaminant leaching and run-off (amongst other things), which will result in reduced sediment, phosphorus and microbial contaminants entering waterbodies.

8.190. The technical work undertaken to support PC7\textsuperscript{2141} assumed 50\% uptake of the winter grazing allowances permitted under PC5. We note that a different method for estimating winter grazing uptake was used for Plan Change 1 to the HWRRP (where it was assumed an overall 50\% increase on average winter grazing area on farms with no irrigation). We do not consider it is appropriate to compare the assumptions made for a different geographical area, where there is significantly different climate, topography and drivers for winter grazing. Rather than using a highly conservative 100\% uptake assumption (which although possible, is highly unlikely to occur in reality), the technical work took the middle ground by assuming a 50\% uptake of the proposed permitted activity winter grazing allowance.

\textsuperscript{2138} PC7-172.2
\textsuperscript{2139} PC7-430.87
\textsuperscript{2140} As described in Arthur et al (2019), Appendix 3, Section A.3.6.2.
\textsuperscript{2141} Kreleger & Etheridge (2019)
8.191. A number of submitters request that the policy is amended to delete reference to the NPA and Table 8-9. As One Incorporated seeks the deletion of clause (b) of Policy 8.4.25 so that measures are directed at those demonstrated to be key sources of elevated losses, enabling all farmers within the sub-region to be treated equally. C & S McAlister seek the deletion of Table 8-9 and instead seek focus on practical solutions and environmental outcomes through FEPs and to facilitate localised catchment management and restoration projects to improve water quality and biodiversity.

8.192. Ravensdown supports this policy intent and the subsequent rules that flow from it as this is consistent with the recommendations of the Waimakariri ZIPA. The submitter supports the establishment of an NPA where the focus is to reduce nitrogen losses over time to achieve the nitrate nitrogen targets within the Waimakariri sub-region. However, it believes the aim of any nitrogen loss reductions should be to achieve, on a cumulative basis, the relevant water quality targets and not the continued staged percentage reductions specified in Table 8-9 (or the continual annual nitrogen losses set out in clause (b) of Policy 8.4.25). As such, Ravensdown seeks the removal of Table 8-9 from proposed Policy 8.4.25 and replaced with the following:

b. requiring within the Nitrate Priority Area, further reductions in nitrogen loss from farming activities (including farming activities managed by an irrigation scheme or principal water supplier) are required to contribute to the achievement of the nitrate nitrogen and total nitrogen targets specified in Tables 8-5, 8-6 and 8-8, and, by 2030, for nitrogen losses from dairy farming activities to be reduced by 15% and from all other farming activities by 5% in accordance with Table 8-9, provided that any further stage of reduction required is greater than 3 kg of nitrogen per hectare per year for dairy, or 1 kg of nitrogen per hectare per year for all other farming activities.

8.193. Ravensdown also notes in its submission that it considers the proposed nitrogen loss reductions within the NPA by 2030 are achievable and should be applied within the Waimakariri sub-region.

8.194. We agree with Ravensdown that the aim of the reductions is to achieve the water quality targets and limits and note that the policy already clearly states this. We consider that the proposed staged reductions in nitrogen losses provide plan users with certainty and sets a clear pathway for achieving the water quality limits and targets in the plan. The staged reductions are intrinsically linked to the water quality limits and targets, where these will be reviewed in future plan review processes. Removing the requirements for nitrate loss reductions removes an integral part of the solution package for achieving the freshwater outcomes for the Waimakariri sub-region (consistent with Policy A2 of the NPSFM). As described later in this section of this report, we do not recommend deleting Table 8-9 or any of the staged reductions, and subsequently recommend retaining this reference in Policy 8.4.25.

8.195. With reference to the Common Issues section on the drafting style of the proposed provisions, we recognise there are opportunities to improve the wording of Policy 8.4.25, and subsequently recommend that Policy 8.4.25 is amended.

---

2142 For example: W D Croft (PC7-139.15)
2143 PC7-387.22
2144 PC7-255.9
2145 PC7-114.67
**Recommendation**

8.196. That Policy 8.4.25 is amended as per Appendix E.

**Policy 8.4.26**

**Introduction**

8.197. Policy 8.4.26 describes the circumstances where a decision maker may consider granting an application for resource consent to exceed the Baseline GMP Loss Rate. The policy sets out that, for properties located in the NPA, applicants must demonstrate how further reductions in nitrogen loss (as set out in Table 8-9) will be achieved.

**Submissions and Analysis**

8.198. There are 61 submissions on proposed Policy 8.4.26, with six in support seeking that it is retained as notified. There are 14 submissions seeking that the policy is deleted in its entirety.\(^{2146}\)

8.199. Melbury Ltd\(^{2147}\) seeks that proposed Policy 8.4.26 is amended to exclude the Ashley Rakahuri FMU/Orange NAZ, or specifically only include the NPA/Red NAZ. The submitter states that further restrictions on permitted activities in the Ashley Rakahuri FMU are not justified. Melbury Ltd also raises concerns about the use of the Farm Portal calculations and erroneous fertiliser and irrigation proxies. The submitter seeks that reference to GMP or GMP Loss Rates are removed and replaced with “Baseline Loss Rate”. We note that submission on the appropriateness of the GMP proxies and the Farm Portal are addressed in Part 2 Section 3 of this report.

8.200. Several submitters\(^{2148}\) seek that clause (c) is deleted from the policy, so that the policy no longer includes reference to the NPA.

8.201. We note that the purpose of the policy is to provide for farming activities that intensified after the nitrogen baseline period\(^{2149}\) by virtue of previous region-wide rules (prior to PC5) allowing for a small amount of intensification in green and orange nutrient allocation zones. This policy is unlikely to apply to activities that are located within a red nutrient allocation zone under the operative CLWRP but allows the Council to consider the lawful exceedance of the nitrogen baseline when processing a resource consent application.

8.202. Ravensdown\(^{2150}\) appears to support clauses (a) and (b) of proposed Policy 8.4.26, noting that would be inappropriate to prohibit continued (and unchanged) farming based on a Farm Portal calculation. In relation to clause (c) of the policy, it states that the aim of nitrogen loss reductions from farming activities within the NPA should be to achieve, on a cumulative basis, the relevant water quality targets rather than the continued percentage reductions in Table

---

\(^{2146}\) Submitters seeking the deletion of the policy are more generally opposed to the nitrate management provisions and do not provide specific reasons for deleting Policy 8.4.26

\(^{2147}\) PC7-172.3, PC7-172.22

\(^{2148}\) For example, J F Mehrtens (PC7-421.6)

\(^{2149}\) “nitrogen baseline” is defined in Section 2 of the CLWRP, which generally means the discharge of nitrogen loss below the root zone, averaged over a 48 month consecutive period within the period 1 January 2009 to 31 December 2013

\(^{2150}\) PC7-114.68
8-9. The submitter has requested amendments to the policy to address its concerns with the proposed framework.

8.203. Regardless of the starting point for the reductions, clause (c) of Policy 8.4.26 requires properties in the NPA to demonstrate via the FEP, how further reductions in nitrogen loss will be achieved. DairyNZ submits that it is not appropriate to require an FEP to include actions to meet a nitrogen loss reduction deadline beyond the next five to ten years. It states that currently unknown technologies and supporting GMPs will continue to emerge, and results of scientific research will continue to inform GMP but the timeframes for development and testing of solutions are long-term. The submitter seeks that the clause (c) is amended to only require the FEP to include actions to meet the first stage of reductions.

8.204. We note that setting staged reductions of nitrogen losses within the provisions of Section 8 provides a clear pathway (method) for achieving the water quality outcomes in PC7, in a way that considers the sources of the nitrogen, as required by Policy A2 of the NPSFM. While there may be other methods available to assist in achieving the water quality limits and targets in Tables 8-5 to 8-8 (i.e. MAR and TSA), there is no certainty that those methods will be undertaken nor how effective those methods will be at achieving the outcomes. In the absence of this certainty, it is our view that it is appropriate to specify the total percentage reduction in nitrogen losses necessary to achieve the water quality limits and targets.

8.205. We acknowledge the concerns raised by DairyNZ regarding the appropriateness of FEPs including actions to meet the long-term nitrogen loss reductions. We are of the view that Policy 8.4.26 does not specifically require applicants for resource consent to demonstrate actions to achieve all the nitrogen loss reductions but agree that it could be made clearer that any actions specified in the FEP are to cover those actions that will be implemented over the duration of any consent granted. We recommend the submission from DairyNZ is accepted in part.

**Recommendation**

8.206. That Policy 8.4.26 is amended as per Appendix E.

**Policy 8.4.27**

**Introduction**

8.207. Policy 8.4.27 provides guidance for consent applications for farming land use activities within the NPA where the nitrogen loss reductions required by Policy 8.4.26 are unable to be achieved by the dates set out in Table 8-9.

**Submissions and Analysis**

8.208. There are 65 submissions on proposed Policy 8.4.27, with 11 in support seeking that the policy is retained and 14 in opposition seeking that it is deleted in its entirety.

8.209. CCC raises several concerns about Policy 8.4.27, in particular how the matters listed in the policy and the extension of time will be implemented in determining whether to grant

2151 PC7-357.17
2152 PC7-337.93 and PC7-337.97
consent, and how such consents will be enforced and monitored once consent is granted. In addition, it states that “matter” (e) requires progress to be made to achieving the nitrate nitrogen limits and targets. CCC\textsuperscript{2153} considers that the use of the words “progress to be made” is very permissive and submits that any allowance for proposed activities that will not meet the nitrogen reduction target dates should only be allowed for where there are clear sets of requirements in the plan. We agree that there are some implementation issues associated with the policy as proposed and recommend that the policy is amended.

8.210. Ravensdown\textsuperscript{2154} generally supports the policy on the basis that it “accommodates the fact that it may not be possible for some farming activities to reduce nitrogen losses”. Ravensdown considers the matters listed within the policy are appropriate and appropriately focusses on achieving water quality limits and targets, not percentage reductions, consistent with Ravensdown’s submission in relation to Table 8-9 and all related provisions.

8.211. DairyNZ\textsuperscript{2155} supports the policy on the basis that it provides recognition of previous efforts and allows landowners to demonstrate a case for continued genuine efforts to work towards nitrogen loss reductions, within a timeframe that maintains financial viability. However, it seeks that the policy is amended so that the ‘extent to which a landowner is affected by additive impacts of increased minimum flows and nitrogen loss rate reductions’ is also considered when consenting farming land uses. DairyNZ considers this approach will allow for a more equitable application of nitrogen loss reductions.

8.212. We do not consider it is appropriate to provide additional circumstances where reductions in nitrogen losses set in Table 8-9 are delayed or not met. It is important to retain the integrity of the solutions package, including the nitrogen loss reductions, as the framework for maintaining or improving water quality relies on this being implemented.

\textit{Recommendation}

8.213. That Policy 8.4.27 is amended as per Appendix E.

\textbf{Equivalent Pathway Policies 8.4.28B and 8.4.28C}

\textit{Introduction}

8.214. Proposed Policy 8.4.28B provides for the use of an equivalent pathway to determine GMP loss rates where the Farm Portal is unable to generate a number, or the number generated is erroneous. Proposed Policy 8.4.28C provides guidance to enable the review of resource consents that contain an equivalent GMP loss rate when the Farm Portal is able to generate a Baseline GMP loss rate or GMP loss rate.

\textit{Submissions}

8.215. There are 55 submissions on proposed Policy 8.4.28B, with five in support seeking that the policy is retained and 11 in opposition seeking that Policy 8.4.28B is deleted in its entirety. Policy 8.4.28C received 52 submissions, with four in support seeking that it is retained as notified and 16 in opposition seeking that it is deleted in its entirety.

\footnote{\textsuperscript{2153} PC7-337.94} \footnote{\textsuperscript{2154} PC7-114.113} \footnote{\textsuperscript{2155} PC7-357.18}
8.216. Claxby Irrigation Ltd\textsuperscript{2156} is concerned that Policy 8.4.28B understates the potential for the Farm Portal to be able to generate Baseline GMP Loss Rates. The submitter is also concerned that the term “erroneous” is unclear and creates uncertainty and the potential for unnecessary costs to be included to establish that the Baseline GMP Loss Rate is erroneous. Claxby Irrigation Ltd seeks that the policy is amended to add criteria to identify when a Baseline GMP Loss Rate or GMP Loss Rate is demonstrated to be erroneous.

8.217. Melbury Ltd\textsuperscript{2157} seeks that Policy 8.4.28B is amended to provide an alternate loss rate calculation where the Farm Portal nitrogen fertiliser proxy is omitted, and different set of irrigation management inputs is used. Both Melbury Ltd and Claxby Irrigation Ltd seek that the reference to “limited” circumstances be removed from the policy, on the basis that it understates the potential for the Farm Portal to be able to generate the appropriate loss rates. Melbury Ltd submits that in most circumstances the Farm Portal will generate erroneous Baseline GMP Loss Rates.

8.218. Federated Farmers\textsuperscript{2158} submits that proposed Policy 8.4.28C should also specify that the Farm Portal must be able to generate a loss rate which is not erroneous.

8.219. DairyNZ\textsuperscript{2159} seeks that proposed Policy 8.4.28C is deleted on the basis that requiring reviews of the nitrogen loss number undermines the certainty provided by Policy 8.4.28B. The submitter notes that loss rates calculated using the method set out in Policy 8.4.28B would be subject to rigorous review through the consent process.

8.220. Fish & Game\textsuperscript{2160} states that for Policy 8.4.28C, the equivalent loss rate should only provide a “place holder” figure in the resource consent, without limiting the ability to immediately replace it with the intended Portal loss rate when it becomes available. This approach can simplify the process with much less time, cost and uncertainty for the individual consent holder and the consenting authority. It also reduces the risks to the environment that may occur with delays to updating revised resource consent loss rates.

\textit{Analysis and recommendation}

8.221. We note that proposed Policies 8.4.28B and 8.4.28C duplicate region-wide policies 4.38D and 4.38E. Given that Section 8 of the CLWRP should be read in conjunction with the region-wide policies and rules, we consider that Policies 8.4.28B and 8.4.28C are redundant and recommend they are deleted.

\textbf{Irrigation Schemes: Policy 8.4.29}

\textit{Introduction}

8.222. Policy 8.4.29 describes the resource consent requirements for the discharge of nutrients from irrigation schemes and principal water suppliers, as a means to achieve water quality limits. Such requirements include a description of the methods that will be used to implement GMP, how any nitrogen losses from properties in the NPA will be achieved and whether the

\textsuperscript{2156} PC7-433.37
\textsuperscript{2157} PC7-172.6 and PC7-172.7
\textsuperscript{2158} PC7-430.94
\textsuperscript{2159} PC7-357.22
\textsuperscript{2160} PC7-95.21
irrigation scheme or principal water supplier intends to manage the losses on an aggregated basis or on a property by property basis. The policy also describes how the nitrogen loss limit will be determined for any discharge permit granted to an irrigation scheme or principal water supplier.

**Submissions and analysis**

8.223. Proposed Policy 8.4.29 received 62 submissions, with 5 in support seeking that the policy is retained as notified and 11 seeking that it is deleted in its entirety. Ngāi Tūāhuriri Rūnanga support the staged reductions and seek that they are retained in Policy 8.4.29.

8.224. As One Incorporated seeks that the reductions in Table 8-9 are removed from PC7, including from Policy 8.4.29. As discussed elsewhere in this report, we recommend that the reductions in Table 8-9 are retained in Section 8 of the CLWRP, and therefore recommend rejecting the submission from As One Incorporated.

8.225. Forest & Bird submits that Policy 8.4.29 relies too heavily on GMP and grand-parenting, stating that robust compliance monitoring and enforcement is required to ensure limits are achieved. It seeks that Policy 8.4.29 is amended to avoid audited self-management and ensure schemes are held accountable for the nutrient discharges in their command areas. It also requests that the policy is amended to require much tougher reductions in the NPA.

8.226. The appropriateness of the staged reductions is addressed in a later section of this report and not repeated here. We note that providing an option for an audited self-management approach creates efficiencies for compliance and consent monitoring by placing the onus of demonstrating compliance on the consent holder. This approach is coupled with a robust audit process, which reduces the risk of non-compliance and increases accountability. We recommend rejecting the submission from Forest & Bird.

8.227. DairyNZ submits that it is inappropriate to require a consent applicant to detail the actions that will be undertaken to meet nitrogen loss reductions beyond the next five to ten years on the basis that GMPs will continue to evolve. It seeks amendments to the policy so that the information provided as part of a consent application only applies to the first stage of nitrogen loss reductions. As per the discussion on Policy 8.4.26, we recommend amendments to ensure it is clear that the FEPs are only required to demonstrate the actions that will be implemented to achieve the reductions over the duration of any consent granted, and that the submission from DairyNZ is accepted in part.

8.228. Waimakariri DC and several Community Boards submit that the term “Principal Water Supplier” should either be deleted from the policy, or the definition be amended to exclude “community and/or stock water scheme”. It states that, as currently drafted, nitrate reduction targets apply the Waimakariri DC community water supply and stock water race network schemes. It believes the provisions would require Waimakariri DC to seek resource consent for any discharge of contaminants entering water from the race network or community water supply. The submitter believes that the role of the reductions and subsequent resource consent should be held by an irrigation supplier and/or holder of a discharge permit.

---

2161 PC7-387.27 and PC7-387.52
2162 PC7-472.91 and PC7-472.92
2163 PC7-357.23
2164 PC7-3.25
2165 For example: Woodend-Sefton Community Board PC7-107.28
8.229. We note that it is not the intention of the provisions to capture the discharge of water from water races and recommend that the submission from Waimakariri DC is accepted in part so this is made clear in Policy 8.4.29.

**Recommendation**

8.230. That Policy 8.4.29 is amended as per Appendix E.

**Submissions on the nutrient management rules**

8.231. A large number of submissions were received on the nutrient management provisions more generally, including proposed Rules 8.5.21-8.5.32. While submitters have listed these rule numbers in their submissions, the relief sought is more general and is addressed earlier in this section of this report.

8.232. Egg Producer Federation NZ and Poultry Association NZ\(^{2166}\) submits that the nutrient management rules are confusing and could be more clearly drafted, particularly to distinguish between the intent of Rule 8.5.24 which permits farming activities subject to rule compliance and Rule 8.5.26 which requires consent for the use of land for a farming activity as a restricted discretionary activity.

8.233. HortNZ\(^{2167}\) supports the note that precedes Rule 8.5.21, with consequential amendments to the rule numbering, as per its submissions on the region-wide rules.

8.234. The following sections address the submissions that seek specific relief on the nutrient management rules.

**Rule 8.5.21**

**Introduction**

8.235. Proposed Rule 8.5.21 permits the use of land for a farming activity on a property 5 ha or less in area. The rule received 53 submissions, with six in support seeking it is retained as notified and 11 submissions seeking that the rule is deleted in its entirety.

**Submissions and analysis**

8.236. Forest & Bird\(^{2168}\) submits that properties less than 5 ha can still pollute and seeks that the rule is amended so that it includes conditions that align with the conditions set out in permitted activity Rule 8.5.24 for the use of land for a farming activity on a property greater than 5 ha in area. The submitter does not provide any further explanation of how these properties “pollute” in the context of their submission.

8.237. Several submitters\(^{2169}\) seek that the permitted land use area threshold is amended, with submitters generally seeking that the rule aligns with the equivalent region-wide Rule 5.43, which permits the use of land for farming activities on properties 10 ha or less. Egg Producer

---

\(^{2166}\) PC7-197.20

\(^{2167}\) PC7-356.56

\(^{2168}\) PC7-472.111

\(^{2169}\) For example: A Saunders (PC7-266.4)
Federation NZ and Poultry Industry Association NZ\textsuperscript{2170} submits that the proposed rule will have significant implications for poultry farm viability and operating costs within the sub-region as previously exempt farms between 5-10 ha will be required to meet these rules for nutrient management. Neil Kerr Ltd\textsuperscript{2171} seeks that the threshold is amended to 30 ha, as it states the compliance costs for a 5 ha block would be prohibitive and make farming more uneconomic.

8.238. We note that the 5 ha limit proposed under Rule 8.5.21 is a consequence of reducing the permitted area used for winter grazing. We note that the appropriateness of the 5 ha permitted activity threshold for winter grazing is analysed under Rule 8.5.24, where we recommend the rule is retained as notified. Consequently, we also recommend retaining the 5 ha property area threshold in Rule 8.5.21.

**Recommendation**

8.239. That Rule 8.5.21 is retained as notified.

**Rules 8.5.22 and 8.5.23**

**Introduction**

8.240. Proposed Rule 8.5.22 specifies that where any property or Farming Enterprise includes land within the NPA, the nitrogen loss reductions in Table 8-9 only apply to that part of the property within the NPA. The rule received 60 submissions, with nine in support seeking it is retained as notified and 12 submissions seeking that the rule is deleted in its entirety.

8.241. Proposed Rule 8.5.23 specifies that where any property or Farming Enterprise includes land within more than one Nitrate Priority sub-area, the required reduction in nitrogen loss for each NP sub-area is applied only to that part of the property that is within the NP sub-area. The rule received 53 submissions, with five in support seeking the rule is retained as notified and 12 seeking that it is deleted.

**Submissions and Analysis**

8.242. G Harrison\textsuperscript{2172} and R Hamilton\textsuperscript{2173} request that both Rules 8.5.22 and 8.5.23 are amended to apply the most restrictive values to land within part of a NP sub-area, or across NP sub-areas. We consider that applying the most restrictive limit to land that spans across a NP sub-area is unnecessary to achieve water quality limits and targets and would induce additional costs to comply with the restrictions. We recommend rejecting these submissions.

**Recommendation**

8.243. That Rule 8.5.22 and 8.5.23 are retained as notified.

\textsuperscript{2170} PC7-197.20
\textsuperscript{2171} PC7-335.2
\textsuperscript{2172} PC7-12.5 and PC7-12.6
\textsuperscript{2173} PC7-313.5 and PC7-313.6
Equivalent Pathway – Rules 8.5.23A to 8.5.23C

Introduction

8.244. Proposed Rules 8.5.23A to 8.5.23C provide an alternative consenting pathway for the use of land for a farming activity where the Farm Portal is unable to generate a Baseline GMP Loss Rate or Good Management Practice Loss Rate. While the “equivalent pathway” rules received approximately 50 submissions each, very few of these submissions appear to be ‘on’ the equivalent pathway rules. This part of the report only discusses the submissions that set out relief specific to the proposed rules, where the other more general submissions on the nutrient management provisions are discussed earlier in this section of the report.

Submissions and Analysis

8.245. There are 50 submissions on discretionary activity Rule 8.5.23A, with seven in support seeking the rule is retained, and eight submissions seeking that the proposed rule is deleted.

8.246. Non-complying Rule 8.5.23B received 50 submissions, with seven in support seeking it is retained as notified and nine seeking that the proposed rule is deleted in its entirety.

8.247. Prohibited activity Rule 8.5.23C received 49 submissions, with six in support seeking the rule is retained and nine seeking that it is deleted.

8.248. Melbury Farms Ltd\(^{2174}\) submits that the proposed equivalent pathway rules will make most farms in the Waimakariri Sub-region require resource consent, as the submitter considers that the nitrogen loss number generated from the Farm Portal will be erroneous for any farm that has used nitrogen fertiliser or irrigation. Further, Melbury Farm Ltd states that there is insufficient capacity within farm consultants and the Council to implement these requirements and imposes unnecessary costs and restrictions on many farms which would otherwise be permitted activities. The submitter subsequently seeks that clauses (a) and (c) of both Rules 8.5.23A and 8.5.23B are deleted.

8.249. Several submitters seek that the 5 ha threshold for consent is increased to 10 ha, to align with the region-wide rules. Submissions on the 5 ha permitted activity threshold are discussed earlier in this section of this report.

8.250. Several submitters\(^{2175}\) seek that proposed Rule 8.5.23C is deleted. Melbury Farms\(^{2176}\) states that farming activity should not become a prohibited activity as a consequence of the Farm Portal generating erroneous results.

8.251. Agri Magic Ltd\(^{2177}\) requests that Rule 8.5.23C is amended to clearly define the Equivalent Pathway and to make the limitations of the portal explicit. The submitter does not suggest how the rule could be amended to give effect to its submission. We note that the rule structure and activity classification duplicates the region-wide equivalent pathway Rules 5.42A, 5.42B and 5.42C, where the appropriateness of including an equivalent pathway was tested during PC5 of the CLWRP. It is likely that a number of properties in the Waimakariri sub-region will need to rely on the equivalent pathway provisions and therefore it is

\(^{2174}\) PC7-172.9

\(^{2175}\) For example: Aratika Trust (PC7-199.14)

\(^{2176}\) PC7-172.11

\(^{2177}\) PC7-131.1, PC7-131.4
appropriate that this pathway is made available to landowners in this sub-region. The region-wide rules contain conditions that apply to different NAZ and has a 10 hectare permitted activity threshold, both of which are not relevant to the Waimakariri sub-region. These key differences in the nutrient management framework necessitates a specific suite of similar rules in Section 8.

8.252. The appropriateness of the wording and requested amendments to these rules are discussed in Part 2, Section 3 of this report (OVERSEER®, the use of OVERSEER®, the Farm Portal and Good Management Practices) and is not repeated here. For the reasons set out in Part 2, Section 3, we do not recommend that the rules are amended.

**Recommendation**

8.253. That Rules 8.5.23A, 8.5.23B and 8.5.23C are retained as notified.

**Rule 8.5.24**

**Introduction**

8.254. Proposed Rule 8.5.24 permits the use of land for farming activities that are greater than 5 hectares, provided that the conditions set out in the rule are met. The rule includes thresholds for winter grazing and irrigation that differ depending on whether the property is located in the Ashley Estuary (Te Aka Aka) and Coastal Protection Zone.

**Submission and Analysis**

8.255. There are 68 submissions on proposed Rule 8.5.24, with eight in support seeking it is retained as notified and nine seeking that it is deleted.

8.256. Waimakariri DC (and by reference to their submission, various Community Boards) submit that Rules 8.5.24 and 8.5.25 capture an additional 1,052 properties that are greater than 5 ha and less than 10 ha within the Waimakariri District. They state that the compliance costs on enforcing these rules will not apply to the balance of the Canterbury Region and would not seem to justify the perceived environmental benefits. They state there does not seem to be any evidence in the Section 32 analysis that there would be any environmental gain in inserting this rule. Despite these concerns, the submitters only seek minor amendments to the rules to correct a typographical error.2178

8.257. We note that the Section 32 evaluation of the costs and benefits for the group of provisions that manage land uses and discharge of contaminants includes an assumption that approximately 50% of properties less than 10 ha are likely to be farming activities, which equates to approximately 500 additional properties either needing to prepare a Management Plan (as a permitted activity) or an audited FEP (if consent is required). Justification for the lower permitted activity threshold is set out in Section 5.8 of Kreleger and Etheridge (2019). Given the need to reduce nitrogen losses across the Waimakariri sub-region to achieve the freshwater objectives, and in particular to protect the Ashley Estuary/Te Aka Aka from eutrophication, we recommend retaining the 5 ha property area permitted activity limit. We do not agree that there is a typographical error in condition (4) as suggested by the submitter and recommend that the requested amendment is rejected.

2178 PC7-3.22
8.258. Silvacrest Farms Ltd\(^2\) opposes Rule 8.5.24 as it considers that limiting winter crops to 5% of the total enterprise area will inherently intensify cropping and soil damage. The submitter also states that a regulated reduced winter crop area will cause the need for more supplements to be made and fed in winter because less green feed is available. For some farming operations this is not a viable option and feeding those supplements can have a similar effect to that of winter crop. They consider that any nitrogen losses should be accounted for by OVERSEER\(^\text{®}\). We note that Rule 8.5.24 includes limits for winter grazing as a permitted activity, where a consenting pathway is available for those who have a greater area of winter grazing. We do not recommend adopting the submission from Silvacrest Farms Ltd.

8.259. A number of submitters\(^3\) seek that the permitted activity thresholds for winter grazing are amended to reflect the region-wide winter grazing thresholds (10 ha for any property less than 100 ha, 10% of a property between 100 and 1,000 ha, and 100 ha for any property greater than 1,000 ha). Carleton Dairies Ltd\(^4\) state that the proposed provisions are impractical and unfair as they restrict land use options for low nitrate emission farms. It states that the rule framework increases compliance costs for small already uneconomic size farms. We note that the rationale for additional restrictions on winter grazing as a permitted activity are set out in the technical assessments that support PC7. In particular, the modelling indicates that closer management of high risk farming activities (such as winter grazing) is warranted so that nutrient losses are further limited and water quality limits and targets in Tables 8-5 to 8-8 are met (consistent with the requirements set out in Objective A2 in the NPSFM). It is recommended these submissions are rejected.

8.260. Melbury Farms\(^5\) seeks that condition (3) of Rule 8.5.24 is amended to exclude the Ashley / Rakahuri FMU from this rule and apply the region wide thresholds. This submission is addressed under Policy 8.4.25. For the reasons set out in that part of this report, it is recommended that this submission point is rejected.

8.261. The Egg Producer Federation NZ and Poultry Industry Association NZ\(^6\) submit that the rules could be amended to distinguish between the intent of Rule 8.5.24 which permits farming activities subject to rule compliance and Rule 8.5.26 which requires consent for farming activities as a restricted discretionary activity. We consider that there are opportunities throughout PC7 to more simply state the provisions, however, in this instance, we consider that the requirements for a permitted activity are sufficiently clear.

**Recommendation**

8.262. That Rule 8.5.24 is retained as notified.

---

\(^2\) PC7-234.17
\(^3\) For example: A Saunders (PC7-266.9)
\(^4\) PC7-273.6
\(^5\) PC7-172.12
\(^6\) PC7-197.20
Rule 8.5.26

Submissions and Analysis

8.263. Proposed Rule 8.5.26 received 62 submissions, five of which seek that the rule is retained as notified. 14 submitters seek that the rule is deleted in its entirety. 2184

8.264. Several submitters2185 seek the deletion of all references to the NPA and the required reductions, and subsequently request that discretion matters (7) and (8) are deleted from Rule 8.5.26. As discussed later in this section of the report, we recommend retaining Table 8-9 and therefore recommend rejecting the requests to delete references to the NPA from Rule 8.5.26.

Recommendation

8.265. That Rule 8.5.26 is retained as notified.

Rule 8.5.27

Submissions and Analysis

8.266. There are 49 submissions on proposed Rule 8.5.27, with five in support seeking the rule is retained as notified. Twelve submitters seek that the rule is deleted.

8.267. As One Incorporated2186 submits that if the NPA is not removed from PC7, then Rule 8.5.27 needs to be amended to require that all farming enterprises also have to comply with the reductions required for the NPA. The submitter states that farming enterprises should be treated consistently with other farming activities. As One Incorporated also sees no reason that the properties within a farming enterprise be located within the same SWAZ and seeks that condition (3) is deleted. W J Winter & Sons2187 also requests that condition (3) is deleted but does not provide any reasons for seeking this change.

8.268. We note that the requirement for a farming enterprise to be located within the same SWAZ is consistent with the region wide farming enterprise rules. In the case of proposed Rule 8.5.27, the restrictions on farming enterprises recognise the need to ensure there is no increase in nitrogen loss across the sub-region, and the necessary reductions in nitrogen losses occur within the NPA. Deleting condition (3) could allow nitrogen losses to be managed across catchments which could result in an increase in nitrogen losses in some parts of the sub-region, at the expense of meeting the freshwater outcomes. It is recommended that condition (3) is retained as notified.

Recommendation

8.269. That Rule 8.5.27 is retained as notified.

---

2184 Submissions on Rule 8.5.25 are assessed under the “Ashley Estuary/Te Aka Aka Protection Zone” part of this report
2185 For example; As One Inc (PC7-387.38), A Hawkins (PC7-413.10 and PC7-413.11) and J Mehrtens (PC7-421.12 and PC7-421.13)
2186 PC7-387.39
2187 PC7-177.4
Rules 8.5.28 and 8.5.29

Submissions and analysis

8.270. Forty-seven submissions were received on Rule 8.5.28. Five support the rule, nine oppose, and 33 seek amendments to the rule.

8.271. Forty-six submissions were received on Rule 8.5.29. Four support the rule, 10 oppose, and 32 seek amendments to the rule.

8.272. Ravensdown\(^{2188}\) seek that Rules 8.5.28 and 8.5.29 are retained as notified. They consider the rules are appropriate as they reflect the region-wide provisions for farming land use activities under similar circumstances. In relation to Rule 8.5.29, Ravensdown acknowledge ongoing issues with the Farm Portal, and note that it is important for the alternative consent pathway to be provided to prevent some farming activities being prohibited due to Farm Portal errors.

8.273. Federated Farmers\(^{2189}\) supports Rules 8.5.28 and 8.5.29, but do not provide any specific reasoning.

8.274. Melbury Ltd\(^{2190}\) request, as consequential relief to their other submissions on the nutrient management framework, that the Ashley River/Rakahuri FMU is excluded from Rule 8.5.28. They consider that further restrictions within this FMU are not justified. The submitter also requests that Rule 8.5.29 is deleted, stating that non-compliance with “unjustified and erroneous” rules should not be a prohibited activity.

8.275. All other submissions on Rules 8.5.28 and 8.5.29 relate to those submitters who generally oppose, or otherwise submit on, the entirety of the proposed nutrient management provisions. The matters raised within these submission points are not relevant to these rules specifically. Rather, they address the wider nutrient management framework for the Waimakariri sub-region. These submission points are addressed elsewhere within this report.

8.276. In response to Melbury Ltd’s request to exclude the Ashley River/Rakahuri FMU from Rule 8.5.28, we note that this submission is addressed under Policy 8.4.25. For the reasons set out in that part of this report, it is recommended that this submission point is rejected.

8.277. With reference to Part 2, Section 5 of this report, we do not recommend any changes to the proposed nutrient management provisions of PC7 in relation to OVERSEER\(^\circ\), GMP and the Farm Portal noting that most of these provisions follow on from, and are consistent with, the operative nutrient management framework within the CLWRP. Policy 8.4.28B provides for equivalent methods to be used where the Farm Portal is unable to generate a GMP loss rate or where the number is determined to be erroneous. We do not consider that there is justification for the deletion of Rule 8.5.29 based on the view that the nutrient management rules for the Waimakariri sub-region are “unjustified and erroneous”. Therefore, we recommend that the relief sought by Melbury Ltd be rejected.

Recommendation

8.278. That Rules 8.5.28 and 8.5.29 are retained as notified.

\(^{2188}\) PC7-114.91 and PC7-114.92
\(^{2189}\) PC7-430.132 and PC7-430.133
\(^{2190}\) PC7-172.17 and PC7-172.18
Rule 8.5.30 and 8.5.30A – Irrigation Schemes

Submissions an analysis

8.279. Rule 8.5.30 received 17 submissions, with six in support seeking that the rule is retained as notified. The support for this rule from some submitters is subject to amendments sought to Table 8-9. WIL supports the references to non-notification in Rule 8.5.30.

8.280. There are five submissions on Rule 8.5.30A, with three submitters seeking that the rule is retained as notified.

8.281. Forest & Bird\textsuperscript{2191} seeks that the rules are amended so that Table 8-9 gives effect to Te Mana o te Wai.

8.282. Waimakariri DC\textsuperscript{2192} (and by reference to their submission, various Community Boards) submit that the term “Principal Water Supplier” should be removed from the rule (and associated Policy 8.4.29). They state that as currently drafted, the nitrate reduction targets will apply to the Waimakariri DC’s community water supply and stock water race network schemes, and that Waimakariri DC will be required to seek resource consent for any discharge of nutrients onto land that would result in a contaminant entering water from the network or community water supply.

8.283. As discussed previously in this report there are several submitters that seek amendments to Table 8-9 or the deletion of Table 8-9 in its entirety, where they also seek consequential amendments to the rules to remove reference to Table 8-9\textsuperscript{2193}. In this case, removing reference to the NPA from Rule 8.5.30 results in the deletion of condition (1) of the rule. Subsequent to its request to delete condition (1) of Rule 8.5.30, Ravensdown submits that Rule 8.5.30A is no longer necessary and should be deleted. WIL seeks that reference to Table 8-9 is replaced with reference to Table 8-9A, which is a new table proposed by WIL that sets out the nitrogen loss reductions for the WIL irrigation scheme.

8.284. The appropriateness of the nitrogen loss reductions in Table 8-9 are discussed later in this report, where we recommend that Table 8-9 is retained, and as such, we recommend rejecting submissions that seek the reference to Table 8-9 is deleted from Rule 8.5.30. In a later section of this report we also recommend rejecting the inclusion of Table 8-9A as requested by WIL, and subsequently, recommend rejecting its request to include reference to this table into Rule 8.5.30.

Recommendation

8.285. That Rule 8.5.30 is retained as notified.

\textsuperscript{2191} PC7-472.112 and PC7-472.113
\textsuperscript{2192} PC7-3.23
\textsuperscript{2193} Ravensdown (PC7-114.99) As One Inc (PC7-387.4), A Hawkins (PC7-413.14) and J Mehrtens (PC7-421.14)
Rule 8.5.31 and Rule 8.5.32 – Incidental Nutrient Discharges

Submissions and analysis

8.286. Rule 8.5.31 permits the discharge of nutrients where a contaminant may enter water that would otherwise contravene s15(1) of the RMA, provided the land use activity associated with the discharge is authorised under the rules in Section 8 of the CLWRP.

8.287. There are seven submissions on Rule 8.5.31, with five in support seeking that the rule is retained as notified. There are five submissions on Rule 8.5.32, with three submissions in support. D A Rankin\(^{2194}\) opposes the proposed Rules 8.5.31 and 8.5.32 but does not identify amendments sought.

8.288. Forest & Bird\(^{2195}\) seeks that proposed Rules 8.5.31 and 8.5.32 are amended to be non-complying or prohibited activities, stating that incidental polluting activities need to be strictly controlled.

8.289. We note that the incidental discharge rules duplicate the region wide rules in Section 5 of the CLWRP. In order for an incidental discharge to be a permitted activity, the land use activity associated with the discharge must be authorised. Where a discharge does not meet this condition, it is classified as a non-complying activity. In response to Forest & Bird’s submission, we consider it is unnecessary to require consent for an activity that is already authorised under other rules. Similarly, we consider that a non-complying activity status is appropriate for a discharge that is not authorised under the existing rules, as granting any consent application ensures the activity is not contrary to the objectives and policies of the plan or the effects of the activity are minor. We do not recommend amending the activity status for these rules.

Recommendation

8.290. That Rules 8.5.31 and 8.5.32 are retained as notified.

Table 8-9: Nitrate Priority Area Staged Reductions in Nitrogen Loss for Farming Activities, Farming Enterprises and Irrigation Schemes.

Submissions and analysis on the targets and reduction stages

8.291. Proposed Table 8-9 received 142 submissions, with 12 submissions in support seeking that the table is retained as notified. Nineteen submitters seek that Table 8-9 is deleted in its entirety. A large number of submitters seek that the staged reductions are removed from Table 8-9 beyond either 2030 or 2040\(^{2196}\). Reasons for removing the staged reductions beyond these dates include concerns that the reductions are unachievable, severe economic and social costs of the reductions and concerns about the uncertainty in the modelling that supports PC7. Many submitters have raised similar concerns about PC7 more generally and are addressed in an earlier in this section of the report.

\(^{2194}\) PC7-220.35  
\(^{2195}\) PC7-472.114  
\(^{2196}\) For example, C & S McAllister (PC7-255.5) and R F C Winter (PC7-350.2)
8.292. In addition to removing the nitrogen loss reductions beyond 2030, Melbury Ltd\textsuperscript{2197} states that the nitrogen loss reduction targets in proposed Table 8-9 are based on the ‘erroneous Baseline GMP’ and seeks that the reference to Baseline GMP is removed from the calculation of loss reduction targets.

8.293. Eyrewell Dairy Ltd\textsuperscript{2198} seeks that Table 8-9 is amended to allow properties with N leaching rates lower than GMP at the beginning of the period to only need to reduce their leaching rates by 2030 as if properties started the period with leaching rates at GMP. We note that proposed Policy 8.4.27 provides for this scenario and consider that amendments to Table 8-9 are unnecessary.

8.294. K Hoskin\textsuperscript{2199} submits that the staged reduction timeframes in Table 8-9 are unacceptably generous to polluters and the targeted reductions need to be much more ambitious. The submitter requests that the target dates in the columns of Table 8-9 are amended to 2-year increments instead of 10-year increments. V Southworth\textsuperscript{2200} raises a number of concerns about the nitrate concentration limits and targets that the staged reductions are seeking to achieve, and requests that the Council review the decisions that have led to the formation of Table 8-9. We acknowledge the uncertainties associated with modelling, however consider that there is sufficient information available to take immediate action to reduce nitrogen losses. The risks associated with delaying action (i.e. the methods set in PC7) to review the models and decisions means that there are additional delays in improving water quality. We also note that achieving the full suite of proposed reductions will require significant changes and investment from the landowners within the NPA. The landowners will need time to make the necessary adjustments to their farm practices and in some cases, on-farm capital investments. Staged reductions in 2-year increments is unlikely to provide the necessary time for this change. We recommend rejecting these submissions.

8.295. Four Hooves Ltd\textsuperscript{2201} opposes the staged reductions for sub-area E. The submission states that its nitrogen loss is currently below its baseline and describes the good management measures undertaken on its farming property. The submitter will continue to implement good practices as technology allows it, but states that the implication of the long-term reductions on its farm, family and community will be significant. We note that Policy 8.4.27 allows for a delay in the staged reductions in circumstances where landowners have already implemented farm practices that are better than “GMP”. We have not been made aware of any other circumstances where it is appropriate to remove or delay the reduction in nitrate nitrogen discharges while still achieving the water quality limits and targets proposed for the Waimakariri sub-region. Consequently, we recommend rejecting this submission.

8.296. J Grigg\textsuperscript{2202} requests that the unrealistic targets in Table 8-9 are deleted and replaced with realistic and scientifically based ones. It is unclear from the submission if the proposed staged reductions are considered too onerous or too lenient, as the submitter does not specify any alternative targets in their submission.

8.297. Agri Magic Ltd\textsuperscript{2203} submits that reduction proportions should be effects based, and not input constrained (i.e. based on land use). It states that the current framework would result in
pervasive outcomes regarding land valuation and farmers ability to respond to international markets and national environmental policies.

8.298. We note that an effects-based approach is not appropriate given there is a lag between the loss of nitrogen below the root zone and this contaminant reaching a receptor (e.g. groundwater or surface waterbody). Managing inputs (via reductions in nitrate nitrogen losses) is considered to be the most appropriate method to ensure the water quality limits and targets are achieved.

8.299. Forest & Bird requests that Table 8-9 is amended to include dairy support with the required dairy reductions. Several submitters request that “dairy support” is defined in the plan, so that self-sufficient farms (i.e. dairy farms which also include a dairy support element) can accurately split activities, and the lesser reduction applies to the component of the farm that meets the definition of “dairy support”. S J Wylie submits that the reduction targets in Table 8-9 are weak and should apply evenly to all land uses.

8.300. The submissions on the timeframes for achieving the water quality limits and targets is addressed earlier in this part of the report, where a significant number of submitters sought shorter time periods for undertaking the actions necessary to achieve the limits and targets. As described later in this section of this report, we suggest that one option is for the total percentage reductions to be completed by 2050, rather than 2080, meaning that each 10-year stage will require a 30% reduction in nitrogen loss beyond the GMP Baseline for dairying, and 10% for all other farming activities (with the total number of 10-year stages reducing accordingly).

**Submissions on the starting point for reductions**

8.301. Several submitters are concerned that the note in Table 8-9 describing the starting point for nitrogen loss reductions is not certain or appropriate, particularly for irrigation schemes. WIL submits that it does not hold information on a Baseline GMP Loss Rate for the large number of properties within the WIL scheme area and states that, in many cases, it would be impossible to locate or estimate what the relevant Baseline GMP Loss Rate inputs should be. WIL submits that the starting point for reductions for WIL must by necessity be based on the baseline of its existing consent, with is files derived from the technical work undertaken by MRB. WIL submits that this methodology looks to assess nutrient losses on the basis of representative land type and other input data such as soils and climate. It proposes that these inputs be run through the Farm Portal to provide general consistency with what is otherwise envisaged by PC7.

8.302. It states that it is concerned to ensure the “starting point” in relation to the WIL Scheme is consistent with the MRB methodology has been used in the WIL Scheme load to date. This also includes ensuring that the reductions in Table 8-9 take into account the efforts that have already been undertaken by the WIL shareholders.

8.303. We have reviewed WIL’s discharge permit (CRC184861) and note that it is unclear how the consented requirements for GMP align with the CLWRP definition of GMP. While the consent references the industry agreed GMP booklet, it appears to be used as a guideline. We understand that the MRB files are “representative” of different farm systems and can be run

\[pc7-472.128\]

\[pc7-349.22\]
through the Farm Portal but they could be problematic and too “coarse” to show reductions effectively. We also note that the MRB files were originally developed for use in the Hinds catchment and may not be entirely appropriate for use in Waimakariri. Accordingly, we do not recommend amending the provisions to specifically allow for the use of MRB files.

8.304. Given the need to ensure that Table 8-9 reductions are distributed evenly over the NPA (within the sub-areas), and do not occur only in concentrated areas, the concept of an aggregated load for the WIL command area does not align with meeting the water quality limits and targets set in Tables 8-5 – 8-8. As such, we recommend rejecting the submission from WIL that the starting point should be from its existing consented load. We also recommend rejecting the request to insert a separate Table 8-9A for the WIL reductions.

8.305. Waimakariri NGF\(^{2207}\) wishes to ensure that there is certainty about the starting point from which the reductions in nitrogen losses for farming (in Table 8-9) are calculated. To ensure sound environmental management decisions on farms, it is critical that this ‘starting point’ does not change over time. It seeks that the word “generally” is deleted from Note 1 to Table 8-9 to improve the certainty of the starting point. We consider that “generally” is adequately certain in that the exemptions are qualified (by referencing the relevant policies). We acknowledge that Baseline GMP Loss Rate number may change over time, as a result of updates to the OVERSEER® model, and that the alternative to using the Baseline GMP Loss Rate calculated using the Farm Portal (i.e. fixed nitrogen loss rate numbers) would likely create greater uncertainty for plan users. We recommend rejecting this submission point.

8.306. Several submitters\(^{2208}\) seek that the provisions are amended to ensure that the provisions and reduction regime takes into account the significant reductions that may be required to reach Baseline GMP Loss Rate; or alternatively delete the references to ‘Baseline GMP Loss Rate’ and replace with ‘Good Management Practice’ or such other definition that accurately assigns a load to reflect current on farm good management practice. Others\(^{2209}\) consider that the provisions fail to take into account historic progressive strides farmers have taken to improve their environmental footprint and believe it is wrong to be penalised further when they have already invested a substantial amount towards nitrate reduction. We note that these submissions are addressed in Policy 8.4.27.

**Recommendation**

8.307. That Table 8-9 is retained as notified.

**Requests for new provisions**

8.308. A Hawkins\(^{2210}\), J F Mehrtens\(^{2211}\) and As One Inc\(^{2212}\) seek the insertion of a new policy, to replace the definitions for NPA and Nitrate Priority Sub-Area and Table 8-9:

*Maintain and improve water quality limits within the Waimakariri sub-region in order to achieve the outcomes in Tables 8.5, 8.6, 8.7 and 8.8 by requiring farming activities to comply with GMP.*

\(^{2207}\) PC7-425.36  
\(^{2208}\) Scottville Farm (437.22), Dairy Holdings Ltd (415.32)  
\(^{2209}\) For example; Silvacrest Farms (PC7 232-18)  
\(^{2210}\) PC7-413.13  
\(^{2211}\) PC7-421.8  
\(^{2212}\) PC7-387.28
8.309. The submitters seek that the reliance on modelling is removed from the planning framework and is replaced by a focus on achieved Baseline GMP Loss Rates and improving water quality data and knowledge through increased monitoring. It is considered that this approach will better achieve the outcomes in Tables 8.5 – 8.8 while providing for the social and economic well-being of the district. We note that meeting GMP is not sufficient to achieve the outcomes in Tables 8-5 – 8-8 and recommend rejecting this submission.

Definitions: Nitrate Priority Area and Nitrate Priority Sub-area

8.310. There are six submissions on the definition of “Nitrate Priority Area” and 23 submissions on the definition of “Nitrate Priority Sub-area”. The majority of the submissions seek that the definitions are deleted in their entirety on the basis that they are opposed to the wider nutrient management provisions that require the staged reduction of nitrate losses from these areas.

8.311. A large number of submitters\textsuperscript{2213} oppose the differentiation of the NPA into sub-areas and seek that the sub-areas be removed from the nutrient management provisions for the Waimakariri sub-region, so that there is only one zone with one set of reductions. Consequentially, they seek that the definition of “Nitrate Priority Sub-area” is deleted with one set of reductions. In support of its submission to delete the Nitrate Priority sub-areas, Larundel Dairy Partnership\textsuperscript{2214} submits that any reductions should be applied equally for the life of the plan, which will provide a much greater incentive for the wider community to address nutrient issues on a collective basis.

8.312. Ravensdown\textsuperscript{2215} seeks that the nitrate priority sub-areas are deleted in their entirety on the basis of additional technical work undertaken by DairyNZ, where it states that the modelling, upon which the sub-areas are based, may not reflect reality. It also notes that the sub-areas are not contained in the Waimakariri ZIPA, and as a matter of natural justice, the NPA should be consistent with the ZIPA.

8.313. A Hawkins\textsuperscript{2216} seeks that all references to the NPAs are deleted from the plan, and as an alternative, include a new definition for Dairy Support.

8.314. As discussed earlier in this report, we recommend retaining the NPA and Nitrate Priority Sub-areas in the plan, and recommend the definitions are retained as notified.

Planning Maps: Nitrate Priority Area and Nitrate Priority Sub-area\textsuperscript{2217}

Submissions

8.315. There are 12 submissions on the amendments to the Planning Maps that identify the NPA and 14 submissions on the amendments to the Planning Maps that identify the Nitrate Priority Sub-areas. The majority of submitters oppose the amendments to the planning maps to identify the NPA and the Nitrate Priority Sub-area.

\textsuperscript{2213} For example, Tallott, S & J (PC7-405.3)
\textsuperscript{2214} PC7-179.8
\textsuperscript{2215} PC7-114.106
\textsuperscript{2216} PC7-413.14
\textsuperscript{2217} This section of the report was prepared by Angela Fenemor, Amber Kreleger and Zeb Etheridge
8.316. CCC\textsuperscript{2218} seeks that the NPA map is amended so that it covers the full extent of the area that is the groundwater source for Christchurch aquifers and including the Waimakariri River recharge area.

8.317. Ravensdown\textsuperscript{2219} generally supports the identification and subsequent use of the NPA within the sub-region as a planning tool, however it states that the notified NPA seems to extend the area of the NPA that is included in the Waimakariri ZIPA. Ravensdown submits that it is aware of additional analysis commissioned by DairyNZ which suggests that the connection between the NPA and the Christchurch aquifer may be more nebulous than reported. It seeks that the NPA map is amended to reflect the area identified as the “Nitrate Priority Management Area_Rev 1” in Map 3.1 of the Waimakariri ZIPA.

8.318. Twelve submitters seek that the Nitrate Priority Sub-areas are deleted in their entirety, with WIL\textsuperscript{2220} submitting that the sub-areas serve no utility until at least 2050. They state that the presence of the Nitrate Priority Sub-areas may “reduce the ability of the community to achieve the catchment outcomes sought”. M J Spencer-Bower\textsuperscript{2221} raises concerns with the sub-area maps stating that it is divisive and has no consideration on how it affects farmers’ mental well-being and community cohesiveness. The submitter also notes that the sub-areas were not discussed during the ZC process.

8.319. As One Incorporated \textsuperscript{2222} seeks that the NPA is amended to align with catchment boundaries and not break the catchment into different sub catchments.

8.320. Ashley Gorge Farming Company\textsuperscript{2223} submits that the Nitrate Priority Sub-areas are difficult to interpret, inaccurate and not a true reflection of the facts. It seeks that the maps are corrected for their property to be adequately zoned.

**Analysis**

8.321. We acknowledge the impact that the identification of the sub-area has on the local community, with concerns being raised about well-being and community cohesiveness. The requirement to improve water quality, driven by the NPSFM, has resulted in a number of changes in the way farming and land use is managed across Canterbury where submitters on the CLWRP and subsequent plan changes have raised issues with equity, land value and community divide. In the case of the NPA, the reductions in nitrogen loss are proposed to be staged, over time, to lessen the impact on individuals and provide an opportunity to consider methods and actions required to achieve the nitrogen loss reductions.

8.322. The NPA boundary is based on a combination of groundwater and surface water catchment boundaries as discussed in Section 4.7 of Kreleger and Etheridge (2019). It would be inappropriate to align the sub areas with catchment boundaries, as catchment boundaries are defined by surface water sources and not groundwater recharge areas. Therefore, catchment boundaries do not reflect the proper groundwater source for a specific receptor and are not to be used to calculate the required reductions in nitrate losses to groundwater. In response to the submission from Ashley Gorge Farming Company, we note that the delineation of the

\textsuperscript{2218} PC7-337.113  
\textsuperscript{2219} PC7-114.160  
\textsuperscript{2220} PC7-349.19  
\textsuperscript{2221} PC7-473.7  
\textsuperscript{2222} PC7-387.7  
\textsuperscript{2223} PC7-195.28
NPA used a different method to that used for the identification of the NAZ. The method for delineating the Nitrate Priority Sub-areas is described in greater detail below.

8.323. In response to the submission from CCC, we note that the groundwater recharge zone for the Waimakariri River is not specifically included within the boundaries of the NPA, however approximately half of the Waimakariri River catchment located within the Waimakariri sub-region falls within the NPA (due to overlaps with the modelled recharge areas for other receptors that are included within the NPA boundaries). This means that the nitrate loss reductions proposed for the NPA will help to reduce nitrate concentrations in the Waimakariri River, and as such, we do not consider that the NPA needs to be extended to capture the full extent of the Waimakariri recharge zone. We also note that the extent of the NPA (and the associated nitrogen loss reductions within the NPA) provides for a nitrate concentration threshold of 3.8 mg/L in the Christchurch aquifers. As described earlier in this report, we recommend retaining methods in PC7 (including the extent of the NPA) to achieve this outcome.

8.324. Additional technical work was undertaken following the publication of the Waimakariri ZIPA, which resulted in an updated NPA, with the identification of five Nitrate Priority Sub-areas. We do not recommend adopting the earlier iteration of the NPA (as included in the ZIPA) as additional modelling resulted in a better understanding of the appropriate extent of the NPA. We acknowledge that the ZIPA did not identify the extent of the sub-areas, but did describe that different receptors require a different number of staged reductions to achieve the water quality limits or targets. Prior to the notification of PC7, additional modelling was undertaken to determine the number of staged reductions required for each of the receptors, which resulted in the delineation of the NPA into sub-areas. A summary of the sub-area delineation process is set out in Appendix D.1.

8.325. Taking into account the additional modelling undertaken to support the identification and delineation of the NPA and Nitrate Priority Sub-areas, and in the absence of evidence suggesting a more appropriate alternative, we recommend retaining the planning maps defining the NPA and Nitrate Priority Sub-areas, as notified.

**Ashley Estuary / Te Aka Aka Protection Zone**

*Introduction and Provisions*

8.326. This section discusses the provisions in Part C of PC7, which relate to the proposed Ashley Estuary (Te Aka Aka) and Coastal Protection Zone (‘Protection Zone’).

8.327. The Protection Zone encompasses foothill and lowland spring-fed surface water catchments flowing into Ashley Estuary (Te Aka Aka), and coastal waterbodies near the Waimakariri coast. This area has significant cultural, ecological, recreational and aesthetic values. The area is also of critical importance for mahinga kai, and as a whole the coastal waterbodies within the Protection Zone are wāhi taonga to iwi and an important recreational area.

8.328. The provisions seek to enhance the ecological and cultural values of surface water bodies in the Ashley Estuary (Te Aka Aka) and Coastal Protection Zone.

2224 Policies 8.4.28 and 8.4.28A, Rule 8.5.25
8.329. Policy 8.4.28 reads:

Avoid declines in the ecological health and cultural values of surface waterbodies in the Ashley Estuary (Te Aka Aka) and Coastal Protection Zone by requiring any property greater than 5 ha in area that includes or directly adjoins a river or coastal lake, and with winter grazing or irrigation on the property, to prepare, implement, and have audited a Farm Environment Plan.

8.330. Policy 8.4.28A reads:

For all activities within the Ashley Estuary (Te Aka Aka) and Coastal Protection Zone, discharges of contaminants to surface water or onto or into land in circumstances where contaminants may enter surface water are avoided as a first priority, and if this is not achievable, the best practicable option is used to minimise the loss or discharge of contaminants so as to achieve:

a. the water quality outcomes in Tables 8a and, 8b,

b. the limits in Table 8-5 and Table 8-6;

c. the standards in Schedule 5 for contaminants where a limit is not established in Section 8; and

d. any relevant water quality limits in a regional coastal plan for any receiving waterbody in the coastal environment.

8.331. Policy 8.4.28 is implemented through Rule 8.5.25 which requires any property that is greater than 5 ha with high risk land uses (i.e. any irrigation or winter grazing), and directly adjoins the bed of a river or coastal lake within the Protection Zone, to obtain resource consent and prepare and implement an audited FEP. If a FEP is not prepared, the activity is classified as non-complying under Rule 8.5.28. If any of the other conditions of Rule 8.5.25 are not met, the activity is a restricted discretionary activity in accordance with Rule 8.5.26. A nutrient budget (e.g. the use of OVERSEER®) is not required for properties that do not exceed the irrigation and winter grazing thresholds that apply to the wider sub-region area (in Rule 8.5.25).

8.332. Policy 8.4.28A is implemented through the resource consent decision making process for all activities which pose a high risk of contamination to sensitive waterbodies within the Protection Zone. Therefore, rather than being implemented through a specific rule, Policy 8.4.28A applies to any activity which meets this criterion and requires resource consent under the CLWRP.

8.333. It is noted that a large number of submissions2225 comment on the Nutrient Management policies broadly, i.e. by reference to all of Policies 8.4.25 to 8.4.29. However, the matters raised in these submissions do not appear to relate to the specific direction in Policies 8.4.28 and 8.4.28A, for example, they comment on use of the Farm Portal, GMP calculations, timeframes and reductions, which are not matters specified in Policies 8.4.28 and 8.4.28A. As such, the submissions points that have been attributed to these policies are not discussed in this section, as the substantive points made and decision sought do not appear to be relevant to these policies.

2225For example; Taggart Farms Partnership (PC7-178.4, PC7-178.5), G & W Mehrtens (PC7-202.4), N Thompson (PC7-216.14, PC7-216.15, PC7-216.34, PC7-216.35), Croft Farming Ltd (PC7-324.12, PC7-324.14, PC7-324.22, PC7-324.23, PC7-324.43, PC7-324.44, PC7-324.64, PC7-324.65, PC7-324.85, PC7-324.86, PC7-324.106, PC7-324.107), A Wilson (PC7-333.7, PC7-333.8, PC7-333.31, PC7-333.32), Parkdale Ltd (PC7-353.4)
8.334. The submissions relating to the Protection Zone have been grouped into and considered according to the following topics:

- Supporting submissions
- The identification of the Protection Zone
- Policy 8.4.28
- Policy 8.4.28A
- Rule 8.5.25

Supporting submissions

8.335. Nine submitters support Policy 8.4.28 and seek its retention. Three submitters also support Policy 8.4.28A and seek its retention. Reasons include:

- That managing potential effects on ecological health and cultural values associated with surface waterbodies in the Protection Zone through an audited FEP is appropriate;
- Greater consideration of the potential impacts of irrigated land use and winter cropping activities on land adjacent to water bodies through resource consent requirements is an important part of maintaining or enhancing habitat quality in this area;
- These areas provide an important habitat for a diverse range of species;
- Development of FEPs is supported as a method for identifying and managing environmental risks of activities within sensitive receiving environments; and
- The significance of this zone results in the need to avoid adverse effects on the ecological health and cultural values of the surface waterbodies in these areas.

8.336. Ngāi Tūāhuriri Rūnanga supports the inclusion of the Protection Zone and associated planning framework as being an appropriate and necessary acknowledgement of the importance and sensitivity of Te Aka Aka. It notes that the coastal area of the Waimakariri Zone is very highly valued by Ngāi Tūāhuriri Rūnanga and requires protection as a taonga to the hapū. Ngāi Tūāhuriri Rūnanga particularly supports the inclusion of Policy 8.4.28A directing that discharges of contaminants are eliminated. The submitter states that such discharges have a significant impact on water bodies, and discharges for activities such as earthworks have significant effects on sediment inflows into Te Aka Aka. As such, it seeks retention of both policies and Rule 8.5.24.

---

2226 For example; Ravensdown (PC7-114.70), DOC (PC7-160.40), Fish & Game (PC7-95.18), Federated Farmers (PC7-430.91)
2227 Ravensdown (PC7-114.71), DOC (PC7-160.41), Fish & Game (PC7-95.19)
2228 Ravensdown (PC7-114.70)
2229 DOC (PC7-160.40)
2230 Fish & Game (PC7-95.18)
2231 DairyNZ (PC7-357.19), Waimakariri NGF (PC7-425.11), Claxby Irrigation Ltd (PC7-433.6)
2232 Ravensdown (PC7-114.71)
2233 PC7-399.24, PC7-399.25
Submissions on the extent of the Protection Zone

Submissions and Analysis

8.337. DOC, CACB and Ngāi Tūāhuriri Rūnanga support the identification of the Protection Zone and seek that it is retained. The definition of the Protection Zone, which refers to the area identified within the Planning Maps, is supported by HortNZ.

8.338. Ashley Oaks Farm and T & H Molloy oppose the Protection Zone. They state that the zone was not a Zone Committee initiative and was introduced after the ZIPA was approved in December 2018, with limited time subsequently provided for affected landowners to understand the proposal and its implications. They also query whether the technical assessments were prepared with sufficient time to properly consider the issues within this area. They consider that the process undertaken has not allowed for any meaningful involvement from the ZC or affected communities. They consider that the lack of engagement will hinder forming of good relationships required with landowners to bring about required change.

8.339. While we acknowledge that the ZIPA does not contain any recommendations regarding the management of contaminants specifically in this area (in addition to the sub-region wide nutrient management framework), the provisions align with some of the more general recommendations in the ZIPA. The development of the provisions took place following discussions with Ngāi Tūāhuriri Rūnanga on the basis that these waterbodies have significant values for iwi but are degraded and likely contribute localised inputs of nitrogen and sediment runoff to the Ashley Estuary (Te Aka Aka) and coastal area. The Waimakariri ZC was informed of the proposed provisions in March 2019, where the ZC members supported the inclusion of additional FEP requirements for properties in the Ashley Estuary (Te Aka Aka) and Coastal Protection Zone.

8.340. The Ashley Estuary (Te Aka Aka) is a highly sensitive environment and is likely to become increasingly eutrophic and degraded without additional CLWRP controls on surrounding land use. We consider there is sufficient information available about contaminant discharges from high-risk farming activities to warrant additional management of these activities within the protection zone, in order to maintain water quality in the Ashley Estuary (Te Aka Aka) and the coastal waterbodies. We consider that deleting provisions on the basis that they were not developed in response to a ZIPA recommendation and “inadequate consultation” is inconsistent with the direction in the NPSFM and CRPS to maintain or improve water quality, we do not recommend deleting the provisions from PC7. We also note that the Schedule 1 requirements for consultation were fulfilled prior to the notification of PC7.

8.341. Ashley Oaks Farm and T & H Molloy also oppose the inclusion of hill-fed streams in the Protection Zone. They consider that these streams have been given little consideration in the technical report. In their submissions they provide commentary on the factors affecting the

---

2234 PC7-160.39
2235 PC7-138.8
2236 PC7-160.39
2237 PC7-356.73
2238 PC7-330.1
2239 PC7-257.1
2240 ZIPA Recommendations 1.11, 1.13, 1.20, 1.22
2241 PC7-330.2
2242 PC7-257.2
Fox’s Creek catchment that they believe should be considered in the context of protecting the estuary, but which are not managed by the proposed rules, nor considered in the technical report (for example, forestry activities, road maintenance and other related earthworks that may generate sediment run-off into waterbodies). We acknowledge that these activities can also contribute to the discharge of contaminants (mainly sediment) to waterbodies, but note that they are managed under existing region-wide rules in the CLWRP and national policy frameworks (e.g. NESPF). We are unaware that any amendments are necessary to the rules to further reduce the risk of sediment discharges into surface water bodies.

8.342. We note that by preparing and implementing an FEP, properties that have higher risk activities (such as winter grazing) will likely result in improved farm practices. These properties will improve their management of contaminant losses to surface waterbodies or maintain currently good farming practices. This is equally important in the sloped upper reaches of catchments as it is on the lower catchment/plains areas.

8.343. K Winter\textsuperscript{2243}, R Winter\textsuperscript{2244} and J Winter\textsuperscript{2245} oppose the creation of the Protection Zone, citing the uncertainty associated with it, including “the overall economic domino effect”.

8.344. We note that the submitters do not provide any additional information to support their submission points. In the absence of this information, particularly on how the provisions will lead to an “economic domino effect”, we recommend rejecting these submissions.

8.345. M Eder & G Morriss\textsuperscript{2246} seek acknowledgement “that the Coastal Zone is in many ways “a catchment” for all upstream challenges in regards to water flow, nutrient loss, sediment etc which if not adequately mitigated, lumber the Coastal Zone with impossible environmental obstacles to overcome.” It is not clear what, if any, specific changes are sought to PC7 to address this.

8.346. We acknowledge that broad-scale nitrogen loading in the Ashley River/Rakahuri catchment, and in the catchment of the spring fed streams and creeks, will still be a major driver of eutrophication and ecological degradation in the Ashley Estuary (Te Aka Aka). However, through the implementation of the Protection Zone provisions (where more properties will be required to prepare and implement FEP in accordance with Schedule 7) localised contaminant loadings will likely decrease, reducing macroalgae growth and fine sediment accumulation in localised areas near contaminant inputs from diffuse runoff. This may benefit the health of estuary communities in these localised areas and their use for mahi mahi gathering or other activities. Furthermore, the implementation of the proposed nutrient management framework in the wider sub-region will reduce the broader catchment nitrogen loads over time. Therefore, we consider the provisions are a necessary step to avoid further degradation of the significant waterbodies within the Protection Zone and recommend that the Protection Zone is retained as notified.

\textbf{Recommendation}

8.347. That the extent of the Protection Zone in the Planning Maps is retained as notified.

\textsuperscript{2243} PC7-307.3, PC7-307.4
\textsuperscript{2244} PC7-350.3, PC7-350.4
\textsuperscript{2245} PC7-302.3, PC7-302.4
\textsuperscript{2246} PC7-201.4
Policy 8.4.28

Submissions and analysis

8.348. Ashley Oaks Farm\textsuperscript{2247} supports the requirement for properties with 5 ha of irrigation to require land use consent within the Protection Zone, where they are located east of the Inland Scenic Highway and south of the estuary. This is because soils in this area can be heavier and more productive, leading to more intensive use under irrigation and potentially inundated at times, making this area a more likely source of nitrates.

8.349. A Saunders\textsuperscript{2248} opposes the requirement for farming activities within the Ashley Estuary to prepare and implement an audited FEP. They raise concerns about the cost, particularly to small block owners of implementing the policies, stating that 95% or more are good caretakers of farms.

8.350. Several options were assessed during the development of the Protection Zone provisions, as described in Etheridge & Arthur (2019). The option that was adopted for PC7 was considered to strike the most appropriate balance between the number of properties requiring a resource consent and FEP under the proposed provisions, and the potential stream lengths that would benefit from improved protection. The implementation of the provisions will protect an additional 100 kilometres of streams and localised areas within the estuary, while requiring a relatively modest increase in the number of resource consents (i.e. 50) relative to the operative region-wide provisions.

8.351. While we acknowledge the costs associated with obtaining a resource consent and receiving an initial FEP audit, the frequency of subsequent audits will be determined by the audit grade received. For example, if a property is awarded an ‘A Grade’ for their FEP, then another audit is not required for a further three years. Therefore, the potential costs associated with the provisions will be largely influenced by the actions and GMPs undertaken on-farm, as well as the size and complexity of the farm system. Overall, we consider the potential environmental benefits of the provisions outweigh the costs, and therefore recommend rejecting this submission.

8.352. Beef + Lamb\textsuperscript{2249} seeks that Policy 8.4.28 is deleted, as part of its wider submission on how it considers nutrients should be managed in the sub-region. Beef + Lamb’s proposed nutrient management framework for the Waimakariri sub-region is discussed elsewhere in this report. For this reason, the submission point on Policy 8.4.28 is addressed in relation to this wider submission and is not discussed further within this section.

8.353. Melbury Ltd\textsuperscript{2250} states that the spatial extent that the provision applies to is ambiguous and that it is not clear whether it applies to the whole of the Waimakariri sub-region or just the Ashley Estuary (Te Aka Aka) and Coastal Protection Zone. The submitter seeks that it is reworded so that it is clear that the requirement only applies to farms directly adjoining a river or coastal lake, where the farm is within the Ashley Estuary (Te Aka Aka) and Coastal Protection Zone.

\textsuperscript{2247} PC7-330.3
\textsuperscript{2248} PC7-330.3
\textsuperscript{2249} PC7-214.83
\textsuperscript{2250} PC7-172.5
8.354. We agree that the wording of Policy 8.4.28 is uncertain and could be interpreted as applying to properties outside of the Protection Zone. As such, we consider amendments are necessary to clarify the scope and intent of Policy 8.4.28. These specific amendments are detailed in Appendix E.

8.355. R Devlin\textsuperscript{2251} supports consent requirements for farming activities within the protection zone, but also raises concerns over stormwater discharge into Pegasus Lake and the Taranaki Stream. The submitter states that the frequency of contact water sport prohibitions on Lake Pegasus makes a mockery of environmental protection. As such, they suggest tightening of consent requirements for both farming and residential development in the Protection Zone.

8.356. We acknowledge the concerns raised by the submitter as it is important to ensure that all activities discharging contaminants within the Protection Zone are appropriately managed to protect the values of the zone. However, Policy 8.4.28A, which directs the management of other high-risk discharges of contaminants (including those from urban and industrial activities) within the Protection Zone, addresses the matters raised within their submission. Policy 8.4.28A is discussed in the section below.

**Recommendation**

8.357. Amend Policy 8.4.28 as per Appendix E.

**Policies 8.4.28A**

**Submissions and analysis**

8.358. Beef + Lamb\textsuperscript{2252} seeks that the word “avoid” is deleted from Policy 8.4.28A and replaced “with a more appropriate term which would reflect the intent of the Plan Change.” It notes that avoid is a strong word which may have the effect of prohibiting activities, which it does not consider to be the intent of PC7. No specific alternate wording suggestions are provided.

8.359. We note that while the term ‘avoid’ means ‘not allow’ or ‘prevent the occurrence of’, it must be considered against the outcomes that the avoidance is trying to achieve. In this case, Policy 8.4.28A seeks to avoid, as a first priority, the discharge of contaminants to surface water or onto or into land in circumstances where contaminants may enter surface water within the Protection Zone. However, the policy recognises it may not always be possible to avoid these discharges and directs that the best practicable option is to be used in these situations. Therefore, rather than prohibiting all discharges within the Protection Zone, Policy 8.4.28A provides an alternative pathway to ensure that any discharges with the potential to affect surface water resources within the Protection Zone are managed to achieve water quality outcomes. Given the above, we recommend rejecting the relief sought by the submitter.

8.360. Federated Farmers\textsuperscript{2253} seeks that Policy 8.4.28A is deleted as it considers that it is effectively covered in a more pragmatic way by Policy 8.4.28.

8.361. Policy 8.4.28 sets out additional requirements for farming land use activities (with winter grazing or irrigation) in the Protection Zone. However, Policy 8.4.28A applies to all activities in the Protection Zone to avoid the discharge of contaminants to surface water, including from

\textsuperscript{2251} PC7-56.20
\textsuperscript{2252} PC7-214.84
\textsuperscript{2253} PC7-430.92
urban and industrial activities. On this basis, we note that the policies direct the management of separate activities. Therefore, we recommend rejecting the submission from Federated Farmers.

8.362. Todd Property Pegasus Town Ltd is concerned that the requirement for discharges of contaminants to surface water to be avoided as a first priority, or adopt the best practicable option, is not practicable in the context of Pegasus Lake. It states that it is working towards and adaptive management approach for Lake Pegasus and it is essential that Policy 8.4.28A does not inadvertently hamper the implementation of measures to improve water quality. It also considers that it is necessary to be realistic about the extent of uncertainty as to future water quality. The submitter seeks a separate policy that addresses Lake Pegasus, with the consequential removal of the reference to Table 8b. It further seeks that Policy 8.4.28A is amended to recognise the difficulties in managing contaminants, such as storm water and groundwater inflows, and the need for alternative interventions in Pegasus Lake. The new policy sought is:

For activities within the Ashley Estuary (Te Aka Aka) and Coastal Protection Zone, enable the trial and use of adaptive management techniques for informing possible future water quality parameters.

8.363. Waimakariri DC and four community boards seek that the words “or into” land are deleted from the policy. They consider that the policy is likely to negatively impact on the Woodend and Kaiapoi Network stormwater consents, as well as future stormwater discharges from Pegasus.

8.364. We note that the wording of Policy 8.4.28A reflects section 15(1)(b) of the RMA which reads:

No person may discharge any –

... 

(b) contaminant onto or into land in circumstances which may result in that contaminant (or any other contaminant emanating as a result of natural processes from that contaminant) entering water; or

....

8.365. The above wording is also reflected in several discharge rules within the CLWRP. Policy 8.4.28A provides additional direction for decision makers in relation to any discharges of contaminants with the potential to impact surface water within the Protection Zone. This includes discharges into land in circumstances where a contaminant may enter surface water. In relation to the submitters’ requested relief, we consider it would be inappropriate to exclude particular activities as this would not safeguard the values within the Protection Zone. Furthermore, as discussed above, where it is not possible to avoid the discharge of contaminants in these circumstances, Policy 8.4.28A requires the best practicable option to be implemented to minimise the loss of contaminants. The submitters would already have to consider these factors within their stormwater system design for any standard consenting process. Given the above, we recommend rejecting the relief requested by the submitters.
8.366. With reference to Part 2, Section 6 of this report, we recognise an opportunity to improve consistency in the drafting style of the provisions in PC7, and subsequently recommend a minor amendment to Policy 8.4.28A.

**Recommendation**

8.367. Amend Policy 8.4.28A as per Appendix E.

**Rule 8.5.25**

**Submissions and analysis**

8.368. Rule 8.5.25 received 56 submissions, with three in support seeking the proposed rule is retained as notified and 11 seeking it is deleted in its entirety. Similar submissions were made on Rules 8.5.24 through to Rule 8.5.29. These submission points have either been addressed in the “general nitrates” section of this report, or under Rule 8.5.24 and are not repeated for each rule.

8.369. Forest & Bird seeks that proposed Rule 8.5.25 is amended to replace the word "efficacy" with "The quality of, compliance with, and auditing of the Farm Environment Plan by an independent qualified person". We note that the compliance and audit requirements of FEPs are set out in Schedule 7 and the Environment Canterbury Certified Farm Environment Plan Auditor Manual, and therefore unnecessary to include as an additional matter of control. It is recommended that the submission from Forest & Bird is rejected.

**Recommendation**

8.370. That Rule 8.5.25 is retained as notified.

**Stock Exclusion**

**Introduction and Provisions**

8.371. This section discusses the provisions in Part C of PC7 (proposed Policies 8.4.30 and 8.4.31 and proposed Rules 8.5.33 and 8.5.34) that introduce additional requirements for the exclusion of stock from water bodies for the Waimakariri sub-region.

8.372. Plan Change 7 proposes to introduce two new policies (8.4.30 and 8.4.31) to Section 8 of the CLWRP, that would apply in addition the existing region-wide policies (4.31 and 4.32). They read:

**Livestock Exclusion from Waterbodies**

*Note: Policies 8.4.30 and 8.4.31 apply in addition to regional policies 4.31 and 4.32 (Livestock Exclusion from Water Bodies)*

8.4.30 Within the Waimakariri sub-region, the region-wide provisions on livestock exclusion also apply to:

a. permanently or intermittently flowing springs (waipuna); and
b. open drains and other artificial watercourses with surface water in them that discharge into a lake, river or wetland.

8.4.31 Protect Ngāi Tūāhuriri values associated with springs (waipuna), rivers and lakes, and avoid discharges of sediment and contaminants to water bodies, and the degradation of aquatic ecosystems by:

a. implementing, within the Waimakariri sub-region, the region-wide provisions for stock exclusion; and

b. excluding, within the Ashley-Waimakariri Plains Area, all farmed cattle, deer and pigs from the bed (including the banks) of any lake, river, permanently or intermittently flowing spring, or any open drain or other artificial watercourse that contains surface water and which discharges into a river or lake.

8.373. Policy 8.4.30 is implemented through proposed Rule 8.5.33, which extends the application of the region-wide stock exclusion rules (5.68A, 5.68B, 5.68, 5.69, 5.70 and 5.71) to also apply to springs, and artificial watercourses that discharge into a lake, river or wetland. However, the rule does not apply to sub-surface drains or artificial watercourses that do not have surface water within them.

8.374. The region-wide stock exclusion rules relate to the use and disturbance of the bed (including the banks) of a lake, river or a wetland by stock and any associated discharge to water, and:

a. Only permit this use and disturbance where it is for stock crossing, and in certain limited circumstances (Rule 5.68);

b. Where the use and disturbance relate to intensively farmed stock, and to the bed of a lake or wetland, or a river that meets specified parameters, it is a non-complying activity (Rule 5.70);

c. The use and disturbance are prohibited where it relates to farmed cattle, deer or pigs, and to the bed of a lake or wetland, in specified areas, such as salmon spawning sites, and Community Drinking-water Protection Zones (Rule 5.71).

8.375. Policy 8.4.31 is to be implemented through proposed Rule 8.5.34, which extends the application of region-wide Rule 5.71 to the Ashley-Waimakariri Plains Area. Part B of PC7 includes a definition of Ashley-Waimakariri Plains Area and amendments to the Planning Map. No submissions were received on the definition or planning maps. This combination of provisions along with Rule 8.5.33, makes the use and disturbance of the bed (including the banks) of all the various waterbodies by any farmed cattle, farmed deer or farmed pigs, and any associated discharge to water, a prohibited activity within this area. The practical effect of these rules is that stock must be excluded from these waterbodies, which may require permanent fencing or alternative methods.

8.376. For completeness, it is noted that Part A of PC7 also includes proposed amendments to Rule 5.71 that also increase the areas within which the prohibition applies. This section of the Section 42A Report does not consider or address any submissions made on Rule 5.71 more broadly.

8.377. Approximately 20 submissions were received on the stock exclusion provisions for the Waimakariri sub-region. These submissions have been grouped into and considered according to the following topics:

- Supporting submissions;
- Submission generally opposing the stock exclusion provisions;
• Submissions that particularly relate to the intermittently flowing springs;
• Submissions seeking that the provisions are further extended; and
• Submissions that raise any other matters.

**Supporting Submissions**

8.378. Several submitters\(^ {2257} \) support one or more of the provisions relating to stock exclusion within the Waimakariri sub-region. The reasons given for this support include that stock exclusion is a positive measure\(^ {2258} \); that the proposed provisions are consistent with the Waimakariri ZIPA recommendations\(^ {2259} \), the extension of provisions provides better protection against nutrient discharges from the broader range of potential loss areas\(^ {2260} \); because all water bodies on the plains and land below 350 m elevation should be stock free\(^ {2261} \); contamination in the receiving environment is the same whether stock have ventured into a man-made or natural watercourse, and the exclusion of stock from the wider range of watercourses reflects that\(^ {2262} \), and springs and artificial watercourses that drain into a river are likely to be either critical habitats that require protection or potentially critical source areas for contaminants entering freshwater if not protected from farmed stock access\(^ {2263} \).

8.379. Ravensdown\(^ {2264} \) also supports the notified provisions, while recognising the implementation challenge they pose for farmers.

8.380. In relation to Rule 8.5.33, Federated Farmers\(^ {2265} \) supports the exclusion in the rule for subsurface drains or artificial water courses that do not have surface water in them.

**Opposition**

**Submissions**

8.381. There are a number of submissions received on the stock exclusions provisions in opposition to the provisions, either in part or in their entirety.

8.382. D & V Caseley\(^ {2266} \), while understanding the intent of the provisions, considers that their practical implementation has not been thought through. They state that it may not be practical to exclude livestock on properties within the foothills, it may be physically very difficult and require reconfiguration of paddocks, and the costs to comply with the requirements may be prohibitive for extensive, low-intensity cattle and deer farms. They consider that the prohibited activity rule would result in cattle and deer having to be removed from many foothill properties in order to achieve compliance. Overall, they consider that the provisions will not achieve the purpose, or various other provisions, of the RMA. To address

\(^{2257}\) Fish & Game (PC7-95.22, PC7-95.23, PC7-95.38), DOC (PC7-160.66, PC7-160.67, PC7-160.69, PC7-160.70), Styx Living Laboratory Trust (PC7-205.16), S Stewart (PC7-334.4), Forest & Bird (PC7-472.93, PC7-472.116, PC7-472.117)
\(^{2258}\) As One Incorporated (PC7-387.42)
\(^{2259}\) Ravensdown (PC7-114.74, PC7-114.75, PC7-114.97, PC7-114.98)
\(^{2260}\) Fish & Game (PC7-95.22, PC7-95.23, PC7-95.38)
\(^{2261}\) R Devlin (PC7-56.21)
\(^{2262}\) Kaiapoi-Tuahiwi Community Board (PC7-42.1), S. Stewart (PC7-334.4).
\(^{2263}\) DOC (PC7-160.66, PC7-160.67, PC7-160.69, PC7-160.70)
\(^{2264}\) PC7-114.74, PC7-114.75, PC7-114.97, PC7-114.98
\(^{2265}\) PC7-430.138
\(^{2266}\) PC7-376.1, PC7-376.2, PC7-376.3, PC7-376.4
these concerns, they seek that the stock exclusion provisions are deleted, with the existing regional provisions continuing to apply within the sub-region without further extension. They further seek that a new policy and associated rules provide an exemption for stock exclusion from ephemeral waterbodies, noting that in the draft Stock Exclusion Regulations, ephemeral streams are excluded.

8.383. A Saunders\textsuperscript{2267} considers that the requirement to fence drains in flood prone areas is not possible and fencing material in flood prone areas is an environmental disaster and a cost to those downstream. A Midgley\textsuperscript{2268} considers that the exclusions need refining and are impossible to implement in their present form.

8.384. A L Madeley\textsuperscript{2269} requests that stock to be excluded from a broader range of waterbodies. This relates to broad concerns that the submitter has regarding a number of aspects of PC7, as while accepting there are issues with nutrients, the submitter’s view is that with science and farm changes, the issues will improve. Overall, the submitter appears concerned that the changes (not limited to stock exclusion) have a negative economic effect on farming and that a longer timeframe is required to have a better understanding of the issues, and to allow for science to develop.

8.385. In relation to Rule 8.5.34, Federated Farmers\textsuperscript{2270} seeks that the rule is deleted, stating that Rule 5.71 was designed to target particular situations, not to provide a blanket prohibition.

**Analysis**

8.386. The purpose of excluding stock from waterbodies in the Waimakariri sub-region is to stop or significantly reduce stream bank erosion, pugging, sedimentation and reduce inputs of phosphorus and microbiological contaminants to waterbodies. Data on the current state of waterways in the Waimakariri sub-region indicates there is excessive sediment deposition in spring-fed streams which drives poor quality habitat and degraded aquatic communities. This sedimentation has been caused by poor drainage management and stock access.\textsuperscript{2271}

8.387. Submitters that oppose the stock exclusion provisions primarily raise concerns around the cost and practicalities of proposed provisions. Submitters do not specifically oppose the concept of excluding stock to protect water quality.

8.388. Extension of the region-wide CLWRP stock exclusion provisions in the Waimakariri sub-region is an important part of the solutions package to improve water quality and meet the freshwater outcomes for the sub-region.\textsuperscript{2272} Currently, part of the Waimakariri sub-region is managed under the WRRP, which does not have rules that permit stock access to waterbodies. Therefore, any disturbance of a riverbed requires resource consent under section 13 of the RMA as a discretionary activity. We recommend retaining provisions as notified as they provide a rule framework that appropriately uses the full spectrum of activity classification (from permitted to prohibited) as a method to manage the effects associated with stock access. Prohibiting access to waterbodies from more damaging stock is an essential method

\textsuperscript{2267} PC7-266.2  
\textsuperscript{2268} PC7-72.12  
\textsuperscript{2269} PC7-129.8  
\textsuperscript{2270} PC7-430.139  
\textsuperscript{2272} As described in Tables 8(a) and 8(b).
for improving water quality. Removing the proposed provisions and relying on the status quo (i.e. resource consent for all access) is not considered to be an efficient or effective means of achieving the objectives of the CLWRP or giving effect to the NPSFM (Objective A2).

8.389. The technical reports supporting PC7 assessed the extension of the region-wide stock exclusion requirements to a broader range of waterbodies than those listed in Rules 5.68A to 5.71. Arthur et al (2019) states that the provisions proposed for the Waimakariri sub-region will protect aquatic communities in small drainage tributaries, and springheads will be protected, reducing inputs of sediment from bank erosion, which will have long term benefits for indigenous vertebrates, fish and sports fish.\textsuperscript{2273}

8.390. The submitters are particularly concerned at the cost and practicalities of implementing the provisions and it appears may consider that the provisions require permanent fencing. As proposed, Policies 8.4.30 and 8.4.31 and Rule 8.5.33 do not specifically require a permanent fence is used to exclude stock. Temporary fencing or other alternative methods may be used.

8.391. Given the significance of the stock exclusion provisions to the overall solutions package to improve water quality and the alternative methods that may be used to exclude stock, we do not recommend any changes to the overall policy direction and rule framework.

\textit{Intermittently flowing watercourses}

\textit{Submissions}

8.392. Pineleigh Farm Ltd seeks that the stock exclusion provisions are amended so as not to apply to intermittently flowing watercourses. This is on the basis that the sub-region has an “undercurrent” which appears from time to time and it does not consider it is the intention of the plan to capture this undercurrent. The submitter similarly seeks deletion of the application of the stock exclusion rules to farm drains.

8.393. There are a number of submitters\textsuperscript{2274} who seek that changes are made to Policy 8.4.31(b) so that the exclusion only applies to “intermittently flowing springs” when water is flowing in the water course. Reasons include that it is impractical to fence every bit of flowing water\textsuperscript{2275}. Waimakariri DC\textsuperscript{2276} (and by reference to their submission, various Community Boards\textsuperscript{2277}) state that Policy 8.4.31 (b) requires further definition of “intermittently” and “contains surface water”. They consider that there does not seem to be any evidence that stock exclusion from artificial watercourses will result in less discharge of contaminants.

8.394. Federated Farmers\textsuperscript{2278} considers that the requirement to exclude stock from springs should be confined to springs that discharge into a lake, river or wetland. It considers that for springs where this not the case, the livestock access does not pose a risk. In its view, for intermittent springs that can appear following high rainfall, grazing these when dry is the most effective form of management. It also submits that the requirements for exclusion from open drains

\begin{footnotesize}
\begin{itemize}
\item Section 10.1 Arthur et al (2019)
\item Woodend-Sefton Community Board (PC7-107.1, PC7-107.2), W J Winter & Sons Ltd (PC7-177.6), United Seadown (PC7-180.2), W J & L E Bailey Farming Ltd (PC7-190.2).
\item W J & L E Bailey Farming Ltd (PC7-190.2).
\item PC7-3.13
\item Kaiapoi-Tuahiwi Community Board (PC7-42.16), Woodend-Sefton Community Board (PC7-107.16), Oxford-Ohoka Community Board (PC7-148.15), Rangiora-Ashley Community Board (PC7-149.16).
\item PC7-430.96, PC7-430.97, PC7-430.318
\end{itemize}
\end{footnotesize}
and other artificial watercourses should only apply to drains of watercourses with flowing water. As a result, they seek that Policies 8.4.30 and 8.4.31 are amended as follows:

a. **permanently or intermittently flowing springs** (waipuna) **that discharge into a lake, river or wetland**;

b. **open drains and other artificial watercourses with flowing surface water in them that discharge into a lake, river or wetland**.

c. **…permanently or intermittently flowing spring that discharges into a river or lake**, or any **open drain or other artificial watercourse that contains flowing surface water and which discharges into a river or lake**.

8.395. Synlait\textsuperscript{2279} supports the fencing of waterbodies, and the extension of the Waimakariri rules to also capture springs and artificial water courses with water in them that discharge into natural water bodies. However, it considers that it is important that the policies and rules are clear that permanent stock exclusion (e.g. permanent fencing) is not required from ephemeral water bodies, and therefore seeks that the rules allow for a non-permanent fence in situations where the water body is ephemeral.

8.396. Beef + Lamb\textsuperscript{2280} and NZDFA\textsuperscript{2281} consider that it is more appropriate to manage intermittently flowing springs as critical source areas rather than requiring stock to be excluded, similar to ephemeral waterways. They note that downland or hill country farms may have many springs which discharge into lakes, rivers or wetlands and that springs may also be intermittent and transient, as new springs may appear over time while others dry up. They consider that physically excluding beef cattle and deer may not be practical, nor cost-effective to achieve a good environmental outcome. They state that livestock exclusion from springs on non-intensive farms may not always be needed to achieve good water quality. NZDFA also caution that total exclusion of deer from waterbodies (by fencing off the waterbodies) can in turn influence deer behaviour that creates greater risk of contamination of waterbodies.

8.397. Similarly, G B Patterson\textsuperscript{2282} & V J Patterson\textsuperscript{2283} oppose Policy 8.4.30 and Rule 8.5.33 on the basis that hill country farms have many springs which discharge into rivers, wetlands or lakes and it is not practical or cost effective to exclude stock to achieve a good environmental outcomes given the low stocking rates in extensive hill country. They also note practical compliance issues arising from springs not consistently being located in one place.

8.398. Brook & Rupert Partnership\textsuperscript{2284} opposes Policy 8.4.30 in terms of the inclusion of intermittently flowing waterbodies including open drains and other artificial watercourses with surface water in them. It considers that intermittent flowing is too broad a term, and in the case of heavy and prolonged rain which results in a thin layer of moving surface water, considers it would be impossible to define where the waterbody starts or finishes and to exclude stock in this situation. The submitter also considers that in hill or downland, excluding stock from an actual defined ephemeral waterway is impractical and unlikely to achieve a positive effect in water quality, on the basis that whether the gullies are fenced or not will not change the amount of sediment first collected form a hillside that then channels into gully areas. The submitter considers that good mitigation practises such as sediment traps and constructed

\textsuperscript{2279} PC7-188.3
\textsuperscript{2280} PC7-214.87, PC7-214.88, PC7-214.98
\textsuperscript{2281} PC7-296.2, PC7-296.3
\textsuperscript{2282} PC7-75.1, PC7-75.2, PC7-75.3
\textsuperscript{2283} PC7-73.1, PC7-73.2
\textsuperscript{2284} PC7-150.1
wetlands/filtration zones at the bottom of the gully would be a better way to contain sediment from entering permanent waterways.

8.399. To address their concerns, these submitters all support the use of a Management Plan approach to identify specific areas of risk and the mitigation options to address the risks, rather than a blanket requirement to exclude stock, regardless of cost or likely environmental impact. Several of these submitters consider that such a Management Plan (to be provided on request) could be made a requirement for a permitted activity or as a controlled activity consent, instead of a discretionary activity under Rule 5.69. Some also note that this matter could be included within a FEP, where a consent is required for other reasons. The Management Plan would be used to test whether mitigation measures, (such as stocking rate, livestock species/classes, time of year and duration that stock are in the same paddock as the spring, downstream remediation, placement of shade, feed and water supplies,) would be effective in maintaining water quality.

8.400. Brook & Rupert Partnership also seeks that intermittently flowing is defined as ephemeral waterways or a specific body of water in a location flowing for a minimum length of time e.g. a stream in a gully that flows for 24 hours.

Analysis

8.401. The provisions require stock exclusion from intermittently flowing springs and open drains and other artificial watercourses with surface water in them that discharge to a lake, river or wetland. Submitters have questioned the need to exclude stock from intermittently flowing waterbodies, including springs. The extension of the provisions to capture this broader range of water bodies is critical to addressing sedimentation and _E. coli_ contributions to the sub-region’s waterbodies. While the ecological, cultural and social values of artificial waterbodies and open drains may be less than natural rivers and streams, these waterways contribute contaminant loads to natural downstream waterways. In order to meet the water quality outcomes, it is important for these measures to apply to any contributing surface water body.

8.402. In relation to the applicability of the provisions to springs, Part 2 Section 4 provides a recommendation to insert a definition that describes springs that have a connection to a surface waterbody. This definition would ensure that the stock exclusion provisions do not apply to seepages or springs where there is no downstream connection. The insertion of this definition would address the submissions from Federated Farmers, Woodend-Sefton Community Board, W J Winter & Sons and United Seadown.

8.403. In relation to the ephemeral waterbodies and the methodology for excluding stock, we consider the provisions are clear in that they do not specifically require permanent fencing, of waterbodies although this may be an effective option for some farmers. For ephemeral waterbodies and other situations described by submitters, alternative methods for stock exclusion could be more appropriate. Temporary fencing, planting or removing stock from paddocks with such waterbodies may be effective methods to comply with the stock exclusion requirements. Given the importance of excluding stock from all waterbodies contributing to rivers, streams and wetlands to improve water quality, we do not recommend any changes to the provisions in response to these submissions.

2285 V J Patterson (PC7-73.1, PC7-73.2), G B Patterson (PC7-75.1, PC7-75.2, PC7-75.3), Brook & Rupert Partnership (PC7-150.1), Beef + Lamb (PC7-214.87, PC7-214.88, PC7-214.98), NZDFA (PC7-296.2, PC7-296.3)

2286 PC7-150.1
8.404. With regard to the concerns that fencing could lead to further sedimentation on deer farms, Policy 4.34 requires farming activities that have nutrient losses to operate at good practice or better. The Deer Industry of New Zealand has prepared an Environmental Management Code of Practice which outlines practical guidance for minimising the environmental impacts from deer farming.\textsuperscript{2287} The code of practice describes a number of practices for addressing fence pacing which under the CLWRP should be implemented in addition to excluding deer from waterways. We therefore do not recommend any amendments to the stock exclusion provisions in response to the submission from NZDFA.

8.405. In relation to submitters’ concerns regarding the term ‘intermittent flowing’ we note that this phrase is only used in relation to springs. The definition proposed for spring addresses the submitters’ concerns.

8.406. Submitters have sought the use of a Management Plan approach to address the risks of stock access to water. We note that for most farming activities either a FEP in accordance with Schedule 7 or Management Plan in accordance with Schedule 7A is required. Both schedules require management practice to address erosion and sedimentation risks on-farm and discharges of contaminants into waterways. Schedules 7 and 7A refer back to the requirement to exclude stock in accordance with the regional council rules or any granted resource consent.

8.407. We do not recommend altering the Schedule 7 and 7A requirements to address the submitters’ concerns. The exclusion of stock from surface water bodies is critical to meeting the water quality outcomes which is demonstrated through the prohibited activity status for access to surface water bodies by farmed cattle, deer and pigs. Given the importance of these measures to the overall achievement of water quality outcomes, we do not consider it is appropriate to simply defer these requirements to management plans.

**Additional requirements**

**Submissions**

8.408. S Stewart\textsuperscript{2288} seeks that the stock exclusion provisions are extended to include horses, as horses that need to drink from a natural or artificial watercourse because they are not supplied water through a reticulated trough system, can pug the ground and create sediment run-off just like cattle. The submitter accepts that horses are probably not included because they are not present in herd numbers like cattle but considers that if the focus is on mitigating watercourse damage, then horses should be included in the list of stock excluded from all waterways.

8.409. WWHT\textsuperscript{2289} seeks that Lees Valley is included in the stock exclusion provisions given past damage to spring fed streams.

8.410. Forest & Bird,\textsuperscript{2290} while generally supporting the stock exclusion provisions, states that the implementation direction under 8.4.31(a) is uncertain and implies the additional exclusion in Policy 8.4.30 will not be implemented. As such it seeks that Policy 8.4.31(a) is “strengthened”. For completeness it is noted that the submitter also raises concerns about the definition of livestock. This is dealt with elsewhere in the Section 42A Report.


\textsuperscript{2288} PC7-334.5

\textsuperscript{2289} PC7-88.46, PC7-88.54

\textsuperscript{2290} PC7-472.93, PC7-472.116, PC7-472.117
8.411. G Reed\textsuperscript{2291} opposes Policy 8.4.31 and seeks that clause (b) is replaced with “\textit{exclude all farm cattle, deer and pigs from the bed of any lake, river, permanently or intermittently flowing springs or any open drains or other artificial water course while that body contains surface water which discharges into a river or lake}.” It is assumed from this that the submitter is seeking that the prohibited activity status is extended so that it applies to the entire sub-region, not the Ashley-Waimakariri Plains Area alone.

\textbf{Analysis}

8.412. In response to S Stewart’s request to extend the provisions to horses, we note that the region-wide stock exclusion rules do extend to include all stock, including horses. Any access to the bed and banks of a lake, river, wetland, spring and open drain or artificial watercourse containing water by horses is required to meet the permitted activity conditions in Rule 5.68 unless resource consent is obtained under Rule 5.69. It is unclear if the request from S Stewart is to prohibit the access of horses to all waterbodies in the Waimakariri Ashley Plains area.

8.413. The exclusion of Lees Valley from Rule 8.5.33 recognises that farming above 350 m above sea level is less intensive and poses a lower risk to water quality. Rule 8.5.33 does extend the region-wide rules to include springs and artificial watercourses in the Lees Valley but due to the less intensive nature of farming in this area, we do not consider it is necessary to prohibit farmed cattle, deer and pigs from waterbodies in this location.

8.414. We do not agree with the view of Forest & Bird in relation to Policy 8.4.31. Forest & Bird does not provide any further explanation as to how the policy should be strengthened and we consider the notified wording of the policy as a whole is sufficiently clear that the additional exclusion in Policy 8.4.30 will be implemented.

8.415. In response to the submission from G Reed, the submission is unclear as it appears as if the submitter seeks the prohibition of stock access to waterbodies is extended to cover the entire Waimakariri sub-region but goes on to seek an alternative rule to recognise the permanent fencing of flood channels is excessive and may result in blocking channels. The practicalities of complying with the provisions have already been discussed as have the stock exclusion requirements outside of the Ashley-Waimakariri Plains Area. We do not recommend any changes in response to this submission.

\textbf{Other Matters}

\textbf{Submissions and Analysis}

8.416. D & V Caseley\textsuperscript{2292} also raises questions as to what constitutes a wetland, noting that under the proposed Essential Freshwater Amendments, wetlands do not include wet pasture, or paddocks where water temporarily ponds after rain in places. It is noted that ‘wetland’ is a defined term in the CLWRP, and PC7 does not propose any amendments to the definition, which already specifically excludes “\textit{wet pasture or where water temporarily ponds after rain}”. We do not recommend any changes in response to this submission.

\textsuperscript{2291}PC7-374.3  
\textsuperscript{2292}PC7-376.1, PC7-376.2, PC7-376.3, PC7-376.4
8.417. Waimakariri DC\textsuperscript{2293} (and by reference to their submission, various Community Boards\textsuperscript{2294}) consider that terms such as “open drain” as used in Policies 8.4.30 and 8.4.31 “need to be standardised and defined, or removed”. The CLWRP includes a definition of drain which states: 

\textit{Includes any artificial watercourse that has been constructed for the purpose of land drainage of surface or subsurface water and can be a farm drainage channel, an open race or subsurface pipe, tile or mole drain, or culvert.}

8.418. While the definition does not specifically include “open drain”, we consider that this definition is sufficiently clear to understand policies 8.4.30 and 8.4.31.

\textbf{Recommendation}

8.419. That Policy 8.4.30 is deleted, Policy 8.4.31 is amended as per Appendix E.

8.420. That Rules 8.5.33 and 8.5.34 are retained as notified.

\textbf{Schedules 7 and 7A - Waimakariri specific requirements}

\textbf{Introduction}

8.421. This part of the Section 42A Report discusses submissions made on the proposed additional requirements within Schedules 7 and 7A for the Waimakariri sub-region.

8.422. Part C of PC7 amends Schedule 7 to introduce the following additional requirements for FEPs prepared within the Waimakariri sub-region:

\begin{enumerate}
    \item The information required under Part B 2(c) includes the location of any artificial watercourses
    \item \textbf{Management Area 5A: Nutrients} includes the following additional objectives and targets: 
        \begin{enumerate}
            \item \textbf{Objectives:} 
                \begin{enumerate}
                    \item Staged reductions in nitrogen loss for land within the Nitrate Priority Area to meet nitrate nitrogen limits for surface water, groundwater and drinking water sources in Section 8.
                \end{enumerate}
            \item \textbf{Targets:} 
                \begin{enumerate}
                    \item Where required, by 1 January 2030, further reductions in the nitrogen loss rate for properties within the Nitrate Priority Area as required by Table 8-9.
                    \item Within the Ashley Estuary (Te Aka Aka) and Coastal Protection Zone, any property greater than 5 ha in area that includes or directly adjoins a river or coastal lake, and with winter grazing or irrigation on the property, is to prepare, implement, and have audited a Farm Environment Plan in accordance with this Schedule. However, Management Area 5A: Nutrients, Objective 2, Target 1 does not apply to
                \end{enumerate}
        \end{enumerate}
\end{enumerate}

\footnotesize \textsuperscript{2293} PC7-3.5
\footnotesize \textsuperscript{2294} Kaiapoi-Tuahiwi Community Board (PC7-42.7), Woodend-Sefton Community Board ( PC7-107.7, PC7-107.8), Oxford-Ohoka Community Board (PC7-148.6, PC7-148.7), Rangiora-Ashley Community Board (PC7-149.7, PC7-149.8)
properties that comply with the irrigation and winter grazing thresholds in Rule 8.5.25.

8.423. Part C of PC7 also amends Schedule 7A to introduce the following additional requirements for Management Plans prepared within the Waimakariri sub-region:

1. The information required under 2(c) includes the location of any artificial watercourses.

Submissions

8.424. Six submissions were received on the additional requirements for the Waimakariri sub-region within Schedule 7.

8.425. Two submissions2295 were received on the Waimakariri specific amendments to Schedule 7A, both of which are in support seeking that the proposed amendments are retained. We therefore recommend retaining the proposed amendments to Schedule 7A as notified.

8.426. As discussed within Part 2, Section 5 of this report, a range of other submissions were received on Schedules 7 and 7A. Only submission points that specifically address the additional requirements for the Waimakariri sub-region are discussed within this section, and all other submissions on Schedule 7 and 7A are addressed within the relevant sections of this report.

Schedule 7

8.427. Fish & Game2296 and DairyNZ2297 support the additional requirements for the Waimakariri sub-region within Schedule 7 conditionally, subject to their individual requested relief for Table 8-9.

8.428. Three submitters2298 request the deletion of the additional requirements for Waimakariri. No specific reasoning for this relief is provided by the submitters.

8.429. Ravensdown2299 states that as the Waimakariri ZC made a number of recommendations aimed at reducing nitrates, the reflection of these additional approaches within FEPs developed in the sub-region is appropriate. However, they seek amendments to the Waimakariri specific requirements within Schedule 7 to reflect the submitter’s opposition to the continued staged reductions in Table 8-9. Ravensdown requests the following amendments to Objective 1 and Target 1 of clause 10 (Waimakariri) of Schedule 7 Part B:

Objectives:

1. Staged Reductions, staged over time, in nitrogen loss for land within the Nitrate Priority Area to meet nitrate nitrogen limits for surface water, groundwater and drinking water sources in Section 8.

---

2295 Ravensdown (PC7-114.26), Fish & Game (PC7-95.51)
2296 PC7-95.50
2297 PC7-357.44
2298 J F Mehrtens (PC7-421.15), A Hawkins (PC7-413.9), As One Inc (PC7-387.51)
2299 PC7-114.24
**Targets:**

1. Where required, by 1 January 2030 or later date in accordance with Policy 8.4.27, further reductions in the nitrogen loss rate for properties within the Nitrate Priority Area to achieve the nitrate nitrogen and total nitrogen targets specified in Tables 8-5, 8-6 and 8-8 and for nitrogen losses from dairy farming activities to be reduced by 15% and from all other farming activities by 5% as required by Table 8-9.

8.430. Ravensdown considers that this relief will ensure the focus is on achieving the freshwater outcomes being sought (i.e. the water quality targets) rather than the continued staged reductions outlined in Table 8-9.

8.431. We note that the proposed additional requirements for the Waimakariri sub-region within Schedule 7 are to ensure landowners comply with the proposed provisions within Section 8. For example, Policy 8.4.30 directs that the region-wide stock exclusion provisions also apply to open drains and other artificial watercourses with surface water in them that discharge into a lake, river or wetland within the Waimakariri sub-region. Therefore, requiring artificial watercourses to be identified within FEPs on properties within the sub-region is necessary for FEP auditors to assess whether farming activities are compliant with CLWRP rules or any consent granted (as per Management Area 5E, Target 1).

8.432. FEPs are also the main tool within the CLWRP for identifying the environmental risks and impacts of farming activities within the region, and avoiding, remedying or mitigating adverse effects from these operations. Compliance with land use consents (including nitrogen loss limits) for farming activities is largely driven through the FEP auditing process. Therefore, ensuring that FEPs prepared in accordance with Schedule 7 include the relevant nitrogen loss reductions required within Table 8-9 is necessary so that the nitrate nitrogen limits for the Waimakariri sub-region (as directed through Policies 8.4.25 and 8.4.26) and water quality outcomes are achieved. Given there is a significant lag time between the actions undertaken on the ground and a corresponding improvement in water quality, it is our view that the provisions appropriately focus on the actions (or methods) to achieve water quality outcomes. We do not agree that there is justification to delete, or otherwise weaken, the additional requirements for the Waimakariri sub-region. As discussed earlier in Part 5, Section 7 of this report, Table 8-9 is recommended to be retained, with suggested amendments to the timeframes for reductions. Given the above, we recommend rejecting the submission points seeking the deletion of the additional requirements for the Waimakariri sub-region, and those requesting amendments to Table 8-9.

8.433. In relation to Ravensdown’s requested amendments to Objective 1, we do not consider that this relief improves or clarifies the existing wording, nor does it provide any further direction for consent holders or FEP auditors. We therefore recommend that this submission point be rejected.

8.434. In response to the request from Ravensdown to include reference to Policy 8.4.27 within Target 1, we do not consider this relief is necessary. Policy 8.4.27 provides guidance for consent applications for farming land use activities within the NPA where the loss reductions required by Policy 8.4.26 are unable to be achieved by the dates set out in Table 8-9. These matters will be considered during the consenting process, with the timing of any required reductions specified within the consent conditions. Given that the nitrogen loss limit and
required reductions will be clear within the consent conditions, an FEP auditor will be aware of any differences to Table 8-9. The existing wording of “where required” within the target also signals that, in some situations, either reductions may not be required, or they may occur at different dates. We therefore recommend rejecting the relief sought by the submitter.

8.435. With reference to Part 1, Section 7 of this report, we note that the wording of Target 2 does not function as a measurable target for the FEP auditing process. A ‘Target’ is defined within Schedule 7 as a measurable, auditable statement that contributes to achievement of the Objective in each Management Area. However, Target 2 states that a nutrient budget (e.g. the use of OVERSEER®) is not required for properties within the Protection Zone that require resource consent but do not exceed the irrigation and winter grazing thresholds in Rule 8.5.25.

8.436. We consider that to ensure Target 2 is consistent with the definition of a target within Schedule 7, it would be more suitable to include it as an advisory note within Section 10. This approach is already evident within other sub-region sections of Schedule 7 such as the advice note for the additional FEP requirements within the Waitaki sub-region. Therefore, we recommend amendments to Section 10 to this effect. While there is no submission seeking such a change, we consider the structural improvement to Schedule 7 will have a minor effect on the requirements for an FEP in the Waimakariri sub-region, provided for under Schedule 1, clause 16 of the RMA.

Recommendation

8.437. Amend Section 10 of Schedule 7 as per Appendix E.

8.438. Retain the Additional Requirements for Waimakariri Sub-region within Schedule 7A as notified.
9. Wetlands and Riparian Margins

Introduction and Provisions

9.1. This section discusses the submissions made on provisions relating to wetlands and riparian margins in Part C of PC7. These include:

- Policy 8.4.32, which seeks to enable activities that maintain, restore or enhance mahinga kai, safe fish passage, indigenous vegetation, habitats of indigenous fauna and significant habitats of trout and salmon;
- Policy 8.4.33, which seeks to enable catchment restoration activities that focus on identified areas/activities;
- Policy 8.4.34, which directs that the high ecological values associated with rivers and wetlands in the Upper Ashley River/Rakahuri catchment are recognised and provided for, by reducing the permitted levels of winter grazing of cattle, and extending the region-wide stock exclusion provisions to include drains, artificial watercourses and springs (waipuna).

9.2. Rules 8.5.35 provides a permitted activity status for the disturbance of the bed and banks of a river and associated deposition of excavated material, where it is for the purpose of the maintaining or enhancing indigenous vegetation, habitats of indigenous fauna, or habitats of trout and salmon, subject to the disturbance meeting a number of specified conditions. Where these are not met, the activity is restricted discretionary under 8.5.36.

9.3. Rule 8.5.37 permits mai mai, structures for pedestrian use, eel or trout population monitoring and associated bed disturbance, subject to the activity meeting a number of specified conditions. Where these are not met, the activity is restricted discretionary under 8.5.38.

Policies

Submissions

9.4. Fish & Game, DOC, Croft Farming Ltd, DairyNZ, Ngāi Tuāhuriri Rūnanga, Federated Farmers and Forest & Bird support Policy 8.4.32. Reasons for support include that it is appropriate to enable the types of activities set out in the policy, which are activities that can positively affect ecosystem health. Although some submitters comment on this and other provisions in a broad sense, it does not appear that any of these broader submission points seek a specific change to this policy.

---

2300 PC7-95.24
2301 PC7-160.71
2302 PC7-324.16
2303 PC7-357.25
2304 PC7-399.36
2305 PC7-430.98
2306 PC7-472.94
2307 For example; Ngāi Tuāhuriri Rūnanga (PC7-399.49, PC7-399.60)
9.5. In terms of Policy 8.4.33, DOC\textsuperscript{2308}, Federated Farmers\textsuperscript{2309} and Forest & Bird\textsuperscript{2310} support enabling the types of activities set out in the policy.

9.6. DairyNZ\textsuperscript{2311} requests that “or any other targeted activities to improve water quality” is added to the end of the policy, stating that there may be other activities that have the potential to improve water quality, and a catch-all is required to capture and enable such activities. We agree that there may be other activities that can be undertaken to improve water quality and enabling these activities will assist with achieving the freshwater outcomes for the sub-region. We recommend accepting the submission from DairyNZ and note that amendments to the policy to provide for other targeted activities to improve water quality will require a consequential amendment to Rule 8.5.35.

9.7. Fish & Game\textsuperscript{2312} seeks that the policy is amended to add “targeted” to the reference to weed and pest control activities. It supports the intent of the policy’s focus on restoration and enhancement, but requests an additional level of caution added for the use of pest and weed control activities, noting that blanket spraying, for example, could remove all riparian vegetation and ground cover including weeds. We consider that the term “targeted” (in the context of weed and pest control activities) does not provide additional certainty for plan users, and we recommend rejecting this submission point. Even so, we are of the view that proposed Policy 8.4.33 repeats regionwide Policy 4.92A. As such we recommend that Policy 8.4.33 be deleted, where any differences between Policy 8.4.33 and Policy 4.92A is included in Policy 8.4.32.

9.8. Fish & Game\textsuperscript{2313} and DOC\textsuperscript{2314} support Policy 8.4.34. DOC considers that springs and artificial watercourses that drain into a river are likely to be either critical habitats that require protection or potentially critical source areas for contaminants entering freshwater, and therefore support expansion of the stock exclusion provisions to these areas. Fish & Game supports the additional measures in this policy to protect the high ecological values in the upper Ashley River/Rakahuri catchment. It considers that the policy will help to maintain and enhance water quality in the upper catchment.

9.9. Forest & Bird\textsuperscript{2315} considers that the wording of clause (a) of Policy 8.4.34 is uncertain as no threshold is stated. It seeks that over the life of the Plan, cattle winter grazing in areas with high ecological value is phased out.

9.10. Federated Farmers\textsuperscript{2316} seeks that Policy 8.4.34 is deleted, as it supports the existing winter grazing thresholds and is opposed to the blanket extension of stock exclusion to drains, stating that any extensions should be confined to surface drains which are flowing and discharge directly into a river or lake.

9.11. Beef + Lamb\textsuperscript{2317} opposes that part of the policy pertaining to livestock exclusion on the basis that they consider that livestock exclusion from springs on non-intensive farms may not
always be needed to achieve good water quality, and that management of springs is better dealt with through Management Plans or FEPs. We note that the winter grazing thresholds are also described in Policy 8.4.25 and the exclusion of stock is addressed in Policies 8.4.9, 8.30 and 8.4.31. Submissions of a similar nature are made on these policies and addressed in Part 5, Section 8 of this report.

9.12. We consider that having multiple policies that include similar direction (in particular, for the exclusion of stock and winter grazing thresholds for the Waimakariri sub-region) adds complexity to the plan provisions. There is an opportunity to rationalise plan provisions to improve readability and remove duplication of policies that describe the same actions (albeit to achieve different outcomes). We recommend amending (or deleting) Policy 8.4.34.

Rules

Submissions

9.13. Fish & Game supports both permitted activity rules, including their conditions.

9.14. Federated Farmers, while supporting the activities provided for within Rule 8.5.35, considers that additional sites, such as Community Drinking Water Zones, freshwater bathing sites and consented water abstraction sites should be protected from the activities covered by the rule, consistent with the approach taken to other rules in PC7 and the CLWRP more broadly. The submitter considers that if sufficient protection from adverse effects is not provided, the rule should be deleted. Subject to adequate protection being provided, Federated Farmers also support Rule 8.5.36. Further, it supports Rules 8.5.37 and 8.538 and seek their retention.

9.15. DOC seeks that both permitted activity rules are amended so that the works do not occur within 100 m of individual nests that are in use. It considers that the approach taken in these rules should not be different to the approach taken by other region-wide permitted activity rules for activities in the beds of rivers. We recommend accepting this submission in part and amending condition (1) so that is consistent with the conditions of similar permitted activities in the region-wide section of the CLWRP.

9.16. Waimakariri DC and various Community Boards consider that the proposed additions in Section 8 that are intended to protect indigenous freshwater species habitat may lead to unintended consequences. They cite Rule 8.5.35 as an example of where biodiversity improvements are prevented (as a permitted activity) in areas with Indigenous Freshwater Species Habitat, whereas, in their view “this is habitat where the plan should be enabling biodiversity improvements”. We note that permitting activities in these areas without further management or oversight, could have unintended adverse effects on the indigenous freshwater species habitats. We consider that it is appropriate that activities that fall within

---

2318 Page 2 of HortNZ submission
2319 PC7-95.39, PC7-95.41
2320 PC7-430.140
2321 PC7-430.141
2322 PC7-430.142, PC7-430.143
2323 PC7-160.45, PC7-160.46
2324 PC7-3.3
2325 Kaiapoi-Tuahiwi Community Board (PC7-42.6), Woodend-Sefton Community Board (PC7-107.6), Oxford-Ohoka Community Board (PC7-148.5), Rangiora-Ashley Community Board (PC7-149.6)
these areas require resource consent, so that all potential effects can be suitably mitigated, avoided or remedied.

9.17. Forest & Bird\textsuperscript{2326} seeks that reference in both permitted activity rules to “1 August” are amended to “28 February”. It also considers that a bird colony should be clarified as including a single pair. It considers that the expansion to the timeframe is necessary to “include early migrations and late departures and to allow for disruptions to breeding patterns as a result of uncertain weather related events or climate change.” The submitter\textsuperscript{2327} also seeks, in relation to Rule 8.5.37, that the matters of discretion are expanded to capture effects on wildlife and habitat outside the breeding season. We recommend amending condition (1) of the rule so that it is consistent with similar permitted activity conditions that restrict works in the beds of rivers near nesting birds. This proposed amendment should also address the concerns raised by Forest & Bird.

9.18. In addition to the relief requested for Rules 8.5.36 and 8.5.37, Forest & Bird requests that the definition of “bird colony” is amended to consider at risk and vulnerable native bird species that nest in single pairs, noting that two pairs or more are required to qualify as a bird colony under the proposed definition. The submitter lists the wrybill and banded dotterel as examples of species that would likely not be captured under the definition.

9.19. Given the recommended amendments to condition (1) of Rule 8.5.36 (and Rule 8.5.37 below) to align with existing region-wide restrictions on works near nesting birds, the we note that the definition of “bird colony” will be redundant as the term is not referred to elsewhere in the CLWRP. Therefore, should this relief be adopted by the Hearing Panel, we recommend the deletion of this definition.

9.20. Fish & Game\textsuperscript{2328} seeks that Rule 8.5.36 is amended so that the following is added as another matter of discretion:

\textit{Any actual or potential positive environmental effects, despite not meeting the condition or conditions of Rule 8.5.35.}

9.21. Given the purpose of the provisions is for the maintenance or enhancement of significant habitat, we consider it is appropriate to enable the consideration of the benefits of the activity. Therefore, we recommend adopting the relief sought by Fish & Game, subject to minor wording changes for consistency with other region-wide provisions, including extending the discretion to benefits of the proposal.

9.22. There are five submissions on proposed Rule 8.5.37, with two in support seeking that the rule is retained as notified. Similar to its submission on Rule 8.5.35, DOC\textsuperscript{2329} seeks that condition (4) of the rule is amended so that works do not occur within 100 m of individual nests. Similarly, Forest & Bird\textsuperscript{2330} also seeks this condition is amended to extend the period of time which the restrictions apply.

9.23. As recommended for Rule 8.5.35 (and consequentially for the definition of “bird colony”), we recommend that condition (4) of Rule 8.5.37 is amended so it is consistent with similar region-wide permitted activity conditions that restrict activities near nesting birds, and includes

\textsuperscript{2326} PC7-472.118, PC7-472.119
\textsuperscript{2327} PC7-472.120
\textsuperscript{2328} PC7-95.40
\textsuperscript{2329} PC7-160.46
\textsuperscript{2330} PC7-472.119
removing the period of time which the restrictions apply (so that they apply year-round). We recommend these submissions are accepted in part.

9.24. There are two submissions on Rule 8.5.38, both of which support the proposed rule as notified. We recommend retaining proposed Rule 8.5.38 as notified.

**Recommendation**

9.25. That Policy 8.4.32 is amended as per Appendix E.

9.26. That Policies 8.4.33 and 8.4.34 are deleted.

9.27. That Rules 8.5.35, 8.5.36 and 8.5.37 are amended as per Appendix E.

9.28. That Rule 8.5.38 is retained as notified.

9.29. That the definition of “bird colony” is deleted.
10. **Miscellaneous Provisions and Submissions**

10.1. There are several miscellaneous provisions in Part C of PC7 that do not specifically relate to any particular topic. Generally, there are only a few submissions on these provisions which are set out below.

10.2. This section also addresses general submissions that do not specifically relate to any other topic covered in this report.

**Flow Sensitive Catchments**

*Submissions and Analysis*

10.3. Table 8.8 – Flow Sensitive Catchments received one submission, which is in support, seeking that it is retained as notified. No further analysis has been undertaken and it is recommended that this submission is accepted.

**High Naturalness Waterbodies**

*Submissions and Analysis*

10.4. Table 8.9 – High Naturalness Water Bodies received one submission, which is in support seeking it is retained. No further analysis has been undertaken and it is recommended that this submission is accepted.

**Administrative Policies 8.4.35 to 8.4.38**

**Policy 8.4.35**

10.5. Proposed Policy 8.4.35 reads:

*Inform successive plan review cycles by reporting every 5 years on:*

- the current state of groundwater, surface water, estuarine water quality and ecosystem health, and any trends observed; and  
- any assessments of downstream impacts on the Waimakariri River and Christchurch deep aquifers; and  
- the results of any relevant investigations carried out in relation to the groundwater system; and  
- progress made towards freshwater outcomes and limits, including an assessment of the effectiveness of the framework, (including any non-statutory actions) in achieving those outcomes and limits.

**Submissions**

10.6. There are a total of 39 submissions on Policy 8.4.35, of which 31 are in support whilst eight oppose the policy in part. The support for this policy appears to be the result of submitters believing that plan monitoring and review is crucial for ensuring future land management frameworks are fit for purpose.
10.7. CCC\textsuperscript{2331} seeks that nutrient management for the Christchurch-West Melton sub-region is included within the plan through either amendment to the policy or provision of a new policy. This would provide for clarification of scope and timing for the Christchurch-West Melton sub-region in Section 9.

10.8. Two submitters request a more adaptive management approach to be adopted. Federated Farmers\textsuperscript{2332} seeks more flexibility with nitrogen discharge allowance if freshwater outcomes are being met. Alternatively, if freshwater outcomes are not being met, it seeks that this flexibility is extended to limit continued reductions. Fish & Game\textsuperscript{2333} also seeks Policy 8.4.35 is extended to require the recommendation of any adaptive management interventions that may be required where inadequate progress is being made due to severe climatic or land use change variables that significantly threaten achievement of targets, outcomes and limits.

10.9. Forest & Bird\textsuperscript{2334} is concerned that the five-year timeframe is too long due to what is at stake and seeks an amendment to replace this with annual reporting. Similarly, Fish & Game\textsuperscript{2335} also seeks that the policy is amended to require annual plan reviews and monitoring, allowing increased ability to guide any adaptive management interventions as described above. Conversely, Sparrow Family Trust and M Sparrow\textsuperscript{2336} support the five-yearly monitoring reports but believe the scope of the reports should be widened. They stress the importance of considering the impacts of previous land uses and local issues. The submitter therefore seeks an amendment to the policy to include an additional clause outlining that investigations should be undertaken to identify the effects of legacy and local issues impacting on ground and/or surface water nitrate nitrogen levels, and how these can be mitigated.

10.10. Parish Dairies/Todd Enterprises\textsuperscript{2337} are concerned that changing GMP once the plan gets to 2040 would fail to recognise and reward farmers for historical investment, technology and management initiatives. To address this, they submit that reductions up to 1 January 2030 should be monitored to make an informed decision regarding nitrogen loss reductions post 1 January 2030. Similarly, Torlesse Farm Ltd\textsuperscript{2338} submits that post 1 January 2030, decision making should be based on the assessment of on-farm nitrate diffusions because it believes this would create a more robust decision-making process. It believes it is unrealistic for farmers to reduce past 1 January 2030 based on a model of today. The submitter seeks amendments be made to allow for science and technology to advance in the next 10 years in order to have the most up-to-date information to base evidentially large financial decisions on.

10.11. Larundel Dairy Partnership\textsuperscript{2339} seeks that a clause is added to this policy stating that the results of investigations carried out on the impact on nitrate nitrogen levels in ground and surface water is reported.

\textsuperscript{2331}PC7-337.103
\textsuperscript{2332}PC7-430.101
\textsuperscript{2333}PC7-95.57
\textsuperscript{2334}PC7-472.97
\textsuperscript{2335}PC7-95.27
\textsuperscript{2336}PC7-133.2
\textsuperscript{2337}PC7-442.21
\textsuperscript{2338}PC7-363.25
\textsuperscript{2339}PC7-179.19
10.12. Generally, submitters seek Policy 8.4.35 is extended, made more specific or consider the five-year timeframe in the policy is too long and should be shortened.

10.13. We consider the intent of Policy 8.4.35 is to formalise the plan review process and adopt an integrated approach in terms of reporting on current state, assessment of effects on the wider environment and progress towards achieving freshwater outcomes, limits and targets, including the effectiveness of this framework. The policy reflects the requirements under Section 35 of the RMA for local authorities to gather information and monitor the effectiveness and efficiency of policies, rules or other methods in plans, but is of particular importance for the Waimakariri sub-region where it is anticipated there will be progress in technology, mitigations and monitoring that may significantly impact future plan reviews.

10.14. We do not support the relief sought by CCC to include nutrient management for the Christchurch-West Melton sub-region or clarification of the scope and timing for future plan changes to Section 9 of the CLWRP be included in Policy 8.4.35 or a new policy. In terms of scope, we consider it is unclear what level of detail is sought by the submitter as the scope of the future plan change will be dictated by the NPSFM (and other relevant national planning instruments at that time) and the collaborative process lead by the Christchurch-West Melton ZC. In terms of timing, we highlight that the Council’s most recent Annual Plan 2019/20 sets 2023 as a target date for the notification of a plan change to Section 9 of the CLWRP and consider including such information in a policy does not provide any additional guidance for plan users. On this basis, we recommend this submission point be rejected.

10.15. In response to submissions that seek annual reporting, as opposed to five yearly reporting, we note that Section 35(2A) of the RMA requires local authorities to compile and make publicly available a review of monitoring results at intervals of no longer than five-yearly, therefore the ability to require shorter monitoring and reporting frequencies in the policy is not prohibited by the RMA. Notwithstanding this, we note the purpose of monitoring and reporting as required by Policy 8.4.35 is to “inform successive plan review cycles” by taking into account the current state of the environment (at the time monitoring is occurring) and progress towards achieving freshwater limits, targets and outcomes. Given the significant resource required in the development of future plan review and plan change processes, we consider the relief sought by Forest & Bird and Fish & Game would provide little value (particularly given the lag time for the transport of nutrients) and consider the five-year timeframe to be appropriate.

10.16. Federated Farmers seeks the inclusion of an additional clause to Policy 8.4.35 which requires environmental monitoring to form the basis for the adaptive management of N discharges in the NPA. Similarly, Fish & Game seeks amendments to the Policy to enable the recommendation of adaptive management interventions where inadequate progress towards freshwater limits, targets and outcomes are being made. We consider the relief sought by the submitters is already provided in part by the policy as proposed. As previously stated, the intent of Policy 8.4.35 is to collect information and measure progress towards freshwater outcomes, limits and targets that will then be used to inform future plan review cycles. Ongoing monitoring and plan review cycles will assist in determining the need for further actions and possible changes and improvements in plans or actions to improve them. We consider the policy anticipates that there will be progress in technology, mitigations and modelling that may significantly impact future plan reviews and therefore the collection of

\[\text{2340 Contained in the Council’s Annual Plan 2019/20}\]
information and measurement of progress on a five yearly basis may result in the flexibility sought by the submitters. On this basis, we recommend the submission points made by Federated Farmers and Fish & Game be rejected.

10.17. In response to submissions made by Parish Dairies/Todd Enterprises and Torlesse Farm Ltd, we understand that the intention is that is that resource consents will not include more than one stage of reductions and that the next plan change (including any revised limits, percentage reductions or number of stages of reductions) will be operative prior to the replacement of resource consents. This is provided for by Policy 8.4.35, combined with the common consent expiry dates and durations as proposed by Policies 8.4.36 and 8.4.37. Based on this, we consider no further amendments to Policy 8.4.35 are required and recommend the submission points be rejected.

10.18. We do not see any benefit in including additional clauses to Policy 8.4.35 as sought by Sparrow Family Trust, M Sparrow and Larundel Dairy Partnership. We consider the current wording of the Policy is suitably broad and would already provide for the relief sought in part. If the specific relief sought by the submitters were adopted, we consider there is a potential risk that could result in the policy being too prescriptive and not capturing all causes and issues. On this basis, we recommend these submission points be rejected.

**Recommendation**

10.19. That Policy 8.4.35 is retained as notified.

**Policy 8.4.36 and 8.4.37**

10.20. This section of the Section 42A Report summarises submissions made on policies 8.4.36 and 8.4.37. An analysis of the submissions on each policy is undertaken in the section below.

10.21. Proposed Policy 8.4.36 reads:

*Provide for the regular review and adjustments in progress towards achieving the freshwater outcomes and limits for the Waimakariri subregion, by applying the following common expiry dates to resource consents:*

a. 1 July 2037 for resource consents granted for the use of land for a farming activity;
b. 1 July 2037 for resource consents granted for the discharge of nutrients by an irrigation scheme or principal water supplier;
c. 1 July 2037 for resource consents granted for the take and use of water;
d. 1 July 2047 for any resource consent that replaces an existing water permit that expires after 1 July 2030 and that is affected by the provisions of section 124-124C of the RMA.

10.22. Proposed Policy 8.4.37 reads:

*Apply the following durations to any resource consent granted after the relevant common expiry date in Policy 8.4.36:*

a. 10 years for resource consents for the use of land for a farming activity; and
b. 10 years for resource consents for the discharge of nutrients by an irrigation scheme or principal water supplier; and
c. 10 years for resource consents for take and use of water.
Submissions

10.23. There is a total of 30 submissions on Policy 8.4.36, of which three are in support, 10 oppose, and 17 oppose in part. There are 28 submissions on Policy 8.4.37, of which four are in support, 10 oppose, and 14 oppose in part.

10.24. Three submitters seek the removal of common expiry dates for resource consents under Policy 8.4.36. Federated Farmers\(^{2341}\) and Rangvet Limited\(^{2342}\) raise concerns over logistical issues such as limited Council capacity and whether there will be an increase in cost for farmers due to the law of supply and demand. Federated Farmers seeks amendments to the expiry dates of resource consents such that “there is capacity to manage consent renewals in a fair, consistent and cost-effective manner”. Rangvet Limited is also opposed to Policy 8.4.36 because it increases regulatory risk for farmers not being able to diversify expiry dates. Although Larundel Dairy Partnership\(^{2343}\) supports the principle of expiry dates, it seeks amendment to Policy 8.4.36 to include land use consents along with water permits to be granted with an expiry date of 1 July 2047. The submitter seeks this amendment because for any land use consent granted for 10 years issued before 2037, the current wording in the policy would require renewal twice within a 10-year period.

10.25. Fish & Game\(^{2344}\) and Forest & Bird\(^{2345}\) support common expiry dates for resource consents. However, they both believe the time frames should be brought forward to reflect the measures required to achieve desired freshwater outcomes in the zone. Forest & Bird seeks they are brought forward to 2027 for (a–c) and 2037 for (d), while Fish & Game seeks that the timeframes are it is brought forward to 2032 for clauses (a)–(c) and 2040 for clause (d). In contrast, HortNZ\(^{2346}\) seek that the expiry date for resource consents, as outlined in sub clauses (a), (b) and (c) are pushed back to 2042.

10.26. Several submitters\(^{2347}\) believe that Policies 8.4.36 and 8.4.37 should be amended to enable longer consent duration to be granted in appropriate circumstances based on the scale and complexity of the activity\(^{2348}\), and whether it is demonstrated that the relative outcomes, limits and targets will be achieved within the duration of the consent\(^{2349}\). To do so, Ballance\(^{2350}\) submits that the appropriateness of using FEP’s should be considered as opposed to planning tools. Many submitters also seek longer consent durations regardless of circumstances, scale and complexity. Short term durations of 10 years for resource consents is argued to impede long term planning by Beef + Lamb\(^{2351}\) and NZDFA\(^{2352}\). Beef + Lamb seeks amendment to the consent duration for sub clauses (a) and (c) of Policy 8.4.37, as it believes 10 years does not provide any certainty to allow for farm planning which disincentivises investing in more efficient farming infrastructure. NZDFA seeks amendment to sub clause (a) of Policy 8.4.37 for a 20-year duration to encourage investment and believes that this timeframe would be

\(^{2341}\) PC7-430.102
\(^{2342}\) PC7-96.17
\(^{2343}\) PC7-179.20
\(^{2344}\) PC7-95.28
\(^{2345}\) PC7-472.98
\(^{2346}\) PC7-356.54
\(^{2347}\) PC7-441.14, PC7-441.15, Rangvet Limited (PC7-96.17), W J Winter & Sons Ltd (PC7-177.7), Waimakariri NGF (PC7-425.17, PC7-425.18) and Claxby Irrigation Ltd (PC7-433.12)
\(^{2348}\) Waimakariri NGF (PC7-425.17) and Claxby Irrigation Ltd (PC7-433.12, PC7-433.13)
\(^{2349}\) Ballance (PC7-441.14)
\(^{2350}\) PC7-441.50, PC7-441.51
\(^{2351}\) PC7-214.90
\(^{2352}\) PC7-296.4
more realistic and provide sufficient time for monitoring and the RMA plan review process to be completed. HortNZ\textsuperscript{2353}, Rangvet Limited\textsuperscript{2354} and Carlton Dairies Ltd\textsuperscript{2355} seeks amendment to sub-clauses (a), (b) and (c) of Policy 8.4.37 to allow for up to a 15-year land use consent timeframe. Although Fish & Game\textsuperscript{2356} supports the 10-year durations, it seeks amendment to Policy 8.4.37 to allow for required interventions to respond to “severe” climatic or other land use change variables.

10.27. WIL\textsuperscript{2357} and S & J Tallott\textsuperscript{2358} consider there will be circumstances where longer consent durations may be appropriate and seek policies 8.4.36 and 8.4.37 are amended to include the exceptions listed in Section 4 of the CLWRP for large scale infrastructure.

10.28. There are five submitters\textsuperscript{2359} who seek that Territorial Authorities and community water suppliers be exempt from Policies 8.4.36 and 8.4.37 given the long planning timeframes and high investment required for projects such as provision of the stock water race network and community water supplies. They request a resource consent duration of no less than 35 years for Territorial Authorities for consents granted for the discharge of nutrients, or the take and use of water.

**Analysis**

10.29. We note that the intent of Policies 8.4.36 and 8.4.37 is to enable regular review and adjustments to resource consents to ensure progress towards achieving freshwater outcomes, limits and targets is made. We consider policy guidance on consent expiry and duration is useful, particularly where it is anticipated there will be progress in technology, mitigations and monitoring that could significantly impact freshwater outcomes and limits in future plan reviews, as is the case in the Waimakariri sub-region. Therefore, aligning resource consent expiry dates and durations with anticipated dates when future plan reviews are likely to be made operative will ensure progress towards the attainment of freshwater outcomes, limits and targets is ongoing. Accordingly, we do not support submissions that seek removal or the extension of these dates.

10.30. We agree with concerns raised by Larundel Dairy Partnership and consider relief can be provided to this submitter as a result of simplifying policies 8.4.36 and 8.4.37. We recommend the deletion of Policy 8.4.37 which prescribes a maximum duration of 10 years for any resource consent and recommend an additional clause is included below clause (d) of Policy 8.4.36 which states that ‘any resource consent granted after the common expiry dates in clauses (a) and (d) shall not exceed 10 years.’ We also recommend a portion of clauses (b) and (c) of Policy 8.4.36 insofar as each clause states ‘1 July 2037 for resource consents granted for’ are deleted. It is considered such a change would simplify the policy and improve readability without changing the intent. We recommend the submission point made by Larundel Dairy Partnership be accepted.

\textsuperscript{2353} PC7-356.55
\textsuperscript{2354} PC7-96.17
\textsuperscript{2355} PC7-273.10
\textsuperscript{2356} PC7-95.29
\textsuperscript{2357} PC7-349.12, PC7-349.13
\textsuperscript{2358} PC7-405.15, PC7-405.16

\textsuperscript{2359} Kaiapoi Tuahiwi Community Board (PC7-42.17, PC7-42.18), Oxford-Ohoka Community Board (PC7-148.16, PC7-148.17), Rangiora-Ashley Community Board (PC7-149.17, PC7-149.18), Waimakariri DC (PC7-3.14, PC7-3.15) & Woodend-Sefton Community Board (PC7-107.17, PC7-296.4)
10.31. It is acknowledged that short consent terms of ten years may affect investment and development decisions as raised by some submissions. Conversely, longer term consents may hinder the ability for the Waimakariri sub-region to make progress towards the attainment of freshwater outcomes, limits and targets as required by the NPSFM. Section 128 of the RMA provides the ability for a Council to review resource consents in light of new standards or limits in a plan, however we are aware there are limitations on the extent of amendments that are able to be made using this process.

10.32. In response to submitters seeking exceptions from short term resource consent durations, we refer to Councils’ obligations under the NPSFM. Aligning resource consent expiry dates and durations with anticipated dates when subsequent future plan reviews are likely to be made operative will ensure progress towards the attainment of freshwater outcomes, limits and targets is ongoing. On this basis, we recommend these submission points be rejected.

**Recommendation**

10.33. That Policies 8.4.36 and 8.4.37 are amended as per Appendix E.

**Policy 8.4.38**

10.34. Proposed Policy 8.4.38 reads:

Assist with achieving the freshwater outcomes for the Waimakariri sub-region by:

a. reviewing, by 31 December 2027, all surface water or stream depleting groundwater permits within the Ashley River/Rakahuri Freshwater Management Unit that have a direct or high stream depletion effect, and by implementing the environmental flow and allocation regimes in Tables 8-1 and 8-3 on all reviewed permits and any new permits granted; and

b. reviewing, by 31 December 2029, all surface water or stream depleting groundwater permits within the Northern Waimakariri Tributaries Freshwater Management Unit that have a direct or high stream depletion effect, and by implementing the environmental flow and allocation regimes in Tables 8-2 and 8-3 on all reviewed permits and any new permits granted.

**Submissions**

10.35. There is a total of 19 submissions on Policy 8.4.38, of which two are in support, one in opposition and 16 oppose in part.

10.36. There are five submitters who seek that the reviews outlined in Policy 8.4.38 exclude community water consents.

10.37. Five submitters consider that reviews are a valid method to implement a new flow and allocation regime, however they request a longer lead-in time be provided. As a result, they seek amendment to the review date to instead be when consents expire (which will be in the

---

2360 Kaiapoi-Tuahiwi Community Board (PC7-42.19), Oxford-Ohoka Community Board (PC7-148.18), Rangiora-Ashley Community Board (PC7-149.19), Waimakariri DC (PC7-3.16), and Woodend-Sefton Community Board (PC7-107.19)

2361 Bowden Environmental (PC7-84.12), W D Croft (PC7-139.4), Four Hooves Ltd (PC7-272.5), Westburn Farm Ltd, (PC7-377.7) and C & S McAllister (PC7-255.22)
early to mid-2030s). However, Federated Farmers\(^{2362}\) believes consent reviews should only take place after consultation and with the agreement and support of consent holders. The submitter seeks an amendment to include an extra sub clause stating this.

10.38. Kaiapoi Promotions Association\(^{2363}\) and Kaiapoi-Tuahiwi Community Board\(^{2364}\) seek amendment to clause (b) to bring forward the consent review process to start straight after the plan change becomes operative and be in place within two years from the date PC7 becomes operative due to the current poor state of the Kaiapoi River. Forest & Bird\(^{2365}\) also seeks earlier timeframes, requesting they are brought forward to 2024 and 2026 for clauses (a) and (b) respectively.

10.39. Fish & Game\(^{2366}\) supports the review of all high or direct depleting surface water or stream depleting groundwater permits, however, it seeks amendment to include adaptive management conditions into these consents to allow for required interventions to respond to “severe” climatic or other land use change variables, similar to that for Policy 8.4.37.

**Analysis**

10.40. Policy 8.4.38 is seeking to ensure water users with existing water permits adhere to the environmental flow and allocation regimes proposed in Tables 8-1, 8-2 and 8-3 of the CLWRP. Policy B6 of the NPSFM requires every regional council to set a timeframe and methods in a regional plan by which overallocation must be phased out, this includes the reviewing of water permits to align them with new environmental flow and allocation regimes. Council, as the consent authority, is able to serve notice on a consent holder of its intent to review the conditions of an existing resource consent in accordance with Section 128 of the RMA.

10.41. We do not support submissions that seek consent reviews exclude water permits used for community water supplies. We highlight that there are no such exclusions included in Policy B6 of the NPSFM and on this basis, do not consider such exemptions are required in Policy 8.4.38.

10.42. Some submitters seek amendment to the date by which all surface water and stream depleting groundwater permits are reviewed. We understand the dates specified in clauses (a) and (b) of Policy 8.4.38 are set following PC7 being made operative and provide some additional time to allow existing operations to adjust. It is anticipated that the changes required in some catchments will likely have a large impact on existing farming operations, therefore allowing some time for water users to prepare is considered appropriate. Policy B6 of the NPSFM requires a defined timeframe by which overallocation must be phased out to the level set to give effects to Policy B1 of the NPSFM. The Section 32 evaluation of provisions for managing surface water quantity in the Ashley River/Rakahuri FMU indicates that there may be further reduction in allocation required to achieve ecological values, but these will likely be the subject of future planning cycles. On this basis, it is not considered appropriate to provide additional time for consent reviews to be undertaken and we recommend submission points seeking extensions should be rejected.

---

\(^{2362}\) PC7-430.104
\(^{2363}\) PC7-449.1
\(^{2364}\) PC7-42.2
\(^{2365}\) PC7-472.100, PC7-472.101
\(^{2366}\) PC7-95.30
10.43. We consider the ability to require a more immediate consent review is justified and provided for in sections 128(b) and 68(7) of the RMA. Inclusion of dates in Policy 8.4.38 that provide for a more prompt review will result in improved outcomes for surface waterbodies, sooner. In our view, more immediate progress toward limits and targets, and other ecological protections such as partial restriction regimes, need to be undertaken quickly to better align with the concept of Te Mana o te Wai. As such, we recommend accepting submissions that seek that the review process occurs at an earlier date.

10.44. We do not recommend adopting amendments to Policy 8.4.38 as sought by Federated Farmers. As stated in the earlier sections of this analysis, Section 128 of the RMA allows a consent authority to serve notice on a consent holder of its intention to review the conditions of a resource consent. As there is no requirement in the RMA to consult and seek agreement or support of consent holders when undertaking a resource consent review, we do not consider amending Policy 8.4.38 to require such is necessary. Accordingly, we recommend the submission point be rejected.

10.45. In response to Fish & Game’s submission, we note that Section 128(1) of the RMA limits the review of resource consents to be undertaken in specific circumstances. There is no ability to include adaptive management conditions to respond to “severe” climatic or other land use change variables. On this basis, we recommend that the submission point is rejected.

10.46. In addition to the amendments to the review timeframes, we also recommend minor amendments to Policy 8.4.38 to improve readability and correct reference to the issuing of reviewed permits (consistent with Part 2, Section 6 of this report – drafting style).

**Recommendation**

10.47. That Policy 8.4.38 is amended as per Appendix E.

**Submission seeking “new” Policies in relation to submissions made on Policies 8.4.35 to 8.4.38**

10.48. This part of the Section 42A Report provides an analysis of submission seeking new policies in relation to submissions made on Policies 8.4.35, 8.4.36, 8.4.37 and 8.4.38. Seven submissions were received seeking new policies be included in Section 8 of the CLWRP.

**Submissions and Analysis**

10.49. Claxby Irrigation Ltd and Waimakariri NGF consider that the science informing longer-term nitrogen loss targets is extremely uncertain. Both submitters seek a new policy is inserted that commits Council to undertake a robust programme of water quality monitoring to inform a review of future targets.

10.50. We consider the relief sought by the submitters is already provided in Policy 8.4.35. On this basis, we recommend these submission points be rejected.

---

2367 Kaiapoi Promotions Association Inc PC7-449.1; Forest & Bird PC7-472.100; PC7-472.101; Kaiapoi-Tuahiwi Community Board PC7-42.2
2368 PC7-433.23
2369 PC7-425.31
10.51. Ballance\textsuperscript{2370} seeks the inclusion of a new policy that requires the targets in Table 8-9 to be reviewed every ten years or in conjunction with the plan review. We note that this is already provided for in Policy 8.4.35(d) and do not recommend that further policy guidance is necessary. We recommend this submission point be rejected.

10.52. Claxby Irrigation Ltd\textsuperscript{2371} and Waimakariri NGF\textsuperscript{2372} seek the insertion of a new policy to ensure council work with the community, including farmers, primary sector groups and other stakeholders, during all stages of the programme that provides for the matters set out in Policy 8.4.35, and in the analysis of the results found.

10.53. We consider that including further direction on the requirements for the Council beyond that included in Policy 8.4.35 are unnecessary and is inappropriate to bind the Council on this matter. Accordingly, we recommend these submission points be rejected.

10.54. Synlait\textsuperscript{2373} seek an additional policy to increase knowledge and understanding of water quality results through increased monitoring of nitrate nitrogen levels in groundwater, by requiring consent holders to undertake an annual groundwater sample from their bores in August. They believe the more information and monitoring data available, from a wider range of sources, will result in better science for future planning.

10.55. We agree with the reasons for the relief sought by Synlait, but consider the proposed wording is ambiguous and uncertain. In our view, the relief sought by Synlait is already provided in part by Policy 8.4.35 as currently worded. Therefore, it is considered a less certain iteration of a similar policy does not provide value and would likely lead to confusion for plan users. We recommend this submission point be rejected.

**General Submissions in relation to monitoring to inform future plan changes**

**Submissions and Analysis**

10.56. Six submitters\textsuperscript{2374} seek heightened or significant emphasis on undertaking a comprehensive zone monitoring programme for the Waimakariri sub-region in the next 10 years to ensure the science is well-informed for future plan changes. Rangvet Limited and Parkdale Ltd submit that this is necessary due to the belief that nitrate sub-zones and long-term reductions are not based on robust or accurate science. Wai Eyre Farm seek this amendment because they believe if on-farm changes are improving nitrate levels, there is no need for further reductions after 2030. Silvacrest Farms Limited are in favour of a zone monitoring programme because they believe that standardised percentage drops of nitrogen loss across the board fails to recognise the effort by farmers who have low figures or have already put measures in place to reduce it.

10.57. We consider the relief sought by submitters is already provided by Policy 8.4.35 and do not consider any additional policy beyond the current wording of Policy 8.4.35 would provide any further guidance for plan users. Accordingly, we recommend these submissions be rejected.

\textsuperscript{2370} 441.27
\textsuperscript{2371} PC7-433.24, PC7-433.11
\textsuperscript{2372} PC7-425.3, PC7-425.16
\textsuperscript{2373} PC7-188.5
\textsuperscript{2374} For example; Rangvet (PC7-96.1), Wai Eyre Farm (PC7-274.28), Silvacrest Farms (PC7-234.23)
Submissions requesting new policies

10.58. A Saunders requests action be taken to clean drains out to prevent less sediment being washed down into spring-fed streams.

10.59. Environment Canterbury manages several drainage schemes across Canterbury, including within the Waimakariri sub-region. This role includes maintenance (involving drain clearance) which is by both the CLWRP and the Flood Protection and Drainage Bylaw. Waimakariri DC has also established a number of Rural Drainage Areas, and Urban Drainage Areas for each town in Waimakariri, and undertakes clearance and upgrades of these assets. Accordingly, we consider that the maintenance of drains is largely outside of the scope of PC7, and recommend rejecting this submission point.

10.60. Several submitters seek the addition of a new policy that “anticipates the whole community working towards an overall groundwater concentration of 6.9 mg/L”. The submitters consider that this new policy would be consistent with similar provisions for the Hinds/Hekeao Plains within the CLWRP. No specific wording for the new policy is proposed by the submitters.

10.61. DHL, WIL, Larundel Dairy Partnership and S & J Tallott seek the inclusion of the following policy:

*Improve water quality in the Waimakariri Nitrate Priority Area to achieve the target nitrate toxicity levels set out in Table 8-5 for Hill-fed Lower and Spring-fed Plains surface water bodies, and an annual average concentration of 6.9 mg/L by:*

- reducing the discharge of nitrogen from farming activities in fulfilment of Table 8-9; and
- implementing Managed Aquifer Recharge and Targeted Stream Augmentation; and
- undertaking monitoring and review in fulfilment of Policy 8.4.35.

10.62. Given the submitters refer to the Hinds/Hekeao Plains within their submissions, we assume they have adopted the target annual average nitrate nitrogen concentration for groundwater in the Hinds/Hekeao Plains Area within Section 13 of the CLWRP. Proposed Table 8-8 sets limits and targets for groundwater in each GAZ within the Waimakariri sub-region. We consider that adopting a target concentration from another sub-region would undermine the proposed limits and targets in Table 8-8, which have been specifically developed for the Waimakariri sub-region. Further, increasing the annual average concentration for nitrate nitrogen to 6.9 mg/L would not meet the requirements of the NPSFM to maintain or improve water quality. Therefore, we recommend rejecting these submission points.

Submissions requesting new rules

10.63. Waimakariri DC, and by reference to their submission, various Community Boards, seek a new discretionary rule for dewatering activities in Rangiora or Kaiapoi required for future...
utilities and/or groundwater management purposes, and for the installation of new infrastructure. This submission is addressed in Part 5, Section 6 of this report.

10.64. Dewatering activities for the purpose of carrying out excavation, construction, maintenance and geotechnical testing within the Waimakariri sub-region are managed under region-wide rules 5.119 (permitted) and 5.120 (restricted discretionary). The proposed groundwater take and use rules within Section 8 do not prevail over these rules, and as such, these dewatering activities are not subject to minimum flows. Therefore, we consider that a discretionary rule in the Waimakariri sub-region for dewatering is not required, and recommend rejecting this relief on this basis.

10.65. G Reed requests the addition of several new rules for the Waimakariri sub-region. The proposed rules are as follows:

- All farms in the Waimakariri region to meet GMP
- All dairy farms should further reduce nitrogen losses by 15% by 2030
- The use of site-specific actions to target lower stream issues such as ASM denitrification walls and the use of modelling only as a guide to highlight where further monitoring sites are required
- Encourage further development of remedies or actions which will further reduce nitrogen losses and encourage farm practices to aim for base GMP
- The permanent fencing of flood channels is excessive, only creates a build-up of weeds, tufted grasses, gorse and broom and causes channels to block up and overflow banks when in flood
- Set up a review of available data by 2027 to signal any further reductions in nitrogen losses needed from 2030 to 2040
- Nitrogen modelling losses should take into account attenuation factors
- Acceptance of site-specific remedies that are having positive effects on streams

10.66. We note that some of these proposed rules read more like policies, methods or other general commentary on Part C of PC7. Whether the submitter intended these statements to function as rules in their own right is unclear from the submission, though we suggest this is unlikely to be the case. However, given the range of topics addressed (e.g. stock exclusion, nitrate reductions, monitoring etc.), the individual submission points have been discussed in the relevant sections of this report and are not assessed further here.

10.67. As One Incorporated request the insertion of a new policy and rule to address the cumulative effects of small individual discharges such as those from on-site domestic wastewater disposal systems. They consider that these discharges are a key potential contributor to nutrient loss as a result of leakage and other malfunctions of old and/or poorly maintained wastewater systems, and the concentrations of these discharges in relatively small disposal fields. They seek provisions that require regular checks and certification of existing lawfully established systems, phased improvement of disposal systems by implementing the best practicable option to achieve reduced loadings, and further investigations into small scale but high concentration discharges in the sub-region. Specific wording is proposed by the submitter for both the new policy and rule.

10.68. We acknowledge the large amount of small block properties within the Waimakariri sub-region and though large in number, on-site sewage effluent discharges are a very small

---

2381 PC7-374.9, 374.10, 374.11, 374.12, 374.13, 374.14, 374.15, 374.16
2382 PC7-387.41
contributor to overall nitrate losses within the zone (estimated at around 1%). Therefore, we consider that adopting a more stringent framework (including a new prohibited activity rule) for these activities in relation to the region-wide provisions for on-site wastewater systems would be unjustified given their relatively modest contribution to nitrate losses within the sub-region. On this basis, we recommend rejecting the relief sought.

Miscellaneous submissions

10.69. Aratika Trust seek that “88.1(A) (Deep Ground Water Graph)” is deleted in its entirety. We note that there is no Graph 88.1(A) within PC7. Therefore, it is unclear what specific provision the submitter is referring to. On this basis, we recommend rejecting this submission point.

10.70. Barnes Family Farms Limited submit that environmental benefits could be enabled by re-assessing the way that Environment Canterbury currently distributes water permits to irrigation schemes. They seek that water is charged on “what is actually used” per cubic metre rather on a litres per second rate. They consider the current approach encourages “maximum use” in order to gain full advantage of the farmers expense. It is our view that this submission is outside the scope of PC7 and the jurisdiction of a regional council. We do not recommend accepting this submission point.

10.71. Waimakariri Group are concerned with the decline in habitat and the degradation of aquatic and terrestrial biodiversity within Canterbury. They consider that the loss of these ecosystems is the result of land use change and intensive farming. They state that relying on the education of developers and landowners, and the implementation of GMP, will not prevent further loss of habitat or achieve the objective and policies of the CRPS. The submitter states that they support the following ZIPA recommendations to address these issues:

- 1.15 and 1.16 (Protecting and enhancing aquatic ecosystem health);
- 3.1 and 3.18 (Reducing nitrates);
- 4.1, 4.3, 4.5, 4.6, 4.7 and 4.16 (Managing surface water quantity); and
- 5.1 to 5.7 (Managing groundwater quantity).

10.72. It is unclear from the submission what specific relief is sought. As such, we do not recommend accepting the submission from Waimakariri Group.
Part 6: Submissions on PC2

11. Submissions on Plan Change 2 to the WRRP

Introduction

11.1. Proposed Plan Change 2 (PC2) to the Waimakariri River Regional Plan (WRRP) is the first step in managing Waimakariri sub-region under one regulatory framework, by including this area under the CLWRP and amending the WRRP by removing the area provided for in Section 8 of the CLWRP. The WRRP will continue to apply to the Waimakariri mainstem, upper catchment and southern tributaries. To provide for these changes, there are proposed amendments to various provisions, the introductory text, definitions, planning map and figures contained in the WRRP.

Submissions and Analysis

11.2. Seventy-seven submissions were received on PC2 to the WRRP. Twenty submitters seek that PC2 is retained as notified on the basis that the amendments will simplify the policy and rule framework that applies in the Waimakariri sub-region and prevent inconsistencies between the WRRP and CLWRP. Five submitters seek that PC2 is deleted in its entirety. It is unclear from these submissions why they seek that the plan change is deleted.

11.3. Several general submissions were received on PC2 on matters that are unrelated to the proposed amendments to the WRRP. Rather, the majority submission points were made more generally on both PC7 to the CLWRP and PC2 WRRP and include matters such as nutrient management, drinking water quality, flow and allocation limits, providing for managed aquifer recharge and the exclusion of stock from waterways. These submission points appear to be against PC7 and are not considered to be “on” PC2, accordingly these submissions have been addressed in both Parts 2 and 5 of this report.

11.4. Waimakariri Group request that PC2 is placed on hold until after the elections to give the incoming Councillors time to familiarise themselves with the plan and provide input. Similarly, J Richardson considers that PC2 should be postponed until the establishment of a fully elected Council or a new Freshwater Policy Statement is gazetted, whichever comes first.

11.5. Ngāi Tūāhuriri Rūnanga seek confirmation that there are no gaps left when introducing policies and rules into the CLWRP. We note that prior to drafting PC2, a comprehensive comparative analysis of provisions contained in the WRRP and CLWRP was undertaken to identify the differences between the provisions in both plans, and in particular, if there are

any WRRP provisions that are not already provided for in the region-wide provisions of the CLWRP\textsuperscript{2387}. This analysis provided recommendations on how any gaps could be addressed, which then formed that basis for the proposed amendments that form PC2. Based on this analysis, we consider they are unlikely to be gaps resulting from the changes proposed and recommend the rejection of this submission point.

11.6. R K Pankhurst\textsuperscript{2388} requests that PC2 is amended to recognise the importance of the Waimakariri River and its aquifers. J Richardson\textsuperscript{2389} seeks amendments to Policy 5.1 to recognise that high flows are necessary for the health of braided rivers and water takes for storage purposes need to be managed accordingly. The purpose of PC2 is to remove the area covered by the Waimakariri sub-region (as defined in the CLWRP) resulting in a single regional plan that applies to the Waimakariri sub-region (being the CLWRP), therefore any amendments that affect the existing management regime for the Waimakariri River is outside the scope of the plan change. On this basis, we recommend these submission points are rejected.

11.7. S J Wylie\textsuperscript{2390} seeks reference to the Kaiapoi River in Section 6.4 ‘Environmental Results Anticipated’ and Appendix 3 ‘Overview of the Main Waimakariri River Catchment Aquatic Values’ of the WRRP is retained. As previously mentioned, the intent of PC2 is to simplify the regulatory framework for the Waimakariri sub-region by having only one regional plan that applies to the Waimakariri sub-region. The Kaiapoi River is within the Waimakariri sub-region and the freshwater management regime is included in the CLWRP via PC7. On this basis, we recommend these submission points are rejected.

Recommendation

11.8. We do not recommend any changes to PC2 in response to submissions, but note there are a small number of typographic errors that require amendment, as indicated in Appendix F.

\textsuperscript{2388} PC2-26.1
\textsuperscript{2389} PC2-7.2
\textsuperscript{2390} PC2-5.1, PC2-5.2
Appendix A – Qualifications and Experience of Reporting Officer

Philip Maw

Philip Maw is the National Managing Partner of the law firm Wynn Williams and a partner in the firm’s Resource Management and Environmental Law team. He holds a Bachelor of Laws and Bachelor of Science. Philip has over 15 years’ of experience and regularly appears before Councils, the Environment Court and the High Court for a range of clients.

Philip has particular expertise in freshwater management, having acted as lead counsel on the development of the Canterbury Land and Water Regional Plan (including sub-region catchment sections), the Hurunui and Waiau River Regional Plan, and the proposed Southland Water and Land Plan. He is a member of the Resource Management Law Association and was previously a member of the National Committee of the Resource Management Law Association.

Andrea Richardson

I am a Senior Planner at Environment Canterbury. I hold a Bachelor of Civil Engineering (Hons) from Canterbury University. I have also completed the “Making Good Decisions” course from the Ministry for the Environment and WSP Opus Environmental Training Centre.

I have over eight years’ experience in resource management and planning at Environment Canterbury. During this time, I have processed a broad range of regional plan consents, prepared and presented section 42A reports at resource consent hearings, and developed and drafted CLWRP policy for PC7 Part A.

Adele Dawson

I am a Senior Resource Management Planner employed by Incite. I hold a Bachelor of Arts (Geography and Sociology) from Canterbury University and a Masters of Resource and Environmental Planning from Massey University. I am also a full member of the New Zealand Planning Institute.

I have over eight years’ of resource management and planning experience largely in the public sector, but having also worked in the private sector. During this time, I have gained experience in many areas including processing a broad range of regional consents, preparing and lodging resource consent applications and policy development, review and plan drafting projects.

Duncan Gray

I have worked as a Senior Freshwater Ecology Scientist for Environment Canterbury since April of 2013. Prior to this I worked for two years as a freshwater ecologist for a consulting firm in Christchurch after completing post-doctoral work within the University of Canterbury Freshwater Ecology Research Group.

I hold a Bachelor of Science (Honours) in Biology conferred by the University of Leeds, UK, a Masters of Science and a PhD in ecology conferred by the University of Canterbury, NZ. I have specialised in invertebrate ecology within a range of systems, primarily braided rivers and streams impacted by mine drainage.
My work for Environment Canterbury includes technical input for the limit setting process in the Selwyn Te Waihora, Wairewa and Upper Waitaki catchments, working in the science policy interface and running the regional ecosystem health monitoring program. I am also involved in national programs to align macroinvertebrate monitoring protocols.

Matthew McCallum-Clark

I am a resource management consultant and a director of the firm Incite. I hold a Bachelor of Laws from Canterbury University, a Bachelor of Commerce (Economics) from Otago University and have undertaken a postgraduate diploma in environmental auditing through Brunel University in the UK. I am also a qualified and experienced independent hearing commissioner, with chair endorsement.

I have been a resource management consultant for over 20 years. Over this time, I have worked on a range of district and regional plans, including the proposed Land and Water Regional Plan, prepared and lodged resource consents and notices of requirement, prepared and presented section 42A reports and acted as hearings commissioner for both resource consent and plan change hearings.

Lochiel McKellar

I am a Planner at Environment Canterbury. I hold a Bachelor of Laws and a Bachelor of Arts (Classics) from the University of Otago. I have also completed the “Making Good Decisions” course from the Ministry for the Environment and WSP Opus Environmental Training Centre.

I have been employed by Environment Canterbury since April 2017. During this time, I have worked in hearing and plan administration and provided support to the OTOP CWMS process. More recently I have assisted in providing feedback on District Council policy and summarising submissions in a regional plan process.

Daniel Clark

I have worked as a hydrologist at Environment Canterbury for over 12 years. This has included roles involving field work, modelling, analysis and reporting. I have held my current role of Senior Scientist – Hydrology, since January 2014.

I hold a Bachelor of Science (Environmental Science) and a Post Graduate Diploma of Water Resource Management, both from Lincoln University. I am currently completing the thesis component of a Master of Water Resource Management, part-time at the University of Canterbury, alongside my employment at Environment Canterbury.

From 2015 to October 2018 I led the science work for the OTOP Healthy Catchments Project as the Technical Lead. This work has included the coordination of a multi-disciplinary science team and assisting the community and zone committees’ understanding of the potential effects of a variety of activities in the zone on water quantity and quality.
Shirley Hayward

I am a Principal Scientist Water Quality and Ecology at Environment Canterbury. I hold the qualifications of Bachelor of Science in Plant and Microbial Sciences, and Master of Science in Environmental Science.

I am an environmental scientist with over 20 years’ experience in water quality and aquatic ecology. I have been involved with and led water quality and aquatic ecology monitoring and investigation programmes and have authored numerous peer-reviewed technical reports on groundwater quality, river and lake water quality and aquatic ecosystem health. The majority of my experience has been in Canterbury, but I have also worked on projects across the country.

I have provided statements of evidence on water quality and aquatic ecology to various planning and consent hearings and to the Environment Court.

Angela Fenemor

I am an Associate Resource Management Planner employed by Incite. I hold a Bachelor of Science (Biology and Geography) from Canterbury University and have completed the Sustainable Nutrient Management in New Zealand Agriculture (Intermediate OVERSEER® Course) at Massey University in 2013. I have also completed the “Making Good Decisions” course from the Ministry for the Environment and WSP Opus Environmental Training Centre.

I have over twelve years’ experience in resource management and planning. Over this time I have worked on a range of regional plans, including the proposed Land and Water Regional Plan, prepared and lodged resource consents and prepared and presented section 42A reports for both resource consent and plan change hearings. I am an associate member of the New Zealand Planning Institute.

Jarred Arthur

I am a Water Quality and Ecology Scientist for Environment Canterbury where I have worked since March of 2016. Prior to this I worked for five years as a freshwater ecologist for an environmental and planning consulting firm in Dunedin.

I hold a Bachelor of Science (Biology) and Masters of Science (Ecology) from the University of Canterbury. I specialised in freshwater invertebrate ecology across a variety of landscapes, primarily fragmented native forest and open grasslands.

My work for Environment Canterbury includes providing technical advice for the Waimakariri sub-region and region-wide plan change processes. Specifically, I assessed flow, habitat and water quality impacts on the ecological values of streams and rivers. I provide advice to a variety of multi-disciplinary teams across Environment Canterbury, and also to external stakeholders and community groups. I also manage the regional primary contact recreation health monitoring program.

Zeb Etheridge

I am Principal Water Resource Scientist and Director of Kōmanawa Solutions Ltd (August 2019 to present) and was a Senior Scientist in the Groundwater Team at Environment Canterbury for the
preceding five years. Between 1999 and 2014 I worked in several consulting firms in the UK and NZ as a hydrogeologist and water resource scientist.

I hold a Bachelor of Science (Honours) in Physical Geography and a Master of Science in Water Resources, both from the University of Wales. As a groundwater specialist my main areas of expertise are groundwater modelling for water quality and water quantity management, assessment of the effects of land and water resource usage on water resources, analysis of groundwater quality and quantity state and trends and design, implementation and management of field investigations. I am knowledgeable about nitrate fate and transport and groundwater chemistry, groundwater age and lag times, groundwater-surface water interaction, coastal zone hydrogeology and climate change.

I spent most of my time at Environment Canterbury undertaking and leading the groundwater science and nitrate management work to support the Part C of PC7 process. My work spanned design and implementation of field investigations at the start of the four-year science programme, analysis and reporting on the current state and trends in groundwater quantity, design and management of the groundwater modelling programme, science communication at Zone Committee and community meetings and the writing of technical reports to support the plan notification.

Amber Kreleger

I am a Senior Groundwater Scientist in the Groundwater Team at Environment Canterbury (August 2018 to present). Prior to this I worked as a Consents Planner for Environment Canterbury and as a Groundwater Resource Advisor for a regional council and a Hydrogeologist for a consulting firm (both in The Netherlands).

I hold a Master of Science in Environmental Science conferred by the Free University of Amsterdam (The Netherlands, 2001) with a specialisation in Ecohydrology – an interdisciplinary field that studies the interactions between hydrological and ecological systems. As a groundwater specialist my main areas of expertise are integrated catchment studies, groundwater quantity modelling and underground resource planning.

My role at Environment Canterbury mainly involves providing technical input for the Waimakariri PC7c process, writing technical reports to support the plan notification and supporting consent planning and regional planning sections with groundwater science advice.

Fouad Alkhaier

I have worked as a Senior Scientist for Environment Canterbury since August 2012. Prior to that I worked intermittently as water resources engineer for governmental water resources organisations in Syria since 1997.

I hold a Bachelor of Science in Civil Engineering conferred by the University of Aleppo, Syria, a Master of Science in Watershed Management Conservation and River Basin Planning conferred by the International Institute for Geoinformation Science and Earth Observation, Enschede, the Netherlands, and a Doctorate in Water Resources conferred by the University of Twente, Enschede, the Netherlands.

My work for Environment Canterbury involves science research and investigations to enhance the scientific understanding of the hydrological system and provide technical advice relating to the
collection and processing of data, resource consents, compliance and enforcement response and planning matters.

**Mark Megaughin**

I am an Associate Hydrologist with Beca, a position I have held since April 2017. Since May 2017 I have been seconded into Environment Canterbury as Lead Hydrologist for the Waimakariri Land and Water Solutions Programme. Prior to this I have worked for several consultancies as a Water Resources Engineer. As of September 2019 I have 19 years professional experience.

I hold a Bachelor of Science with Honours (Environmental Management) from The University of Abertay Dundee (2001), and a Masters of Science (Biology of Water Resources) from Napier University (2002).

Whilst primarily leading technical investigations into water resource use and protection, particularly at a regional level, I also provide advice across most aspects of the water environment. My specific areas of experience include water resource assessments, catchment-scale hydrology, flood hazard management, regional water scheme development, storm water master planning, mine water management and irrigation supply.

**Lisa Scott**

I have been employed as a Groundwater Scientist at the Canterbury Regional Council since 2010 and currently hold the position of Senior Scientist: Groundwater. Prior to moving to New Zealand, I worked as a groundwater research scientist at the CSIR in South Africa (1996 to 2003) and the University of New Brunswick in Canada (2004 to 2009).

I hold an MSc in Environmental Geochemistry and a PhD in Geology from the University of Cape Town, South Africa. My specialisation is groundwater quality, including the prevention, monitoring and remediation of groundwater contamination.

My role at CRC includes reporting on groundwater investigations and regional groundwater quality monitoring as well as providing technical advice. Over the past five years, I have conducted a technical investigation around a large block of quarry and cleanfill operations near Christchurch and provided technical advice for consent planners, compliance officers and decision makers about groundwater effects relating to several similar operations in the Christchurch and Selwyn Districts.
Appendix B – Statutory Framework

1. Introduction

1.1. This Appendix sets out the statutory framework within which PC7 falls to be assessed.

2. Statutory Framework – general requirements

2.1. The following section of this report sets out the general requirements with respect to the preparation of regional plans, including regional rules. These requirements are set out in summary form, with specific consideration then given to those issues that warrant closer attention in separate sections below. These requirements apply to PC7 as a plan change to a regional plan.

3. Contents and preparation of regional plans

3.1. Regional councils must prepare and change any regional plans in accordance with their functions under section 30 of the Resource Management Act 1991 (RMA). The preparation of, or changes to regional plans must be developed in accordance with:

   a. Schedule 1 of the RMA,
   b. The provisions in Part 2 of the RMA,
   c. National policy statements, the New Zealand coastal policy statement, a national planning standard, and any regulations; and
   d. Its obligation to have prepared and have particular regard to an evaluation report prepared in accordance with section 32 of the RMA.

3.2. The regulations made under the RMA of relevance to the Council’s duties (and considered elsewhere in this report) are the Resource Management (National Environmental Standard for Sources of Human Drinking Water) Regulations 2007, the Resource Management (Measurement and Reporting of Water Takes) Regulations 2010, the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 and the Resource Management (National Environmental Standards for Plantation Forestry) Regulations 2017.

3.3. When preparing or changing any regional plan, a regional council:

   a. Shall have regard to management plans and strategies prepared under other Acts that have a bearing on the resource management issues of the region.
   b. Shall have regard to the extent to which the plan needs to be consistent with regional policy statements and plans, or proposed regional policy statements and proposed plans of adjacent regional councils.

---

2391 RMA, s 66(1)(a).
2392 RMA, s 65(5).
2393 RMA, s 66(1)(b).
2394 RMA, ss 66(1)(ea) & (f).
2395 RMA, s 66(1)(d) & (e).
2396 RMA, s 66(2)(c)(i).
2397 RMA, s 66(2)(d).
c. Must take into account any relevant planning document recognised by an iwi authority (if lodged with the Council) that has a bearing on the resource management issues of the region.\textsuperscript{2398}

d. Must not have regard to trade competition.\textsuperscript{2399}

3.4. The contents of regional plans must:

a. State the objectives for the region, the policies to implement the objectives, and the rules (if any) to implement the policies.\textsuperscript{2400}

b. Give effect to any national policy statement, New Zealand coastal policy statement, national planning standard, and any regional policy statement.\textsuperscript{2401}

c. Not be inconsistent with a water conservation order or any other regional plan for the region.\textsuperscript{2402}

d. Record how a natural resource has been allocated under section 30(1)(fa) or (fb) and (4), if the council has done so.\textsuperscript{2403}

3.5. The contents of regional plans may state:\textsuperscript{2404}

a. The issues, methods and principal reasons for adopting the policies and methods in the plan.

b. Anticipated environmental results, efficiency and effectiveness monitoring procedures, and processes for dealing with issues.

c. Information to be included with resource consent applications.

d. Any other information required for fulfilling the regional council’s functions, powers and duties under the RMA.

3.6. The policy statements of particular relevance to PC7 (and considered elsewhere in this report) are:


d. Canterbury Regional Policy Statement.

4. Regional rules

Sections 9, 13 to 15

4.1. Section 9 of the RMA contains restrictions on the use of land that contravenes a national environmental standard, a regional rule or a district rule unless expressly authorised by applicable provisions in the RMA (sections 10, 10A or 20A) or by a resource consent. PC7 continues the approach introduced in the CLWRP by using land use rules (under section 9) to control the cumulative effects of land use on water quality.

\textsuperscript{2398} RMA, s 66(2A).
\textsuperscript{2399} RMA, s 66(3).
\textsuperscript{2400} RMA, s 67(1).
\textsuperscript{2401} RMA, s 67(3).
\textsuperscript{2402} RMA, s 67(4).
\textsuperscript{2403} RMA, s 67(5).
\textsuperscript{2404} RMA, s 67(2).
4.2. Section 13 of the RMA contains restrictions on certain uses of beds of lakes and rivers unless expressly allowed by a regional rule or a resource consent. Section 13 does not apply to any use of land in the coastal marine area.

4.3. Section 14 contains similar restrictions in relation to the taking, use, damming or diverting of water such that no person may take, use, dam, or divert water unless the taking, using, damming, or diverting is expressly allowed by a national environmental standard, a rule in a regional plan as well as a rule in a proposed regional plan for the same region (if there is one), or a resource consent, or is otherwise allowed in accordance with section 14(3).

4.4. Section 15 restricts activities relating to the discharge of contaminants or water into water, contaminants onto or into land in circumstances which may result in the contaminant (or any other contaminant emanating as a result of natural processes from that contaminant) entering water, or contaminants into air (including those from industrial or trade processes). “Contaminant” is defined in the RMA as:

...includes any substance (including gases, odorous compounds, liquids, solids and micro-organisms) or energy (excluding noise) or heat, that either by itself or in combination with the same, similar or other substances, energy or heat –

(a) When discharged into water, changes or is likely to change the physical, chemical, or biological condition of water; or

(b) When discharged onto or into land or into air, changes or is likely to change the physical, chemical or biological condition of the land or air onto or into which it is discharged.

Section 68

4.5. A regional council may include rules in a regional plan for the purposes of carrying out its functions under the RMA (other than those described under section 30(1)(a) and (b)) and achieving the objectives and policies of the plan. When making a rule, a council shall have regard to the actual or potential effect of activities on the environment, including, in particular, any adverse effect.

4.6. A rule may:

a. Apply throughout the region or part of the region;
b. Make different provision for different parts of the region, or different classes of effects arising from an activity;
c. Apply all the time, or for stated periods or seasons;
d. Be specific or general in its application; and
e. Require a resource consent to be obtained for an activity causing, or likely to cause, adverse effects not covered by the plan.

2405 RMA, s 68(1).
2406 RMA, s 68(3).
2407 RMA, s 68(5).
4.7. Where a regional plan includes a rule relating to maximum or minimum levels or flows or rates of use of water, or minimum standards of water quality (relevantly), the plan may state:2408

a. Whether the rule shall affect, under section 130, the exercise of existing resource consents for activities which contravene the rule; and
b. That the holders of resource consents may comply with the terms of the rule, or rules, in stages or over specified periods.

Section 69

4.8. A regional council may use rules to manage water quality for the purposes described in the classes specified in Schedule 3 of the RMA.2409 Rules used for these purposes must require the observance of the standards specified in Schedule 3 in respect of the appropriate class or classes, unless the council believes that those standards are not adequate or appropriate for the particular water quality, in which case the rules may state standards that are more stringent and specific.2410

4.9. Regional councils shall not, however, set standards in a plan which result, or may result, in a reduction of the quality of water unless it is consistent with the purpose of the RMA.2411 The LWRP and PC7 do not use the Schedule 3 approach.

Section 70

4.10. Section 70(1) specifies certain standards relating to permitted activity rules for discharges. Before a regional council includes a permitted activity rule in a regional plan for a discharge of a contaminant or water into water, or a discharge of a contaminant onto or into land in circumstances which may result in that contaminant (or any other contaminant emanating as a result of natural processes from that contaminant) entering water, it shall be satisfied that:

..None of the following effects are likely to arise in the receiving waters, after reasonable mixing, as a result of the discharge of the contaminant (either by itself or in combination with the same, similar or other contaminants).2412

c. The production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials:
d. Any conspicuous change in the colour or visual clarity:
e. Any emission of objectionable odour:
f. The rendering of fresh water unsuitable for consumption by farm animals:
g. Any significant adverse effects on aquatic life.

4.11. Before a regional council includes a rule in a regional plan requiring the adoption of the best practicable option to prevent or minimise any actual or likely adverse effect on the environment of any discharge of a contaminant, the regional council shall be satisfied that, having regard to:

a. The nature of the discharge and the receiving environment; and

---

2408 RMA, s 68(7).
2409 RMA, s 69(1).
2410 RMA, s 69(1).
2411 RMA, s 69(3) – subject to the need to allow for reasonable mixing of a discharged contaminant or water.
2412 RMA, s 70(1)(c)-(g).
b. Other alternatives, including a rule requiring the observance of minimum standards of quality of the environment,

the inclusion of that rule in the plan is the most efficient and effective means of preventing or minimizing those adverse effects on the environment.\footnote{RMA, s 70(2).}

**Part 2**

4.12. The following part of the report considers specific matters arising from the application of the statutory framework. As set out above, a regional plan must be prepared in accordance with a council’s functions under section 30, Part 2 and its obligation to prepare an evaluation report under section 32, any further evaluation required by section 32AA, and to have particular regard to the evaluation reports and any regulations.\footnote{RMA, s 66.}

**General requirements**

4.13. Part 2 of the RMA sets out the purpose and principles of general application in giving effect to the RMA. As set out below, the application of Part 2 when giving effect to higher order directions has been the subject of the Supreme Court’s decision in *Environmental Defence Society Incorporated v New Zealand King Salmon Company Limited*.\footnote{Environmental Defence Society Incorporated v New Zealand King Salmon Company Limited [2014] NZSC 38.}

**The Supreme Court decision in King Salmon**

4.14. The role of Part 2 in the assessment of planning documents (particularly the requirement to give effect to higher order planning documents under section 67) is the subject of the Supreme Court decision in *Environmental Defence Society Incorporated v New Zealand King Salmon Company Limited*.\footnote{Environmental Defence Society Incorporated v New Zealand King Salmon Company Limited [2014] NZSC 38.}

4.15. The Supreme Court's decision cast doubt on the previously accepted approach of applying an "overall broad judgment" under Part 2 when assessing a planning document and whether it gives effect to higher order documents and also when assessing objectives and policies that compete or "pull in different directions".\footnote{Environmental Defence Society Incorporated v New Zealand King Salmon Company Limited at [36].}

4.16. The Court found that there was no basis to refer back to section 5 or to undertake an overall judgment when assessing whether specific, directive, policies in the NZCPS had been given effect to by the provisions of a proposed plan change.\footnote{Environmental Defence Society Incorporated v New Zealand King Salmon Company Limited at [152].} In particular, the Supreme Court found by majority that:

a. The requirement for the regional plan to "give effect to" the NZCPS was a strong direction;\footnote{Environmental Defence Society Incorporated v New Zealand King Salmon Company Limited at [77].}

b. There was no basis to refer back to section 5 or an overall judgment when addressing whether the NZCPS has been given effect to as it is the "mechanism by which Part 2 is given effect to in relation to the coastal environment".\footnote{Environmental Defence Society Incorporated v New Zealand King Salmon Company Limited at [83] to [86].}
c. The use of the word "avoid" in policies 13 and 15 of the NZCPS, has its ordinary meaning of "not allow" or "prevent the occurrence of", and while a policy in the NZCPS "cannot be a 'rule' within the special definition in the RMA, it may nevertheless have the effect of what in ordinary speech would be a rule."

4.17. The Supreme Court was quite clear that there will still be situations where it is necessary to "go back to" Part 2, including:

a. If the policies in question do not “cover the field and a decision-maker will have to consider whether Part 2 provides assistance in dealing with the matter(s) not covered”; or
b. Where there is any uncertainty as to the meaning of particular policies (of the NZCPS); or

4.18. The Supreme Court’s decision in King Salmon has been addressed in the context of a council promulgated plan change following a decision of the High Court in Royal Forest and Bird Protection Society Incorporated v Bay of Plenty Regional Council. In that case, the High Court found that Part 2 remained relevant to plan-making decisions under the RMA, given the nature of the obligation on councils to prepare a plan change in accordance with the matters set out in sections 66(1)(a)-(f), which contains reference to Part 2.

4.19. In Forest and Bird v Bay of Plenty Regional Council, the Court determined that the ratio of King Salmon could apply equally to a Council-promulgated plan change, given that the process under Schedule 1 is the same regardless of whether it was requested.

4.20. This case also dealt further with the issue of reconciling competing national direction. The Court recognised that generally tensions within planning documents will often be more apparent than real, and if a tension is detected recourse should be had to higher order documents, as established by King Salmon. The Court considered that councils should make a “thoroughgoing attempt to find a way to reconcile” the provisions wherever possible.

4.21. The High Court confirmed in Environmental Defence Society Incorporated v Otago Regional Council that specific and unqualified policies (with directive wording, such as “avoid”) prevail over the less directive provisions. The Court confirmed the finding in King Salmon that there is no need to refer back to Part 2 when determining a plan change (absent one of the three exceptions discussed above), as by giving effect to the NZCPS (in that case) the regional council was acting in accordance with Part 2.

---

2420 Environmental Defence Society Incorporated v New Zealand King Salmon Company Limited at [96] and [116].
2421 Environmental Defence Society Incorporated v New Zealand King Salmon Company Limited at [88] and [90].
2422 Royal Forest and Bird Protection Society of New Zealand Incorporated v Bay of Plenty Regional Council (2017) 20 ELRNZ 564 (HC).
2423 Royal Forest and Bird Protection Society of New Zealand Incorporated v Bay of Plenty Regional Council, at [78].
2424 Royal Forest and Bird Protection Society of New Zealand Incorporated v Bay of Plenty Regional Council, at [76].
2425 Royal Forest and Bird Protection Society of New Zealand Incorporated v Bay of Plenty Regional Council, at [98].
2426 Environmental Defence Society Inc v Otago Regional Council [2019] NZHC 2278 at [45].
4.22. Based on these cases, the Council has approached the drafting of PC7 on the basis that while resort should not be had to Part 2 in interpreting objectives and policies in higher order directions unless they fall within one of the categories recognised by the Supreme Court, the decision in King Salmon did not “do away” with Part 2 considerations being relevant to the overall assessment of a variation or plan change in reaching a recommendation on PC7 (bearing in mind the statutory considerations as set out in sections 32, 66, 67 and 68 of the RMA). It is necessary for a decision-maker to consider the higher order documents and policy direction when assessing whether a plan achieves the requirements of section 67.

4.23. Rather, the implication of the recent decisions is that in assessing PC7, an overall judgment approach cannot be relied on to justify a departure from directive policies, particularly in the NZCPS (or by analogy from setting limits and targets as required under the NPS-FM 2014 (as amended in 2017)).

Summary

4.24. Where submitters are seeking recourse to Part 2 of the RMA, the Hearing Panel will need to carefully consider whether one of the three circumstances outlined in King Salmon applies, as discussed above.

5. Giving Effect to National Direction

5.1. PC7 must give effect to any national policy statement. As set out above, the requirement to "give effect to" is a strong one and requires positive implementation of the superior instrument.

5.2. Section 55 of the RMA is the relevant section dealing with local authority recognition of national policy statements. A national policy statement must be recognised by the local authority by:
   a. Amending its plans to either (a) include specific objectives and policies set out in the national policy statement, or (b) give effect to objectives and policies, without using a Schedule 1 process if the national policy statement directs; and
   b. For all other amendments to a document needed to give effect to a national policy statement the local authority must use a Schedule 1 process (i.e. a process of notification, submissions, further submissions, hearings and decisions).

5.3. Under section 55(2D), the local authority must make the amendments as soon as practicable or within the time specified in the national policy statement or before the occurrence of an event specified in the national policy statement.

6. Functions

6.1. The Council’s functions under section 30 as they relate to PC7 are:
   a. Establishing, implementing and reviewing objectives, policies and methods to achieve integrated management of the natural and physical resources of the region (section 30(1)(a)).
b. Preparing objectives and policies in relation to any actual or potential effects of the use, development or protection of land which are of regional significance (section 30(1)(b)).

c. The control of the use of land for the purpose of soil conservation; the maintenance and enhancement of the quality of water in water bodies; the maintenance and enhancement of the quantity of water in water bodies and the maintenance and enhancement of ecosystems in water bodies (section 30(1)(c)).

d. The control of the taking, use, damming and diversion of water, and the control of the quantity, level, and flow of water in any water body, including –
   a. the setting of any maximum or minimum levels or flows of water (section 30(1)(e)(i)); and
   b. the control of the range, or rate of change, of levels or flows of water (section 30(1)(e)(ii)).

e. The control of discharges of contaminants into or onto land, air, or water and discharges of water into water (section 30(1)(f)).

f. If appropriate, the establishment of rules in a regional plan to allocate the taking or use of water (other than open coastal water) (section 30(1)(fa)(i)).

g. If appropriate, the establishment of rules in a regional plan to allocate the capacity of water to assimilate a discharge of a contaminant (section 30(1)(fa)(iv)).

h. The establishment, implementation, and review of objectives, policies, and methods for maintaining indigenous biological diversity (section 30(1)(ga)).

6.2. It is a mandatory function of every regional council to control the use of land to maintain and enhance the quality of water in water bodies, and to control the discharges of contaminants into water.2428 PC7 continues the approach introduced in the LWRP by using land use rules (under section 9) to control the cumulative effects of land use on water quality.

6.3. This approach is supported by section 30(1)(c)(ii) which expressly enables a regional council to control the use of land for the purpose of the maintenance and enhancement of the quality of water in a water body. This approach has been used in other catchments in New Zealand and it is also supported by Objective A1 of the NPS-FM 2014 (as amended in 2017).

7. Section 32

7.1. Section 32 applies to PC7 as an amending proposal to a plan. The objectives in the LWRP are unaltered by PC7. Accordingly, PC7 must be assessed in the following terms. The evaluation must:

   a. Examine the extent to which the purpose of PC7 is the most appropriate way to achieve the purpose of the RMA.2429

   b. Examine whether the provisions (the policies, rules or other methods to implement the objectives) are the most appropriate way to achieve the objectives by:2430
      a. identifying other reasonably practicable options for achieving the objectives;
      b. assessing the efficiency and effectiveness of the provisions in achieving the objectives (the efficiency and effectiveness assessment); and
      c. summarising the reasons for deciding on the provisions; and

---

2428 Ngati Kahungunu Iwi Inc v Hawkes Bay Regional Council [2015] NZEnvC 50 at [29].
2429 RMA, s 32(a).
2430 RMA, s 32(1)(b).
c. Contain a level of detail that corresponds to the scale and significance of the environmental, economic, social and cultural effects that are anticipated from the implementation of PC7.

7.2. The efficiency and effectiveness assessment must:

a. Identify and assess the benefits and costs of the environmental, economic, social and cultural effects that are anticipated from the implementation of the provisions, including opportunities for economic growth (that are anticipated to be provided or reduced); and employment (that are anticipated to be provided or reduced);

b. If practicable, quantify the benefits and costs; and

c. Assess the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the provisions.

7.3. Under section 32(3) where the proposal amends an existing plan (as is the case here) the examination of whether the provisions in PC7 are the most appropriate way to achieve the objectives must relate to:

a. The provisions and objectives (being the purpose of the proposal) of PC7; and

b. The relevant and continuing objectives of the LWRP.

7.4. Section 32(6) defines objectives, proposal and provisions as follows:

**objectives** means-
(a) for a proposal that contains or states objectives, those objectives;
(b) for all other proposals, the purpose of the proposal

**proposal** means a proposed standard, statement, [[national planning standard,]] regulation, plan, or change for which an evaluation report must be prepared under this Act

**provisions** means-
(a) for a proposed plan or change, the policies, rules, or other methods that implement, or give effect to, the objectives of the proposed plan or change;
(b) for all other proposals, the policies or provisions of the proposal that implement, or give effect to, the objectives of the proposal

7.5. Whilst PC7 does not itself contain objectives, the appropriateness of the policies and rules to be introduced by the plan change have been assessed against achieving the objectives of the LWRP. This is because the purpose of PC7 is to implement the LWRP objectives in relation to nutrient management both region wide (where no sub-regional provisions apply) and in the Orari-Temuka-Opihi-Pareora and Waimakariri sub-regions.

7.6. Under Schedule 1 of the RMA, particular regard must be had to the section 32 report when the decision is made as to whether or not to notify PC7. The section 32 report for PC7 was made available at the time of notification.

7.7. Section 32A(1) provides that a challenge to an objective, policy, rule or other method on the grounds that the section 32 report has not been prepared or regarded, or the requirements

---

2431 RMA, s 32(1)(c).
2432 RMA, s 32(2).
2433 RMA, s 32(3).
of section 32 have not been complied with, may only be made in a submission (rather than, for example, judicial review proceedings).

7.8. Section 32A(2) makes it clear that in considering PC7, the Hearing Commissioners may have regard to the matters stated in section 32 and, as set out below, in reaching a decision on a plan change, whether a further evaluation is required.

7.9. Section 32 requires a value judgment as to what, on balance, is the most appropriate option when measured against the relevant objectives. In *Rational Transport Society Incorporated v New Zealand Transport Agency*, the High Court rejected the submission that in order to be the “most appropriate”, a plan change must be the superior method; the Court found that “appropriate” meant suitable, and there was no need to place any gloss on that word by incorporating that it be superior.2434

7.10. Further, the Court did not agree that section 32(3)(b) mandated that each individual objective had to be “the most appropriate” way to achieve the RMA’s purpose. Each object was required to be examined in the process of evaluation. Objectives could not be looked at in isolation because the extent of each objective’s relationship in achieving the purpose of the Act may depend on inter-relationships.2435

7.11. In *Art Deco Society (Auckland) Incorporated v New Zealand Transport Agency*, the Environment Court held that an “holistic” approach should be taken in that case rather than a more focused, vertical or “silo” approach to objectives, policies and methods.2436

8. **Section 32AA**

8.1. Section 32AA provides for an additional requirement for undertaking and publishing further evaluations for any changes that have been made to, or are proposed for, PC7 since the evaluation report for PC7 was completed under section 32.

8.2. Under section 32AA the same evaluation of the changes must be undertaken in accordance with sections 32(1) to (4) at a level of detail that corresponds to the scale and significance of the changes. It also must either:

a. Be published in an evaluation report that is made available at the same time the decision on PC7 is notified; or

b. Be referred to in the decision-making record in sufficient detail to demonstrate that the further evaluation was undertaken.

8.3. It is anticipated that any changes that CRC officers recommend be made to PC7 (in the CRC’s reply) will be accompanied by a further section 32 evaluation of those changes for the purposes of section 32AA.

---


9. The NZCPS, National Policy Statements and the RPS

9.1. PC7 is required to give effect to the NZCPS along with the following national policy statements:
   b. National Policy Statement on Electricity Transmission 2011 (NPSET);

9.2. The Council is also required to give effect to the RPS. The phrase “give effect to” is a strong direction and requires full compliance and positive implementation of the superior instrument.2437

NZCPS

9.3. The NZCPS deals with matters relating to both the coastal marine area and also the coastal environment. It recognises that activities on land can have impacts on coastal water quality as a consequence of point and non-point sources of contamination.

9.4. PC7 manages cumulative effects on water quality through the management of land use. Some of the freshwater resource that will benefit from the region wide and sub-region controls introduced in PC7 fall within the coastal environment. It is considered the NZCPS is given effect to through PC7.

NPSET

9.5. The NPSET must also be given effect to by PC7.

9.6. No submissions or further submissions on PC7 have sought changes to better give effect to the NPSET. Accordingly, the relevant objectives and policies are not repeated here for the purposes of the section 42A report.

NPSREG

9.7. PC7 must give effect to the NPSREG. This is particularly relevant to Part A of PC7, and Part B of PC7 as the Orari-Temuka-Opihi-Pareora sub-region contains the Opuha Dam.

9.8. The NPSREG has one objective:
   
   To recognise the national significance of renewable electricity generation activities by providing for the development, operation, maintenance and upgrading of new and existing renewable electricity generation activities, such that the proportion of New Zealand's electricity generated from renewable energy sources increases to a level that meets or exceeds the New Zealand Government's national target for renewable electricity generation.

2437 Environmental Defence Society Incorporated v New Zealand King Salmon Company Ltd [2014] NZSC 38 at [80]; Clevedon Cares Inc v Manukau City Council [2010] NZEnvC 211.
9.9. Of particular relevance to PC7 is Policy E2:

Regional policy statements and regional and district plans shall include objectives, policies, and methods (including rules within plans) to provide for the development, operation, maintenance, and upgrading of new and existing hydro-electricity generation activities to the extent applicable to the region or district.

9.10. The LWRP already gives effect to the NPSREG; it is considered that PC7 does not reduce the degree to which this occurs.

NPS-FM

9.11. The NPS-FM 2014 (as amended 2017) was Gazetted on 9 August 2017 and came into force on 7 September 2017. From 7 September 2017 the National Policy Statement for Freshwater Management 2014 was replaced with the amended version.

9.12. Several submitters state that PC7 does not give effect to, or is not consistent with, the provisions of the NPS-FM 2014 (as amended 2017). Submissions analysing the NPSFM are specifically addressed elsewhere in this report. This section is intended simply to provide an overview of the NPSFM provisions, including:

a. The preamble to the NPS-FM 2014 (as amended 2017);
b. Water quality provisions;
c. Water quantity provisions;
d. Integrated management provisions;
e. National Objectives Framework provisions;
f. Monitoring and Accounting provisions;
g. Tāngata whenua roles and interests; and
h. Progressive implementation provisions.

The preamble to the NPS-FM 2014 (as amended 2017)

9.13. The preamble details the importance of fresh water to New Zealand’s economic, environmental, cultural and social well-being. Given this importance, and in order to achieve the purpose of the RMA, the Crown has recognised the particular need for national direction for the management of the freshwater resource. This direction is also intended to reflect catchment-level variation between freshwater bodies and demands across regions, manage land use and development activities that affect fresh water whilst lowering their environment impact.

9.14. The NPS-FM 2014 (as amended 2017) provides:

a. Objectives and policies that direct local government management of freshwater;
b. Freshwater accounting requirements;
c. A National Objectives Framework;
d. National bottom lines;
e. Recognition of the significance of Te Mana o te Wai; and
f. The overall maintenance or improvement of freshwater quality within a region.

The preamble may assist the interpretation of the NPS-FM 2014 (as amended 2017).
Te Mana o te Wai

9.15. Te Mana o te Wai was first identified as a matter of national significance in the NPS-FM 2014. Te Mana o te Wai is the integrated is the integrated and holistic well-being of a freshwater body, and makes the mana of water, its health and status, a paramount priority.

9.16. The significance of Te Mana o te Wai was elevated in the 2017 amendments to the NPS-FM 2014 through the inclusion of Objective AA1 and Policy AA1, as follows:

**Objective AA1**

To consider and recognise Te Mana o te Wai in the management of fresh water.

**Policy AA1**

By every regional council making or changing regional policy statements and plans to consider and recognise Te Mana o te Wai, noting that:

- te Mana o te Wai recognises the connection between water and the broader environment – Te Hauora o te Taiao (the health of the environment), Te Hauora o te Wai (the health of the waterbody) and Te Hauora o te Tangata (the health of the people); and
- values identified through engagement and discussion with the community, including tangata whenua, must inform the setting of freshwater objectives and limits.

9.17. Te Mana o te Wai puts the mauri of the waterbody and its ability to provide for Te Hauora o te Taiao (the health of the environment), Te Hauora o te Wai (the health of the waterbody) and Te Hauora o te Tangata (the health of the people) to the forefront of freshwater management.

9.18. In *Aratiaatia Livestock Limited and others v Southland Regional Council* [2019] NZEnvC 208, the Environment Court found that under the NPS-FM 2014 (as amended 2017), it is a matter of national significance that fresh water is managed through a framework that considers and recognises Te Mana o te Wai as an integral part of freshwater management. The Court identified three key understandings in respect of Te Mana o te Wai, as follows:

- As a matter of national significance the NPS-FM 2014 (as amended 2017) requires users of water to provide for hauora and in so doing, acknowledge and protect the mauri of water.
- As a matter of national significance, the health and wellbeing of water are to be placed at the forefront of discussion and decision-making. Only then can we provide for hauora by managing natural resources in accordance with ki uta ki tai.
- The NPS-FM 2014 (as amended 2017) makes clear that providing for the health and wellbeing of waterbodies is at the forefront of all discussions and decisions about fresh water.
9.19. Further, the Court found:\footnote{\textit{Aratiatia Livestock Limited and others v Southland Regional Council} [2019] NZEnvC 208 at [19].}

\textit{Te Mana o te Wai} will be achieved when regional policy statements and plans consider and recognise \textit{Te Mana o te Wai}, and in doing so recognise the connection between water and the broader environment – \textit{te hauora o te taiao} (the health of the environment), \textit{te hauora o te wai} (the health of the waterbody) and \textit{te hauora o te tangata} (the health of the people) – noting that values identified by the community, including tangata whenua, will inform the setting of freshwater objectives and limits (policy AA1).

9.20. For the reasons set out in Part 2 of this report, Council Officers recommend that further changes be made to PC7 to better recognise \textit{Te Mana o te Wai}.

\textbf{Water quality provisions}

\textit{Objective A1}

To safeguard:

a) the life-supporting capacity, ecosystem processes and indigenous species including their associated ecosystems, of fresh water; and

b) the health of people and communities, as affected by contact with fresh water; in sustainably managing the use and development of land, and of discharges of contaminants.

\textit{Objective A2}

The overall quality of fresh water within a freshwater management unit is maintained or improved while:

a) protecting the significant values of outstanding freshwater bodies;

b) protecting the significant values of wetlands; and

c) improving the quality of fresh water in water bodies that have been degraded by human activities to the point of being over-allocated.

\textit{Objective A3}

The quality of fresh water within a freshwater management unit is improved so it is suitable for primary contact more often, unless:

a) regional targets established under Policy A6(b) have been achieved; or

b) naturally occurring processes mean further improvement is not possible.

\textit{Objective A4}

To enable communities to provide for their economic well-being, including productive economic opportunities, in sustainably managing freshwater quality, within limits.

9.21. Objective A1 seeks to safeguard the life supporting capacity of fresh water and the health of people and communities in sustainably managing land use. Objective A2 of the NPS-FM 2014 (as amended 2017) seeks to protect the quality of outstanding freshwater bodies and the
significant values of wetlands, and improve the quality of fresh water in water bodies that have been degraded by human activities to the point of being over-allocated.

9.22. Objective A3 seeks to improve the quality of fresh water within a freshwater management unit so that it is suitable for primary contact more often. Objective A4 seeks to enable communities to provide for their economic well being in sustainably managing freshwater quality.

9.23. The Environment Court in *Ngati Kahungunu Iwi Inc v The Hawke’s Bay Regional Council* acknowledged that while the NPS-FM 2014 (being the version prior to the 2017 amendments) does not provide a definition of what "overall" should mean in respect of Objective A2, it might be appropriate for a Council to regard overall quality as "permitting some increases in a type of contaminant (nitrate-nitrogen, for instance) in a particular waterbody, so long as that was matched or exceeded in its adverse effects by, say, a reduction in some other contaminant, so that the …quality of the water... taken overall, was at least no worse."

9.24. This interpretation does not support an "unders and overs" approach, where water quality may deteriorate in one area so long as there is improvement elsewhere. This approach would be inconsistent with the unqualified function imposed on regional councils by section 30(1)(c)(ii) to maintain and enhance water quality in waterbodies. An "unders and overs" approach may also be seen to be incompatible with section 69 and section 107 relating to water quality and discharges respectively.

9.25. While the Environment Court in this case recognised that A2 is an objective rather than a rule, it did emphasise that an objective is a goal which rules must focus on achieving.

9.26. There are seven policies in this section of the NPS-FM 2014 (as amended 2017) which contain directions to regional councils for their regional plans to implement Objectives A1, A2, A3 and A4. Policy A1 directs regional councils to ensure plans establish freshwater objectives in accordance with Policies CA1-CA4 and freshwater quality limits for all freshwater management units, having regard to reasonably foreseeable impacts of climate change, the connection between water bodies, and the connections between freshwater bodies and coastal water. Parts B and C of PC7 establish freshwater management units for the Orari-Temuka-Opihi-Pareora and Waimakariri sub-regions.

9.27. If freshwater management units do not meet the freshwater objectives made under Policy A1, Policy A2 directs regional councils to specify targets and implement methods, in a way that considers the sources of contaminants recorded under Policy CC1, to assist improvement of water quality to meet the targets within a defined timeframe.

9.28. Policy A3 directs regional councils to impose conditions on discharge permits to ensure the limits and targets made under Policies A1 and A2 can be met. It also directs that where permissible, regional councils are to make rules requiring the adoption of the best practicable option to prevent or minimise any actual or likely adverse effect on the environment as a result of discharges entering freshwater.

9.29. The application of Policy A4 is dependent on when consent applications are lodged, and relates to matters the regional council is to consider when processing applications for discharges.

---

2445 *Ngati Kahungunu Iwi Inc v Hawke’s Bay Regional Council* [2015] NZEnvC 50 at [56].
9.30. Policy A5 provides that every regional council make or change its plans to identify specified rivers and lakes, and primary contact sites, and state what improvements will be made and when, to those specified rivers and lakes, and primary contact sites, so they are suitable for primary contact more often. Further, any improvements to specified rivers and lakes must contribute to achieving regional targets established under Policy A6(b). Alternatively, plans must state how specified rivers and lakes, and primary contact sites, will be maintained if the regional target established under Policy A6(b) have been achieved.

9.31. Policy A6 requires every regional council to develop regional targets to improve the quality of fresh water in specified rivers and lakes and contribute to achieving the national target in Appendix 6 of the NPS-FM 2014 (as amended 2017), ensuring that draft regional targets are available to the public by 31 March 2018, with the final regional targets available to the public by 31 December 2018.

9.32. Finally, Policy A7 provides for every regional council to consider, when giving effect to the NPS-FM 2014 (as amended 2017), how to enable communities to provide for their economic well-being, including productive economic opportunities, while managing within limits.

**Water quantity provisions**

**Objective B1**
To safeguard the life-supporting capacity, ecosystem processes and indigenous species including their associated ecosystems of fresh water, in sustainably managing the taking, using, damming, or diverting of fresh water.

**Objective B2**
To avoid any further over-allocation of fresh water and phase out existing over-allocation.

**Objective B3**
To improve and maximise the efficient allocation and efficient use of water.

**Objective B4**
To protect significant values of wetlands and of outstanding freshwater bodies.

**Objective B5**
To enable communities to provide for their economic well-being, including productive economic opportunities, in sustainably managing fresh water quantity, within limits.

9.33. The policies in this section direct regional councils to address the use, allocations and value of freshwater. Policy B1 requires the Council to ensure that its plans establish freshwater objectives in accordance with Policies CA1-CA4, and set environmental flows/levels for water bodies to give effect to the objectives of the NPS-FM 2014 (as amended 2017). Policy B2 directs regional councils to provide for efficient allocation of freshwater to give effect to Policy B1.

9.34. Policy B3 requires plans to state criteria by which applications for approval of transfers of water take permits are to be decided. Policy B4 requires Councils to identify methods in regional plans to encourage the efficient use of water.
9.35. Policy B5 of the NPS-FM 2014 (as amended 2017) seeks to avoid any further over-allocation of fresh water and phase out existing over-allocation.

9.36. Policy B7 directs regional councils to ensure that plans contain a policy for considering certain consent applications until changes are made operative that will give effect to Policies B1, B2 and B6.

9.37. Finally, Policy B8 requires regional councils to consider, when giving effect to the NPS-FM 2014 (as amended 2017), how to enable communities to provide for their economic well-being, including productive economic opportunities, while managing within limits.

**Integrated management provisions**

**Objective C1**

*To improve integrated management of fresh water and the use and development of land in whole catchments, including the interactions between fresh water, land, associated ecosystems and the coastal environment.*

9.38. Policy C1 directs regional councils to manage freshwater, land use and development in an integrated and sustainable way so as to avoid, remedy, or mitigate adverse effects, including cumulative effects. Policy C2 relates to regional policy statements so is not applicable to PC7.

9.39. PC7 has been developed in an integrated manner with the LWRP in the sense that:

a. Part A – Region Wide: contains changes to region-wide nutrient management provisions in the LWRP.

b. Parts B and C – Orari-Temuka-Opihi-Pareora and Waimakariri sub-regions: contain catchment specific policies and rules under the umbrella of the LWRP as separate sub-region chapters.

**National Objectives Framework provisions**

9.40. Objective CA1 is to provide a nationally consistent approach to establish freshwater objectives for national values, and any other values that recognises regional and local circumstances. Councils are required to consider national values, attribute states for each of those values, and assign a minimum attribute state, considering all matters set out in Policy CA2(f) at defined milestones.

9.41. The NPS-FM 2014 (as amended 2017) contains a very prescriptive process in which the freshwater objectives (the intended environmental outcomes) are to be set (through a National Objectives Framework). These are contained in Policies CA1 to CA4.

9.42. In formulating freshwater objectives which are required to be set under Policies A1 and B1, the Council is required to set the freshwater objective in numeric terms by reference to the specified numeric attribute state contained in the Appendix to the NPS-FM 2014 (as amended 2017) (if there is a numeric attribute state).

9.43. In particular, Policy CA2 requires the Council (in developing freshwater objectives) to consider all national values for water and identify the values for each freshwater management unit (i.e. water body) which includes two compulsory values and may include any other national value or values that the regional council considers appropriate.
9.44. The process under Policy CA2 also requires the Council to assign attribute states for the compulsory values and also for the other values identified for the particular freshwater management unit (some attribute states are specified in an Appendix to the NPS-FM 2014 (as amended 2017) and if an attribute state is not given the Council is required to set an attribute state that the regional council considers appropriate). Freshwater objectives must be formulated in numeric terms with reference to the attribute state if one is included in Appendix 2 of the NPS-FM 2014 (as amended 2017).

9.45. Under Policy CA3, the Council is required to ensure that freshwater objectives for the compulsory values are set at or above national bottom lines for the relevant attribute states unless the existing freshwater quality of the freshwater management unit is already below the national bottom line and the Council considers it appropriate to set the freshwater objective below the national bottom line because the existing freshwater quality is caused by naturally occurring processes or because listed infrastructure contributes to the existing freshwater quality.

9.46. Policy CA4 permits a regional council to set a freshwater objective below a national bottom line on a transitional basis for the freshwater management units and for the periods of time specified in Appendix 4, which is currently empty.

9.47. The Environment Court in *Ngati Kahungunu Iwi Inc v The Hawke's Bay Regional Council* has stated that the minimum requirement is to at least maintain existing water quality, i.e. the quality of the freshwater at the time the Council commences the process of setting or reviewing freshwater objectives and limits in accordance with these policies.\(^2\)

9.48. The Part A (region-wide) provisions of PC7 amend the freshwater outcomes and limits in the LWRP to align numeric values and metrics between the LWRP and the National Objective Framework attributes. The provisions of Parts B and C of PC7, relating to the Orari-Temuka-Opipi-Pareora and Waimakariri sub-regions, are set in accordance with the National Objectives Framework.

**Monitoring and accounting provisions**

9.49. Sections CB and CC relate to the monitoring and accounting of freshwater. Objectives CB1 and CC1 require the Council to develop a monitoring plan, and also to establish a freshwater quality accounting system and a freshwater quantity accounting system.

**Tangata whenua roles and interests**

Objective D1
To provide for the involvement of iwi and hapū, and to ensure that tāngata whenua values and interests are identified and reflected in the management of fresh water including associated ecosystems, and decision-making regarding freshwater planning, including on how all other objectives of this national policy statement are given effect to.

9.50. Policy D1 directs councils to take reasonable steps to involve and work with iwi and hapū in managing freshwater and freshwater ecosystems. It also directs Councils to reflect tāngata...
whenua values and interests in the management of and decision-making regarding freshwater and freshwater ecosystems.

9.51. Consultation has taken place with Te Rūnanga o Ngāi Tahu on Parts A, B and C of PC7. Consultation on Parts B and C (Orari-Temuka-Opihi-Pareora and Waimakariri sub-regions) also occurred when preparing the ZIP Addenda, with inclusion of rūnanga representatives on the Zone Committee.

Progressive implementation provisions

9.52. In light of the prescriptive process that must now be followed by a regional council when implementing the NPS-FM 2014 (as amended 2017) it was impracticable for the Council to fully complete implementation of the NPS-FM 2014 (as amended 2017) by 31 December 2025.

9.53. To address this, the Council notified a revised progressive implementation programme under Policy E1 on 19 January 2019, extending the date by which Policy E1 must be implemented to 31 December 2030. The revised progressive implementation programme provides for Parts B and C of PC7, addressing the Orari-Temuka-Opihi-Pareora and Waimakariri sub-regions, as it is intended that changes required to give effect to the National Objectives Framework will be introduced on a sub-regional basis as part of the staged implementation programme. Part A contains region-wide changes that do not implement the National Objectives Framework, but is considered to give effect to the NPS-FM 2014 (as amended 2017).

Conclusion on NPSFM

9.54. The provisions of PC7 are critically important to:

a. Safeguard the life-supporting capacity, ecosystem processes and indigenous species including their associated ecosystems, of fresh water; and the health of people and communities, as affected by contact with fresh water in sustainably managing the use and development of land, and of discharges of contaminants;

b. Maintain and improve the quality of fresh water across the region and more specifically, in the Orari-Temuka-Opihi-Pareora and Waimakariri sub-regions;

c. Improve the quality of fresh water within a freshwater management unit so it is suitable for primary contact more often;

d. Enable communities to provide for their economic well-being, including productive economic opportunities, in sustainably managing freshwater quality, within limits;

e. Safeguard the life-supporting capacity, ecosystem processes and indigenous species including their associated ecosystems of freshwater in sustainably managing the taking, using, damming, or diverting of freshwater;

f. Avoid over-allocation of nutrients and improve the efficient allocation and efficient use of water;

g. Protect the significant values of wetlands and outstanding freshwater bodies;

h. Enable communities to provide for their economic well-being, including productive economic opportunities, in sustainably managing freshwater quantity, within limits;

i. Improve the integrated management of freshwater and the use and development of land in whole catchments; and

j. Provide for the involvement of iwi and hapu and to ensure that tāngata whenua values and interests are identified and reflected in the management of freshwater.
Government’s proposed freshwater reforms

9.55. The Government has recently released its proposed freshwater management reforms, which include a draft National Policy Statement for Freshwater Management and a proposed National Environmental Standard for Freshwater. These draft / proposed documents currently do not have legal effect and no weight should be given to the proposed reforms in the Hearing Panel’s recommendations on PC7.

9.56. Counsel will update the Hearing Panel if this position changes before the Hearing Panel has made its recommendations on PC7.

Canterbury Regional Policy Statement

9.57. PC7 has been developed to give effect to the RPS. The following objectives and policies of the RPS are of particular relevance:

- Section 7 (Freshwater) Objectives 7.2.1; 7.2.3 and 7.3.4 and Policies 7.3.4; 7.3.6 and 7.3.7;
- Section 9 (Ecosystems and Indigenous Biodiversity): Objectives 9.2.1; 9.2.3 and Policy 9.3.1; and
- Section 10 (Beds of Rivers and Lakes and their Riparian Zones): Objectives 10.2.1; 10.2.2 and 10.2.3 and Policies 10.3.1; 10.3.2; 10.3.3 and 10.3.4.

9.58. Appendix 3 of the section 32 report describes how PC7 gives effect to the relevant provisions of the RPS in more detail.

9.59. The RPS was made operative in January 2013. Since that time, the RPS has been substantially amended and case law has developed, particularly in relation to Te Mana o te Wai. Insofar as the Panel finds that the RPS no longer covers the field with respect to the NPS-FM 2014 (as amended 2017), then the Panel should prefer the provisions of the NPS-FM 2014 (as amended 2017) over those of the RPS. Further, insofar as there is a conflict between the provisions of the RPS and the NPS, the Panel should prefer the provisions of the NPS-FM 2014 (as amended 2017).

10. National Environmental Standards, Other Plans and WCOs

National Environmental Standards

10.1. Section 43B if the RMA addresses the relationship between national environmental standards and rules and resource consents. Section 43B provides that:

A rule or resource consent that is more stringent than a national environmental standard prevails over the standard, if the standard expressly says that a rule or consent may be more stringent than it.

A rule or resource consent that is more lenient than a national environmental standard prevails over the standard if the standard expressly says that a rule or consent may be more lenient than it.

10.2. The only national environmental standards directly relevant to PC7 are the Resource Management (National Environmental Standard for Sources of Human Drinking Water)
Regulations 2007 (Drinking Water NES) and the Resource Management (National Environmental Standards for Plantation Forestry) Regulations 2017 (NESPF).

**Drinking Water NES**

10.3. Regulation 13 of the Drinking Water NES enables a local authority to make or amend rules in a regional plan that are more stringent than the requirements of the Drinking Water NES.

10.4. Regulation 10 of the Drinking Water NES prevents regional councils from including permitted activity rules in regional plans in certain circumstances, where the activities have the potential to affect a registered drinking-water supply that provides no fewer than 501 people with drinking water for not less than 60 calendar days each year.

10.5. Regulation 10(1) states that a regional council must not include a rule in its regional plan to allow a permitted activity, under section 9, 13, 14 or 15 of the Act, upstream of an abstraction point where the drinking water concerned meets the health quality criteria, unless satisfied that the activity is not likely to introduce or increase the concentration of any determinands in the drinking water so that, after existing treatment:

   a. It no longer meets the health quality criteria; or
   b. It contains aesthetic determinands at values exceeding the guideline values.

10.6. Regulation 10(2) states that a regional council must not include a rule in its regional plan to allow a permitted activity, under section 9, 13, 14 or 15 of the Act, upstream of an abstraction point where the drinking water concerned is not tested in accordance with the compliance monitoring procedures in the Drinking-water Standards for New Zealand 2005 (Drinking-water Standard), unless satisfied that the activity is not likely to—

   a. Increase the concentration of any determinands in the drinking water at the abstraction point by more than a minor amount; or
   b. Introduce or increase the concentration of any aesthetic determinands in the drinking water so that, after existing treatment, it contains aesthetic determinands at values exceeding the guideline values.

10.7. Regulation 10(3) states that a regional council must not include a rule in its regional plan to allow a permitted activity, under section 9, 13, 14 or 15 of the Act, upstream of an abstraction point where the drinking water concerned does not meet the health quality criteria, unless satisfied that the activity is not likely to—

   a. Increase, by more than a minor amount, the concentration of any determinands in the drinking water at the abstraction point that already exceed the maximum acceptable values for more than the allowable number of times as set out in the Drinking-water Standard; or
   b. Increase the concentration of any determinands in the drinking water at the abstraction point that do not exceed the maximum acceptable values for more than the allowable number of times as set out in the Drinking-water Standard to the extent that the drinking water after existing treatment, exceeds the maximum acceptable values for more than the allowable number of times as set out in the Drinking-water Standard; or

---

2448 Drinking Water NES, Regulation 9.
c. Introduce or increase the concentration of any aesthetic determinands in the drinking water so that, after existing treatment, it contains aesthetic determinants at values exceeding the guideline values.

10.8. Regulation 8 also contains certain direction on granting water permits or discharge permits, which are referenced in the section 32 report. As set out in the section 32 report, the Council considers that PC7 is not inconsistent with the Drinking Water NES and in particular, that the rules in PC7 are not more lenient than the Drinking Water NES.

**NES-PF**

10.9. The NES-PF came into force on 1 May 2018 and regulates various plantation forestry activities. Specifically, the NES-PF regulates afforestation (being the planting of new forests), pruning and thinning to waste, earthworks, river crossings, forestry quarrying, harvesting, mechanical land preparation, and replanting.

10.10. Regulation 6 of the NES-PF provides that rules in plans may be more stringent than the NES-PF regulations in a number of circumstances, most relevantly if a particular rule gives effect to an objective developed to give effect to the NPS-FM. 2449

10.11. As set out in the section 32 report, PC7 proposes to introduce new rules specifically addressing plantation forestry activities and to delete or amend existing provisions where there is potential for overlap or conflict with the new rules. Doing so will ensure that the objectives in the LWRP developed to give effect to the NPS-FM continue to be met.

**Other**

10.12. The proposed National Environmental Standard on ecological flows and water levels has not been made operative and therefore it is not directly relevant at this time as section 43B does not apply to proposed national environmental standards.

10.13. For completeness, we record that the Resource Management (Measurement and Reporting of Water Takes) Regulations 2010 apply to the taking of water and contain certain regulations regarding measuring and taking water. The regulations do not prescribe matters in relation to the contents of regional plans (although the regulations will override the requirements of regional plans, for example in relation to the provision of information) and are not directly relevant to PC7.

**Other plans and planning documents recognised by iwi**

10.14. When preparing PC7, the Council was required to take into account any relevant planning document recognised by an iwi authority2450 and to have regard to management plans or strategies prepared under other Acts to the extent that these have a bearing on resource management issues in the region.2451

2449 National Policy Statement for Freshwater Management is a defined term in the NES-PF. It includes the National Policy Statement for Freshwater Management 2011, the National Policy Statement for Freshwater Management 2014, and any current edition of the National Policy Statement for Freshwater Management that has legal effect when the edition is being used.

2450 RMA, s 66(2A).

2451 RMA, s 66(2)(c)(ii).
10.15. The following planning documents are recognised by Ngāi Tahu iwi and are relevant to PC7:

10.16. Each of these plans has been considered during the preparation of PC7.2⁴⁵²

10.17. The Sports Fish and Game Birds Management Plans for Nelson/Marlborough, North Canterbury and for the Central South Island prepared under the Conservation Act 1987 are management plans relevant to PC7. They have been considered in the drafting of PC7.2⁴⁵³

**Water Conservation Orders**

10.18. PC7 must not be inconsistent with a water conservation order (WCO).2⁴⁵⁴

10.19. The WCOs that apply within the Canterbury region are:

10.20. Water quality is explicitly addressed in the Rakaia, Rangitata and Ahuriri WCOs. These orders state that no discharge can reduce water quality below specified water quality standards after reasonable mixing.

10.21. PC7 is not considered inconsistent with these orders.

11. **Other Statutes**

11.1. The following section of this report considers the statutory directions contained in statutes other than the RMA.

---

2⁴⁵² Section 32 Evaluation Report for Plan Change 7 (Omnibus, Orari-Temuka-Opihi-Pareora and Waimakariri) to the Canterbury Land and Water Regional Plan and Plan Change 2 to the Waimakariri River Regional Plan at page 28.

2⁴⁵³ Section 32 Evaluation Report for Plan Change 7 (Omnibus, Orari-Temuka-Opihi-Pareora and Waimakariri) to the Canterbury Land and Water Regional Plan and Plan Change 2 to the Waimakariri River Regional Plan at page 34.

2⁴⁵⁴ RMA, s 67(4).
Ngāi Tahu Claims Settlement Act 1998

11.2. The Te Rūnanga o Ngāi Tahu Act 1996 and the Ngāi Tahu Claims Settlement Act 1998 recognise Ngāi Tahu Whānui as tāngata whenua for Canterbury. This is particularly relevant in applying sections 6(e), 7(a) and 8 of the RMA.

11.3. The area covered by the provisions in PC7 contains areas of statutory acknowledgement under the Ngāi Tahu Claims Settlement Act 1998. Schedule 19 of the CLWRP lists these areas.

11.4. The RPS also identifies issues of importance to Ngāi Tahu and describes processes for enhancing the relationship of Ngāi Tahu and the Council (Chapters 2 and 4). Therefore, compliance with those Acts is also relevant to giving effect to the RPS.

Environment Canterbury (Temporary Commissioners and Improved Water Management) Act 2016

11.5. The Environment Canterbury (Temporary Commissioners and Improved Water Management) Act 2016 (ECan Act 2016) came into force on 10 May 2016. This provides the Council with the continuation of certain powers from the Environment Canterbury (Temporary Commissioners and Improved Water Management) Act 2010 that it would not otherwise have, to address issues relevant to the efficient, effective, and sustainable management of freshwater in the Canterbury region.

11.6. In considering PC7, particular regard must be had to the vision and principles of the CWMS, which are set out in Schedule 3 of the ECan Act 2016. This is in addition to the matters relevant under the RMA to its decisions made under clause 10(1) of Schedule 1 of the RMA. Section 21(2) of the ECan Act 2016 states that the inclusion of the vision and principles of the CWMS in Schedule 3 does not accord to the CWMS or its vision and principles any status in law other than as provided in that Act.

11.7. The vision of the CWMS is:

To enable present and future generations to gain the greatest social, economic, recreational and cultural benefits from our water resources within an environmentally sustainable framework.

11.8. The fundamental principles of the CWMS are sustainable management, a regional approach, and kaitiakitanga. The supporting principles are natural character, indigenous biodiversity, access, quality drinking water, recreational and amenity opportunities, and community and commercial use.

11.9. While section 24 of the ECan Act 2016 requires particular regard to be had to the vision and principles of the CWMS, the vision and principles of the CWMS are also being given effect to in Canterbury through the wider auspices of the CWMS as a whole. The CWMS ushered in a collaborative and integrated management approach to freshwater management, seeking to maximise opportunities for the region’s environment, economy and community. The CWMS identified that a shift was required from effects-based management of individual consents, to integrated management based on water management zones, and the management of cumulative effects of both water abstraction and land use intensification. In order to give

2455 For completeness, we note that section 5, Part 3, and Schedules 1 to 3 of the ECan Act 2016 came into force on the transition day, as defined in the ECan Act 2016.
effect to the CWMS vision and principles, a collaborative Zone Committee process was established through the CWMS to enable community informed outcomes.

11.10. The CWMS and the relevant zone committees’ ZIP Addenda is the outcome of extensive consultation and community participation aimed at reaching a consensus as to how to best manage the freshwater resources in the Orari-Temuka-Opihi-Pareora and Waimakariri sub-regions. The CWMS has been endorsed by the Council and all of the territorial authorities in the Canterbury region. As such, it provides valuable guidance about how the people and communities of Canterbury wish to see provision for their wellbeing and health and safety, through the management of the use, development and protection of resources, including water and land. In addition, the CWMS and the Zone Committee process established under it, is one way that the Council has sought to involve the community, including iwi and hapū, in how best to give effect to the NPS-FM.

11.11. Although there is no statutory requirement for PC7 to incorporate or give effect to the entire content of the CWMS, the document as a whole is an important component in determining the most appropriate way of achieving the purpose of the RMA. A decision-maker may also have regard to the CWMS as a whole as a relevant consideration. The CWMS is not a “strategy prepared under other Acts”, in terms of section 66(2)(c)(i) of the RMA, and so is not a mandatory consideration under that section. However, section 66(2)(c) does not create an exhaustive list of considerations. The High Court has held that regard may be had to non-binding national policy documents, as relevant background material, even if those documents do not have any status under the RMA.2456 Further, it is submitted, that in having particular regard to the vision and principles of the CWMS, it is necessary to have regard to the CWMS as a whole and the Zone Committee process established under the CWMS, and the ZIP Addendum, in order to give effect to the vision and principles of the CWMS (and the NPS-FM).

2456 West Coast Regional Council v The Friends of Shearer Swamp [2012] NZRMA 45.
### Appendix C – Policy Comparison Table

<table>
<thead>
<tr>
<th>Section/Category</th>
<th>Section 8 - Waimakariri</th>
<th>Section 14 – Orari-Temuka-Opihi-Pareora</th>
<th>Region-wide (or other sub-regional sections)</th>
</tr>
</thead>
</table>
| **Freshwater Management Units**  | **Policy 8.4.4**  
Management of freshwater in the Waimakariri Sub-region is achieved through the establishment of two Freshwater Management Units and improvements in freshwater attained through setting of, and managing to, water quality and quantity limits for each area. | **Policy 14.4.1**  
Management of freshwater in the Orari-Temuka-Opihi-Pareora sub-region is achieved through the establishment of six Freshwater Management Units, and improvements in freshwater attained through the setting of, and managing to, water quality and quantity limits and targets for each area. | Similar policies in some other sub-regionals such as Section 15B (Waitaki). For example:  
**Policy 15B.4.5**  
Management of water quality in the Waitaki is achieved through the establishment of four Freshwater Management Units and the setting of water quality limits for each of those areas. |
| **Tangata Whenua**                | **Policy 8.4.7**  
Protect wāhi tapu and wāhi taonga in the Waimakariri Sub-region by avoiding as a first priority, and only where avoidance is impracticable requiring, adverse effects of activities on sites of wāhi tapu and wāhi taonga to be minimised. | **Policy 14.4.4**  
Protect wāhi tapu, wāhi taonga and nohoanga in the Orari-Temuka-Opihi-Pareora sub-region by avoiding as a first priority adverse effects on these sites, and where avoidance is impracticable, requiring adverse effects on wāhi tapu, wāhi taonga and nohoanga to be minimised. | **Policy 15B.4.2**  
Protect wāhi tapu and wāhi taonga values in the Waitaki by avoiding or mitigating the adverse effects of land use intensification on wāhi tapu or wāhi taonga. |
| **Policy 8.4.9**                  | **Policy 14.4.3**  
Recognise and provide for the cultural importance of the waterbodies within the Waimakariri Sub-region to Ngāi Tūāhuriri Rūnanga by:  
a. improving the quality of water in groundwater, and in hill-fed and spring-fed rivers; and  
b. improving flows in hill-fed and spring-fed rivers; and | Freshwater quality and quantity within the Orari-Temuka-Opihi-Pareora sub-region provides for the abundance of freshwater mahinga kai that are safe to gather, harvest and consume or use by:  
a. freshwater quality achieving the freshwater limits and targets in Tables 14(c) to 14(g); and  
b. improving flows in hill-fed and spring-fed rivers; and | |
c. reserving an allocation of water from the Cam River/Ruatawha, Ashley River/Rakahuri, and Silverstream for mahinga kai enhancement purposes; and

d. extending the region-wide stock exclusion rules to springs (waipuna) and other surface waterbodies

<table>
<thead>
<tr>
<th>Section/Category</th>
<th>Section 8 - Waimakariri</th>
<th>Section 14 – Orari-Temuka-Opihi-Pareora</th>
<th>Region-wide (or other sub-regional sections)</th>
</tr>
</thead>
<tbody>
<tr>
<td>c. reserving an allocation of water from the Cam River/Ruatawha, Ashley River/Rakahuri, and Silverstream for mahinga kai enhancement purposes; and</td>
<td>c. reserving an allocation of water from the Temuka Freshwater Management Unit, in accordance with Table 14(l), for the enhancement of mahinga kai and associated tangata whenua values; and</td>
<td>d. requiring all farming activities which include winter grazing or irrigation and that include or directly adjoin a surface water body within the Mātaitai Protection Zone, to operate at Good Management Practice and prepare and implement an audited Farm Environment Plan in accordance with Schedule 7.</td>
<td></td>
</tr>
<tr>
<td>d. extending the region-wide stock exclusion rules to springs (waipuna) and other surface waterbodies</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Abstraction of Water**

**Policy 8.4.10**

Surface water flows are improved in the Waimakariri Sub-region by ensuring all A, B and C permit abstractions comply with the environmental flow and allocation regimes set out in Tables 8-1, 8-2 and 8-3.

**Policy 14.4.6**

Surface water flows are improved in the Orari-Temuka-Opihi-Pareora sub-region by ensuring all consented abstractions comply with the applicable environmental flow and allocation regimes set out in Tables 14(h) to 14(za).
<table>
<thead>
<tr>
<th>Section/Category</th>
<th>Section 8 - Waimakariri</th>
<th>Section 14 – Orari-Temuka-Opihi-Pareora</th>
<th>Region-wide (or other sub-regional sections)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transfers of Water Permits</td>
<td>Policy 8.4.18</td>
<td>Policy 14.4.13</td>
<td>Policy 4.50</td>
</tr>
<tr>
<td></td>
<td><strong>Assist with phasing out over-allocation of freshwater resources in the Ashley River/Rakahuri, Taranaki Creek, Waikuku Stream, Saltwater Creek, Cust River, Cust Main Drain and Courtenay Stream Surface Water Allocation Zones by 2032, through implementing region-wide Policy 4.50 to address over-allocation, and in addition:</strong></td>
<td><strong>Assist with phasing out over-allocation of freshwater resources by implementing region-wide Policy 4.50 and in addition:</strong></td>
<td><strong>Where the rate of take or volume of water consented for abstraction from a catchment exceeds the environmental flow and water allocation limit for surface water or stream depleting groundwater, or the groundwater allocation limit for that catchment, any further allocation of water is limited to:</strong></td>
</tr>
<tr>
<td></td>
<td><strong>a.</strong> only granting a permit to transfer water from one site to another where the permit has been exercised and records of past use are provided which demonstrate the water to be transferred has been used in the preceding 5 years; and <strong>b.</strong> requiring, in over-allocated Surface Water Allocation Zones and except where the water is to be used for community supply or stock drinking water, that 50 percent of the water proposed to be transferred is surrendered and not re-allocated.</td>
<td><strong>a.</strong> by only granting a permit to transfer water from one site to another where the water permit has previously been exercised and the maximum rate and/or volume to be transferred is determined as efficient based on records of past use; and <strong>b.</strong> requiring in over-allocated surface water catchments and Groundwater Allocation Zones and except where the water is to be used for community supply or stock drinking water, that a portion of water to be transferred is surrendered that is proportionate to the status of over-allocation in the catchment, up to a maximum of 75%; and <strong>c.</strong> not granting any application to transfer a water permit from the Temuka Freshwater Management Unit.</td>
<td><strong>a.</strong> any abstraction necessary to meet community water supply and stockwater requirements; and <strong>b.</strong> the replacement of existing resource consents provided that: <strong>i.</strong> a reduction in over-allocation is enabled through the replacement resource consent being for no more than 90% of the previously consented rate of take and annual or seasonal volume unless there is a method and defined timeframe to phase out over-allocation set out in the relevant sub-region Section of this Plan; and <strong>ii.</strong> there are significant and enduring improvements in the efficiency of water use and reductions in any adverse effects; or <strong>iii.</strong> it is demonstrated that the existing use of water is efficient and that the efficiency is enduring. <strong>Policy 4.71</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Enable the transfer of water permits to take or use water, provided:</strong></td>
</tr>
</tbody>
</table>
Section/Category | Section 8 - Waimakariri | Section 14 – Orari-Temuka-Opihi-Pareora | Region-wide (or other sub-regional sections)
--- | --- | --- | ---
a. the transfer of water is occurring within the same surface water catchment or sub-catchment, or the same groundwater zone, as defined in this Plan;  
b. the same or a lesser amount of water is being taken or used;  
ba. the transferee’s water take is reasonable for their proposed use as determined under the provisions of this Plan including Schedule 10 for irrigation uses;  
c. the adverse effects of the take and use of water are not more than minor; and  
d. that in an over-allocated surface water catchment or groundwater zone, a proportion of the allocated water is surrendered and is not re-allocated, unless there is a method and defined timeframe to phase out over-allocation set out in an applicable sub-region Section of this Plan.

Efficient Use of Water | Policy 14.4.10 | Policy 4.49 | Enable the taking of water for community water supply by not requiring compliance with any minimum or residual flow or partial restriction conditions and the environmental flow and allocation regime or groundwater allocation limit provided a water supply strategy developed in accordance with Schedule 25 is in place and the water supply is so managed as to restrict the use of water from those supplies during periods of low flow or low water levels.

Enable the taking of water for community water supply by not requiring compliance with any minimum flow, residual flow or partial restriction conditions, or the environmental flow and allocation regime or groundwater allocation limit set out in Tables 14(h) to 14(zb), provided a Water Supply Strategy developed in accordance with Schedule 25 is in place and the water supply is managed so as to restrict the use of water during periods of low flow or low water levels.
<table>
<thead>
<tr>
<th>Section/Category</th>
<th>Section 8 - Waimakariri</th>
<th>Section 14 – Orari-Temuka-Opihi-Pareora</th>
<th>Region-wide (or other sub-regional sections)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy 8.4.23</td>
<td>Where a property is supplied with water by an irrigation scheme or principal water supplier, applications to take and use additional water are only granted where the applicant demonstrates that water supplied to the property by the irrigation scheme is being used efficiently and to the fullest extent possible.</td>
<td>Policy 14.4.11</td>
<td>Policy 4.66</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Water abstraction for irrigation is managed so that:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>a. winter flows are available for abstraction to storage, while ensuring ecosystem recovery through the maintenance of flow variability; and</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>b. unless specified otherwise, abstraction is for a defined annual volume determined in accordance with Schedule 10.</td>
</tr>
<tr>
<td>Policy 8.4.24</td>
<td>When determining an efficient allocation (in accordance with Schedule 10) for the replacement of a lawfully established permit to take and use water for irrigation affected by the provisions of section 124-124C of the RMA, consider records of past water use.</td>
<td>Policy 14.4.12</td>
<td>Policy 4.66 as above.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Policy 14.4.14</td>
<td>Except for AA, BA or KIL permits, restrict the volume and/or rate of water allocated to any water permit for irrigation that will replace an existing water permit affected by the provisions of Sections 124 – 124C of the RMA to a volume and/or rate that reflects past use, determined in accordance with Method 1 of Schedule 10.</td>
<td>Policy 4.55</td>
<td>Any discharge of water resulting from moving water from one catchment or waterbody to another in particular:</td>
</tr>
<tr>
<td>TSA/Out of Catchment Water</td>
<td>Policy 8.4.21</td>
<td>Policy 14.4.14</td>
<td></td>
</tr>
<tr>
<td></td>
<td>When introducing water from outside the catchment for targeted stream</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Section/Category</td>
<td>Section 8 - Waimakariri</td>
<td>Section 14 – Orari-Temuka-Opihi-Pareora</td>
<td>Region-wide (or other sub-regional sections)</td>
</tr>
<tr>
<td>------------------</td>
<td>--------------------------</td>
<td>------------------------------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>augmentation, protect the values, customs and culture of Ngāi Tūāhuriri Rūnanga by:</td>
<td>a. requiring any proposal to include, in addition to the matters in Policy 4.55, evidence of any consultation undertaken with Te Rūnanga o Ngāi Tahu and Ngāi Tūāhuriri Rūnanga, and a description of how the proposal responds to any matters raised; and</td>
<td>a. does not facilitate the unwanted transfer of fish species, plant pests or unwanted organisms into catchments where they are not already present;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b. decision makers having particular regard to any views expressed by Te Rūnanga o Ngāi Tahu and Ngāi Tūāhuriri Rūnanga, and in particular, any views expressed regarding the extent to which the proposal diminishes the mauri of freshwater resources and compromises customs and kaitiaki responsibilities.</td>
<td>b. takes into account Ngāi Tahu values;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>c. does not have a more than a minor adverse effect on the natural character of the receiving water;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>d. does not compromise the ability of existing drinking-water treatment systems to effectively treat the water to achieve the standards set out in the Drinking-water Standards for New Zealand; and</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>e. does not have a more than a minor adverse effect on fish migration.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Policy 4.56</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Where water is introduced from outside a catchment, the additional surface water flows are not available for abstraction unless either:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>a. a new or revised environmental flow and allocation regime is introduced through a plan change; or</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>b. the existing environmental flow and allocation regime has been developed in anticipation of the additional surface water flows.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Policy 4.71A</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Proposals to transfer water from one catchment to another are the subject of timely consultation with Ngāi Tahu on the whakapapa of the catchments, and on the effects on natural character, water quality and ecology of the catchments.</td>
<td></td>
</tr>
<tr>
<td>Section/Category</td>
<td>Section 8 - Waimakariri</td>
<td>Section 14 – Orari-Temuka-Opihi-Pareora</td>
<td>Region-wide (or other sub-regional sections)</td>
</tr>
<tr>
<td>------------------</td>
<td>--------------------------</td>
<td>----------------------------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>Nutrient Management</td>
<td>Policy 8.4.26</td>
<td>Policy 14.4.20</td>
<td>Policy 4.38C</td>
</tr>
<tr>
<td><strong>Within the Waimakariri Sub-region only consider granting an application for resource consent to exceed the Baseline GMP Loss Rate where:</strong></td>
<td><strong>In the Orari-Temuka-Opihi-Pareora sub-region, only consider granting an application for a land use consent for a farming activity to exceed the Baseline GMP Loss Rate where:</strong></td>
<td><strong>Within the Red, Orange, Green or Light Blue Nutrient Allocation Zones, only consider the granting of an application for resource consent to exceed the thresholds in Policy 4.37(a), Policy 4.38(a) or Policy 4.38A(a) where:</strong></td>
<td></td>
</tr>
<tr>
<td>a. the Baseline GMP Loss Rate has been lawfully exceeded prior to 20 July 2019 and the application for resource consent contains evidence that directly and specifically establishes that the exceedance was lawful; and</td>
<td>a. the Baseline GMP Loss Rate has been lawfully exceeded prior to 20 July 2019 and the application for resource consent contains evidence that directly and specifically establishes that the exceedance was lawful; and</td>
<td>a. the nitrogen baseline has been lawfully exceeded prior to 13 February 2016 and the application contains evidence that directly and specifically establishes that the exceedance was lawful; and</td>
<td></td>
</tr>
<tr>
<td>b. the nitrogen loss calculation remains below the lesser of either the Good Management Practice Loss Rate or the nitrogen loss calculation that occurred in the four years prior to 20 July 2019; and</td>
<td>b. the nitrogen loss calculation remains below the lesser of either the Good Management Practice Loss Rate or the nitrogen loss calculation that occurred in the four years prior to 20 July 2019; and</td>
<td>b. the nitrogen loss calculation remains below the lesser of the Good Management Practice Loss Rate or the nitrogen loss calculation that occurred in the four years prior to 13 February 2016.</td>
<td></td>
</tr>
<tr>
<td>c. for properties within the Nitrate Priority Area, the applicant demonstrates through actions and a timeframe set out in the Farm Environment Plan, how any further reductions required by Table 8-9 will be achieved.</td>
<td>c. for properties within the Rangitata Orton High Nitrogen Concentration Area, Fairlie Basin High Nitrogen Concentration Area and Levels Plain High Nitrogen Concentration Area, the applicant commits to achieving the percentage-based nitrogen loss reductions in Table 14(zc).</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Policy 8.4.28B</strong></td>
<td><strong>Policy 14.4.20B</strong></td>
<td><strong>Policy 4.38D</strong></td>
<td></td>
</tr>
<tr>
<td>Provide for the use of an Equivalent Baseline GMP Loss Rate or Equivalent Good Management Practice Loss Rate in those limited circumstances where it is demonstrated that the Farm Portal is unable to generate a Baseline GMP Loss Rate or Good Management Practice Loss Rate or the</td>
<td>Provide for the use of an Equivalent Baseline GMP Loss Rate or Equivalent Good Management Practice Loss Rate in those limited circumstances where it is demonstrated that the Farm Portal is unable to generate a Baseline GMP Loss Rate or Good Management Practice Loss</td>
<td>Provide for the use of an Equivalent Baseline GMP Loss Rate or Equivalent Good Management Practice Loss Rate in those limited circumstances where it is demonstrated that the Farm Portal is unable to generate a Baseline GMP Loss Rate or Good Management Practice Loss Rate or the</td>
<td></td>
</tr>
<tr>
<td>Section/Category</td>
<td>Section 8 - Waimakariri</td>
<td>Section 14 – Orari-Temuka-Opihi-Pareora</td>
<td>Region-wide (or other sub-regional sections)</td>
</tr>
<tr>
<td>------------------</td>
<td>--------------------------</td>
<td>---------------------------------------</td>
<td>--------------------------------------------</td>
</tr>
<tr>
<td>number generated is demonstrated to be erroneous.</td>
<td>Rate or the number generated is demonstrated to be erroneous.</td>
<td>the number generated is demonstrated to be erroneous.</td>
<td></td>
</tr>
<tr>
<td><strong>Policy 8.4.28C</strong></td>
<td>Where resource consent is granted for the use of land for a farming activity and that resource consent restricts the nitrogen loss rate from the farming activity to an Equivalent Baseline GMP Loss Rate or Equivalent Good Management Practice Loss Rate, impose conditions that enable a review of that resource consent when the Farm Portal is able to generate a Baseline GMP Loss Rate or Good Management Practice Loss Rate for that farming activity.</td>
<td><strong>Policy 14.4.20C</strong></td>
<td>Where resource consent is granted for the use of land for a farming activity and that resource consent restricts the nitrogen loss rate from the farming activity to an Equivalent Baseline GMP Loss Rate or Equivalent Good Management Practice Loss Rate, impose conditions that enable a review of that resource consent when the Farm Portal is able to generate a Baseline GMP Loss Rate or Good Management Practice Loss Rate for that farming activity.</td>
</tr>
<tr>
<td><strong>Policy 4.38E</strong></td>
<td>Where resource consent is granted for the use of land for a farming activity and that resource consent restricts the nitrogen loss rate from the farming activity to an Equivalent Baseline GMP Loss Rate or Equivalent Good Management Practice Loss Rate, impose conditions that enable a review of that resource consent when the Farm Portal is able to generate a Baseline GMP Loss Rate or Good Management Practice Loss Rate for that farming activity.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Livestock Exclusion</strong></td>
<td><strong>Policy 8.4.30</strong></td>
<td><strong>Policy 14.4.15</strong></td>
<td></td>
</tr>
<tr>
<td>Within the Waimakariri Sub-region, the region-wide provisions on livestock exclusion also apply to:</td>
<td>Within the Waimakariri Sub-region, the region-wide provisions on livestock exclusion also apply to:</td>
<td>Within the Orari-Temuka-Opihi-Pareora sub-region, the region-wide provisions on livestock exclusion also apply to:</td>
<td></td>
</tr>
<tr>
<td>a. permanently or intermittently flowing springs (waipuna); and</td>
<td>a. permanently or intermittently flowing springs (waipuna); and</td>
<td>a. permanently or intermittently flowing springs (waipuna); and</td>
<td></td>
</tr>
<tr>
<td>b. open drains and other artificial watercourses with surface water in them that discharge into a lake, river or wetland.</td>
<td>b. open drains and other artificial watercourses with surface water in them that discharge into a lake, river or wetland.</td>
<td>b. open drains and other artificial watercourses with surface water in them that discharge into a lake, river or wetland.</td>
<td></td>
</tr>
<tr>
<td>Section/Category</td>
<td>Section 8 - Waimakariri</td>
<td>Section 14 – Orari-Temuka-Opihi-Pareora</td>
<td>Region-wide (or other sub-regional sections)</td>
</tr>
<tr>
<td>------------------</td>
<td>-------------------------</td>
<td>----------------------------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>Policy 8.4.31</td>
<td>Policy 14.4.16</td>
<td>Policy 4.31</td>
<td></td>
</tr>
<tr>
<td>Protect Ngāi Tūāhuriri values associated with springs (waipuna), rivers and lakes, and avoid discharges of sediment and contaminants to water bodies, and the degradation of aquatic ecosystems by:</td>
<td>Protect papatipu rūnanga values associated with springs (waipuna), freshwater mātaitai, rivers and lakes and reduce the loss of microbial contaminants, phosphorus and sediment to surface water by:</td>
<td>Damage to the bed or banks of water bodies, sedimentation and disturbance of the waterbody, direct discharge of contaminants, and degradation of aquatic ecosystems and inanga and salmon spawning habitat is avoided by:</td>
<td></td>
</tr>
<tr>
<td>a. implementing, within the Waimakariri Sub-region, the region-wide provisions for stock exclusion; and</td>
<td>a. implementing, within the Orari-Temuka-Opihi-Pareora sub-region, the region-wide provisions for stock exclusion; and</td>
<td>a. excluding intensively farmed stock from lakes, rivers and wetlands; and</td>
<td></td>
</tr>
<tr>
<td>b. excluding, within the Ashley-Waimakariri Plains Area, all farmed cattle, deer and pigs from the bed (including the banks) of any lake, river, permanently or intermittently flowing spring, or any open drain or other artificial watercourse that contains surface water and which discharges into a river or lake.</td>
<td>a. excluding, within the Mātaitai Protection Zone, all farmed cattle, deer and pigs from the bed (including the banks) of lakes and rivers, any permanently or intermittently flowing spring, and any open drain or artificial watercourse that contains water and that discharges into a lake, river or wetland.</td>
<td>b. excluding stock from within freshwater bathing sites listed in Schedule 6, salmon spawning sites listed in Schedule 17, Community Drinking-water Protection Zones as set out in Schedule 1, other sensitive waterbody areas; and the waterbody bed and banks closely adjacent to and upstream of these areas; and</td>
<td></td>
</tr>
<tr>
<td>Consent Review</td>
<td>Consent Review</td>
<td>Consent Review</td>
<td></td>
</tr>
<tr>
<td>Policy 8.4.38</td>
<td>Policy 14.4.21</td>
<td>Policy 4.31</td>
<td></td>
</tr>
<tr>
<td>Assist with achieving the freshwater outcomes for the Waimakariri Sub-region by:</td>
<td>Assist with achieving the freshwater outcomes for the Orari, Temuka and Opihi Freshwater Management Units by reviewing, immediately after Plan Change 7 is made operative, all surface water and stream depleting groundwater permits with a direct or high stream-depletion effect, and by</td>
<td>a. excluding stock from inanga spawning habitat; and</td>
<td></td>
</tr>
<tr>
<td>a. reviewing, by 31 December 2027, all surface water or stream depleting groundwater permits within the Ashley River/Rakahuri Freshwater Management Unit that have a direct or high stream depletion effect, and by</td>
<td>implementing the environmental flow and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. access to wetlands, and the banks or beds of lakes and rivers to stock species that prefer to avoid water and at stocking rates that avoid evident damage.</td>
<td>b. excluding stock from within freshwater bathing sites listed in Schedule 6, salmon spawning sites listed in Schedule 17, Community Drinking-water Protection Zones as set out in Schedule 1, other sensitive waterbody areas; and the waterbody bed and banks closely adjacent to and upstream of these areas; and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Section/Category</td>
<td>Section 8 - Waimakariri</td>
<td>Section 14 – Orari-Temuka-Opihi-Pareora</td>
<td>Region-wide (or other sub-regional sections)</td>
</tr>
<tr>
<td>------------------</td>
<td>-------------------------</td>
<td>-----------------------------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>implementing the environmental flow and allocation regimes in Tables 8-1 and 8-3 on all reviewed permits and any new permits granted; and b. reviewing, by 31 December 2029, all surface water or stream depleting groundwater permits within the Northern Waimakariri Tributaries Freshwater Management Unit that have a direct or high stream depletion effect, and by implementing the environmental flow and allocation regimes in Tables 8-2 and 8-3 on all reviewed permits and any new permits granted.</td>
<td>allocation regimes in Tables 14 (h) to 14(y) on all reviewed permits.</td>
<td></td>
</tr>
</tbody>
</table>
Appendix D – Technical Memorandums

1. Appendix D.1 – Delineation of Nitrate Priority Sub-areas

1.1. The delineation of the Nitrate Priority Sub-areas has been explained in Section 5.4.2 of Kreleger and Etheridge (2019) and on the Environment Canterbury Website under the Frequently Asked Questions for Plan change 7 and Plan Change 2. These information sources provide a useful summary of the Sub-area delineation process:

   a. We looked at the projected nitrate concentration for each receptor under the Current Pathways Scenario.
   b. We compared the projected nitrate concentration to the nitrate concentration (limits and thresholds) recommended in the Zone Implementation Programme Addendum.
   c. We calculated the required total nitrate loss reductions in the groundwater recharge area for each receptor to be able to achieve the proposed nitrate concentration limits and targets.
   d. We calculated the number of nitrate loss reduction stages based on the beyond Baseline GMP reductions required for consented dairy land use activities (15% reduction every 10 years) and other consented land use activities (5% reductions every 10 years) and the total area they cover within the groundwater recharge zones for each receptor. The calculations exclude land use activities that meet the permitted activity rules.
   e. Based on this comparison the number of 10-year reduction stages was calculated for each receptor.
   f. The number of 10-year reduction stages per receptor was allocated to the receptor’s groundwater recharge zone if it (partly) falls within the Nitrogen Priority Area.
   g. Where groundwater recharge zones overlap, the highest number of required 10-year reduction stages was allocated to the consented property.
   h. We merged groundwater recharge zones with similar number of required 10-year reduction stages into five Nitrate Priority Sub-areas A – E; for example, sub-area A needs 1.5 to 2.4 reduction stages in order to achieve the proposed nitrate limits for all receptors receiving recharge from this sub-area, which is rounded to 2 stages. Sub-area B needs 2.5 to 3.4 reductions stages, which is rounded to 3 stages.

1.2. A justification for the Sub-areas is that they recognise that not all consented landuse in the NPA affects the same receptors. For example, nitrate losses on a dairy farm near Oxford will probably not affect nitrate concentrations in the Waikuku community supply well, but it might affect the West Eyreton Community Supply well. That same farm could affect nitrate concentrations in the deep aquifers under Christchurch, but a farm near Swannanoa might not. The Sub-areas encourage nitrate loss reductions to be spread out evenly within the NPA to benefit all the specified receptors. Without the Sub-areas efforts to reduce nitrate losses to the soil might be concentrated in parts of the NPA that benefit only a few receptors.

---

2457 This appendix was prepared by Amber Kreleger and Zeb Etheridge
2. **Appendix D.2 – Additional EPM and BBM Modelling**

2.1. Kreleger and Etheridge (2019) provided indicative plots of the increase in nitrate concentrations over time for specific groundwater receptors as per the example in the figure below (Deep aquifer in western Christchurch). They noted the following regarding these plots:

*In order to produce these plots using currently available data (which comprises current annual median nitrate concentration estimates, modelled steady state concentrations and the estimates of mean residence time discussed above) we assumed a simple linear rate of change between current measured nitrate concentrations and the modelled steady state nitrate concentrations for the GMP and Current Pathways Scenarios (see 4.6.2). Our linearity assumption implies a uniform groundwater age distribution which is highly unlikely to be the case in reality. The actual age distribution for each receptor is unknown and likely to be variable both between receptors and over time. The outcome of these factors is that actual nitrate concentrations are unlikely to follow the modelled time series data.*

![Figure x1 Indicative nitrate concentration vs. time plots for western Christchurch](image)

**Exponential Piston Model**

2.2. We have explored the effects of Kreleger and Etheridge’s use of a simplified uniform age distribution function by comparing the nitrate concentration versus time plot for western Christchurch presented in Kreleger and Etheridge (2019) with an equivalent plot based on the Exponential Piston Model (EPM). The EPM is widely used by GNS (and isotope hydrologists internationally) to infer groundwater age distributions from age tracer samples, e.g. Stewart and van der Raaij (2019). These authors generally used an exponential fraction (f) of 0.7-0.75 in their recent investigation of Christchurch groundwater ages. Applying the EPM model
to the current measured and modelled steady state nitrate concentrations in western Christchurch and assuming: a) a mean residence time of 200 years; b) f = 0.75 and c) that high rates of nitrate leaching from the Christchurch aquifer recharge area north of the Waimakariri River began in 2000 (immediately after Waimakariri Irrigation Ltd scheme was commissioned) results in the nitrate concentration time series shown in the figure below. The results show:

a. A minimum groundwater age of 50 years and hence no breakthrough of the assumed post 2000 high nitrate leaching rate until 2050;

b. A lower median nitrate N concentration of 0.73 mg/L in 2068 compared to 1.2 mg/L in the Kreleger and Etheridge (2019) plot;

c. A slower overall rate of nitrate-N concentration increase;

d. A much longer time period before steady state conditions are approached.

![Figure x2](Image)

**Binary Mixing Model**

2.3. Stewart and van der Raaij (2019) used a Binary Mixing Model (BMM) to resolve disparities between tritium and 14C - based age interpretations. This model allows age tracer data to be interpreted as a mixture of a young fraction (derived from the secondary porosity component under the dual porosity conceptualisation described below) and an older fraction (sourced from the primary porosity under the dual porosity conceptualisation). Although the fraction and mean age of water derived from the primary and secondary porosity components cannot be resolved without multiple age tracer samples collected over an extended period, the implications of viable combinations of young and old fractions and mean ages (aka mean residence times) for the rate of nitrate increase in the Christchurch aquifer can be assessed.

2.4. Previous work (e.g. Dann et al., 2008)\(^2\) has found that a significant proportion of groundwater flow travels through open framework gravels associated with former river

---

channels and for this reason the Canterbury Plains aquifers are often conceptualised as a dual porosity system, with the relatively tight sand and silt-bound gravels (which make up the bulk of the aquifer volume) being conceptualised as a low permeability primary porosity continuum and the open framework gravels comprising a high permeability secondary porosity structure. It is possible that nitrate concentrations in the Christchurch aquifer could increase more quickly if open framework gravels provide a preferential flow path between the Waimakariri sub-region aquifer system and the Christchurch aquifer.

2.5. Based on this work by Dann et al. (2008) the BMM model has the potential to provide a better representation of the timing of the modelled nitrate concentration increase in the Christchurch aquifer than the EPM model.

2.6. By way of example, the 14C and tritium concentration testing results from a 120 m deep well in northern Christchurch (M35/1257) presented in Stewart and van der Raaij (2019) are consistent with the mean residence time (MRT) and young fraction components in the table below.

<table>
<thead>
<tr>
<th>MRT (old)</th>
<th>MRT (young)</th>
<th>F (young)</th>
</tr>
</thead>
<tbody>
<tr>
<td>300</td>
<td>38</td>
<td>0.36</td>
</tr>
<tr>
<td>600</td>
<td>108</td>
<td>0.80</td>
</tr>
<tr>
<td>900</td>
<td>119</td>
<td>0.89</td>
</tr>
<tr>
<td>1200</td>
<td>121</td>
<td>0.92</td>
</tr>
<tr>
<td>2000</td>
<td>127</td>
<td>0.96</td>
</tr>
</tbody>
</table>

Table x1. Possible combinations of old and young fractions and ages

2.7. Applying these MRT and young fraction (F) combinations in the three rows highlighted with bold italic text in the table above to the median model nitrate results for western Christchurch yields the results shown in the figure below. The results show:

a. An initially slightly faster rate of nitrate-N concentration increase in the first 100 years, but significantly slowing rate of increase in the years after that;

b. A slightly higher median nitrate-N concentration of 1.4 mg/L in 2068 compared to 1.2 mg/L in the Kreleger and Etheridge (2019) plot;

c. A much longer time period before steady state conditions are approached.

---

\[2463\] Data provided by Mike Stewart via email on 19/11/19
2.8. The figure below compares the three models (median results) in one graph. Both the EPM model and the BMM model estimate a much longer time period (hundreds of years longer) before the proposed nitrate concentration threshold of 3.8 mg/L for the deep aquifers in Christchurch will be exceeded.

2.9. The graph also shows that accounting for groundwater age distribution does not result in a considerably faster transport of nitrates to the deep aquifers of Christchurch than presented in Kreleger and Etheridge (2019). Although the BMM shows a slight increase in nitrate transport in the first 100 years, the difference is small (~0.2 mg/L) and insignificant considering the much faster exceedance of the threshold assessed by Kreleger and Etheridge (2019).
3. **Appendix D.3 – Model uncertainty**

**Summary**

3.1. Evaluation of modelling uncertainty was identified as a key issue for the Part C of PC7 technical work. This is extensively explained in Sections 8, 9 and 10 in Etheridge and Hanson (2019) and summarised in Sections 3.3 – 3.6 in Kreleger and Etheridge (2019).

3.2. For the groundwater model we have opted for a steady state model approach with a calibration-constrained Monte-Carlo modelling process to quantify numerical groundwater modelling uncertainty. This provided us eventually with a set of 165 steady state model realisations which explored the key areas of uncertainty in model input data sets and modelling assumptions. Although each of the 165 model realisations comprised different sets of hydraulic parameters, they were all consistent with field observations: they maintained an acceptable fit (or “calibration”) between measured data (groundwater levels, stream flows etc) and modelled values.

3.3. We used a formal expert judgement elicitation framework and statistical analysis to approximately quantify the uncertainty associated with OVERSEER®-based soil nitrate loss modelling.

3.4. Steady state nitrate transport modelling (using the OVERSEER®-based soil nitrate losses with the set of 165 steady state model realisations) showed a range of

- Possible transfer pathways,
- Possible groundwater recharge (or source) zones for each receptor and
- Steady state nitrate concentrations in each receptor.

3.5. This range, or stochastic modelling approach, reflects our uncertainty over the true recharge area and future nitrate concentrations for each receptor. It allows us to present the nitrate modelling results in terms of the percentage likelihood that the true value will be less than the modelled value. The 50th percentile is the middle point in the range of our modelling results: there is a 50% probability that the true nitrate concentration will be either lower or higher than the modelled value. For the 95th percentile model results there is a 95% probability that the true nitrate concentration will be lower or a 5% probability that the true nitrate concentration will be higher than the modelled value.

3.6. Using the more conservative 95th percentile model results to estimate the total long-term loss rate reduction will have limited water quality benefits compared to using the median (50th percentile) results, but the implementation costs are significantly higher due to land value impacts associated with specification of higher long-term nitrate loss rate reduction.

---

2464 This appendix was prepared by Amber Kreleger and Zeb Etheridge


2467 Steady state flow system assumes that the magnitude and direction of flow is constant with time throughout the entire model domain and that the hydraulic head (water level) doesn't change with time. The amount of water within the model domain remains the same and the amount of water that flows into the system, is the same amount as flows out.
requirements. Therefore, the Waimakariri Zone Committee recommended focussing on the 50th percentile model results for the Solution Package. Inclusion of the 5th and 95th percentile model results in our reporting and the associated loss rate reductions provides additional guidance for stakeholders on the possible nitrate loss reduction range that might be ultimately required so that due consideration can be given to this in long-term land use planning.

Uncertainty modelling method

3.7. Modelling was used to evaluate groundwater and surface water nitrate concentrations under steady-state conditions, i.e. when nitrate concentrations in these water bodies equilibrate with the loss rates from current land use. It was also used to assess nitrate concentrations under several alternative nitrate management scenarios. Evaluation of modelling uncertainty was identified as a key issue for the Part C of PC7 technical work. The three main components of modelled nitrate concentration uncertainty are (1) nitrate loss rates from the soil profile and (2) transfer pathways to receptors; and (3) dilution ratios between low nitrate sources (e.g. water race losses) and high nitrate sources (leaching from intensive agricultural land use).

(1) Soil profile nitrate loss rate modelling uncertainty

3.8. Etheridge et al. (2018a) assessed the uncertainty associated with OVERSEER®-based soil nitrate loss modelling through a study involving OVERSEER® experts from Ravensdown, Manaaki Whenua Landcare Research and Environment Canterbury. The study used a formal expert judgement elicitation framework (Sheffield Elicitation Framework, Oakley and O’Hagan, 2016) and statistical analysis to approximately quantify uncertainty around catchment-scale modelled nitrogen loss rates. The results showed uncertainty ranges of up to -50% to +60% around the modelled values for some land use and soil type combinations.

(2) + (3) Transfer pathway and dilution ratios modelling uncertainty

3.9. Hemmings et al. (2018a) and Etheridge and Hanson (2019) describe how a calibration-constrained Monte Carlo modelling process was used to quantify numerical groundwater modelling uncertainty. A detailed overview of the uncertainty analysis process is provided in Kreleger and Etheridge (2019). In summary the uncertainty analysis process provided a set of model realisations which explored the key areas of uncertainty in model input data sets and modelling assumptions whilst maintaining an acceptable fit (or “calibration”) between measured data (groundwater levels, stream flows etc) and modelled values. These model realisations comprised different sets of hydraulic parameters, all of which were consistent with field observations. Nitrate transport modelling undertaken with these parameter sets showed a range of possible transfer pathways and these equated to a range of possible recharge (or source) zones for each receptor. Because the different recharge zones encompassed different areas of land with differing nitrate loss rates the transport modelling results gave a range of steady state nitrate concentrations in each receptor. This range reflects our uncertainty over the true recharge area for each receptor.

3.10. The model realisations also incorporated a range of loss rates from low nitrate sources (principally the Waimakariri River, Eyre River and water race network) and variations in how

---

this “clean” water mixed with high nitrate water leaching from farmland. We refer to the ratio of low to high nitrate source water in a receptor as the dilution ratio. We constrained these dilution ratios by rejecting model realisations which gave unrealistically high or low ratios (based on analysis of water chemistry samples) and in some cases corrected the modelling results to resolve erroneous dilution ratios. Further details are provided in Kreleger and Etheridge (2019) and Etheridge and Hanson (2019).

3.11. The three uncertainty components (nitrate loss rates, transfer pathways and dilution ratios) were aggregated through Monte-Carlo simulations to generate probability distributions of nitrate concentrations under each modelling scenario for each receptor (e.g. spring-fed streams, community water supply wells).

Use of quantified uncertainty in decision-making

3.12. Environment Canterbury staff briefed the Waimakariri Water Zone Committee on how nitrate management recommendations could be made using the quantified nitrate concentration uncertainty data. Staff explained the trade-off between the likelihood of meeting a nitrate concentration target and the likelihood of causing an excessive economic impact on the farming community as follows:

a. Use of 95th percentile model nitrate concentration results would provide an upper end estimate of potential future nitrate concentrations and hence of the nitrate loss reductions required to meet the proposed nitrate targets. Given that the model results indicate that there is a 95% probability that the actual future concentration will be lower than this value, determination of the required nitrate loss reductions using this value would give a 95% probability that the targets would be achieved but would also equate to a 95% probability that the economic impact would be greater than that necessary to meet the target.

b. Use of 5th percentile results, conversely, would give only a 5% probability that the targets would be achieved but a 95% probability that the economic impact would not be greater than that necessary to meet the target.

3.13. By way of example, the 95th percentile modelling result for nitrate concentrations for Silverstream at Harpers Rd is 20.3 mg/L and the proposed target is 6.9 mg/L. A 66% reduction in nitrate loss rates would therefore be required from land within the Silverstream catchment to provide 95% confidence of meeting the target. But the actual steady state concentration could ultimately prove to be 13.8 mg/L (as per the median model result), in which case a 50% reduction would have been required. If the 95th percentile value had been used and land users in the catchment had then reduced loss rates by 66% rather than 50%, the lost rate reduction would be ~30% greater than was necessary to meet the target. Information presented Harris (2019) suggests that a greater area of land would need to convert from high intensity farming to a low intensity land use in order to achieve a greater nitrate loss rate reduction and hence the economic impact on farming would be much greater if the 95th percentile value was used.

3.14. Under the proposed plan rules the nitrate concentrations in surface and groundwater will be reviewed every ~10 years and the 10-yearly nitrate loss rate reduction requirements will be amended based on measured concentrations, trends and updated science information at that time. This means that use of the 95th percentile results to signal that a 66% loss rate reduction

2469 See point #13 on p32 and Sections 3.9.1 – 3.9.2 of the report
2470 See Section 7.2.1 of the report
is required, as in the Silverstream example, would be unlikely to translate into an overshoot of the implemented loss rate because loss rate reduction requirements would be updated via the 10 yearly reviews before any such overshoot could occur. The benefit of using the 95\textsuperscript{th} percentile results to estimate the total long-term loss rate reduction is therefore limited. The costs, on the other hand, may be significant due to land value impacts associated with specification of higher long-term nitrate loss rate reduction requirements in the Land and Water Regional Plan. Use of the median model results provides clear information to the stakeholders on the approximate loss rate reductions that may ultimately be required to meet the targets. Inclusion of the 5\textsuperscript{th} and 95\textsuperscript{th} percentile model results and the associated loss rate reductions in the technical reports issued with the Plan Notification provides additional guidance for stakeholders on the possible nitrate loss reduction range that might be ultimately required so that due consideration can be given to this in long-term land use planning.
4. Appendix D.4 – Reducing the nitrate targets with 30%

Reducing the nitrate concentration targets

4.1. Lowering the proposed nitrate concentration targets for groundwater receptors within the Waimakariri sub-region will consequently increase the required beyond Baseline GMP nitrate loss reductions for consented land use activities within the Nitrate Priority Area.

4.2. Kreleger and Etheridge (2019) presented the nitrate loss reductions required to meet the proposed nitrate targets. North Canterbury Fish and Game have requested a 30% reduction in the nitrate concentration targets in their submission. We have assessed what this would mean for the required nitrate loss reductions for consented land use activities.

Overall results

4.3. The table below gives a summary of how 30% lower nitrate concentration targets affect the number of beyond baseline GMP nitrate loss reduction stages required within the NPA.

<table>
<thead>
<tr>
<th>Required 10-year reduction stages</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7 to 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of receptors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ZIPA targets</td>
<td>9</td>
<td>5</td>
<td>13</td>
<td>5</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>30% reduced targets</td>
<td>4</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>15</td>
<td>6</td>
<td>3</td>
<td>6</td>
</tr>
</tbody>
</table>

*Stages calculated under the 50pct model results

4.4. Under the ZIPA Solution package a total of 11 receptors require more than two 10-year nitrate loss reductions stages in their recharge zones. With a 30% reduction in target concentrations a total of 32 receptors would need more than two 10-year nitrate loss reductions stages in their groundwater recharge zones. Furthermore, more than six reduction stages would be required for six of the receptors. Given that each 10-year reduction stage requires a 15% nitrate loss rate reduction from dairy farms, more than six stages equates to a loss rate reduction in excess of 100% which is unrealistic.

4.5. Based on these results it can also be concluded that it would take much longer to reach the targets, and in some cases, it may not be possible to meet the targets, if they were reduced 30%. Higher beyond GMP nitrate loss reduction rates, a change to the land use consenting requirements and a broader imposition of nitrate loss reductions might be required under this scenario.

Results for spring-fed streams

4.6. The five spring-fed streams that receive nitrate via their groundwater recharge zones within the NPA are Courtenay Stream, Cust Main Drain, Silverstream (Harpers Road), Silverstream (Island Road) and Ohoka Stream. Reducing their nitrate concentration limits in proposed table 8-5 with 30% will result in higher requirements for nitrate loss reductions in their groundwater

2471 Sections 5.4, 5.5 and 5.6 and Appendix 13
Recharge zones. The minimum amount of 10-year reduction stages will increase from two to four (Courtenay Stream and Silverstream), while Cust Main Drain and Ohoka Stream will never be able to reach these lower targets as they require more than six 10-year reduction stages. Given that each 10-year reduction stage requires a 15% nitrate loss rate reduction from dairy farms, more than six stages equates to a loss rate reduction in excess of 100% which is unrealistic.

**Results for private drinking water wells**

4.7. Lowering the nitrate limit with 30% (from 5.65 mg/L to 3.95 mg/L) will increase the required reduction stages in most of the Private Wells Supply Areas (PWSA) with two or more stages, which adds approximately 10-80 years to the time it takes to reach the reduced nitrate limit in these wells. Considering it takes generally between 50-120 years to reach the targets, this is an increase of 20% to more than 200%. Private wells in the areas of Ohoka, Swannanoa and Summerhill will never be able to reach these lower targets as they require more than six 10-year reduction stages. Given that each 10-year reduction stage requires a 15% nitrate loss rate reduction from dairy farms, more than six stages equates to a loss rate reduction in excess of 100% which is unrealistic.

**Results for WDC Community Supply Wells**

4.8. Lowering the nitrate limit with 30% (from 5.65 mg/L to 3.95 mg/L) will increase the required reduction stages for most of the WDC Community Supply Wells with three stages, which adds approximately 20-35 years to the time it takes to reach the reduced nitrate limit in these wells. Considering it takes generally between 75-120 years to reach the targets, this is an increase of 20-30%.

**Results for Christchurch deep aquifers**

4.9. Lowering the nitrate threshold for the Christchurch deep aquifers with 30% (from 3.8 mg/L to 2.7 mg/L) will increase the required reduction stages from one to three (West Christchurch) and from two to four (Central and East Christchurch). The time it takes to reach the limit will increase with 15-25 years, which is a very small difference compared to the large nitrate lag times for the Christchurch deep aquifers (hundreds to thousands of years).
5. Appendix D.5 – Waimakariri sub-region Groundwater Budgets and Allocation Limits - Zeb Etheridge

Groundwater budgets

5.1. Groundwater budgets and the effects of groundwater abstraction in the Waimakariri sub-region were evaluated in Etheridge and Wong (2018), extracts of which are provided below:

*Groundwater abstractions in the Eyre River, Cust and Ashley GAZs use approximately 45%, 20% and 35% of the total groundwater recharge in a dry year [2015]. Consented groundwater abstraction in the Cust GAZ currently stands at 35% of the allocation limit. If the full allocation limit was taken up, dry year groundwater abstraction could triple to 0.9 m³/s. This would represent around 55% of total groundwater recharge in a dry year. It suggests that although full uptake of the current allocation limit would probably reduce dry year flows in the spring-fed streams (principally the Cust Main Drain and its tributaries), some water would still be available to sustain flows.*

*Overall, the significant increase in groundwater abstraction in the Waimakariri zone (principally in the Eyre River GAZ) since 1999 has not caused significant widespread declines in groundwater levels across the zone. This is likely to be due to the mitigating effects of irrigation and stockwater race losses on groundwater abstraction. Irrigation race losses are equivalent to around 30% of dry year spring-fed stream baseflows in the Eyre River and Cust GAZs.*

5.2. This latter conclusion is supported by a comparison of Waimakariri sub-region spring fed stream flows in the 1997-99 and 2015-2017 droughts. The upstream reaches of Ohoka Stream dried-out in the former drought, which occurred before the Waimakariri Irrigation Ltd scheme was commissioned. Although flows in some of the top reaches of Ohoka Stream were low and locally may have ceased in the 2015-2017 drought, the impact of the drought on stream flows was much lower, despite the significant increase in groundwater allocation between 1999 and 2015 (see Etheridge and Wong [2018] for details).

5.3. This information, together with other water budget analysis presented in Etheridge and Wong (2018), indicates that the effects of groundwater abstraction on groundwater levels (and hence stream baseflows in the Waimakariri sub-region) have been significantly mitigated by irrigation race losses (and also from irrigation-induced recharge and seepage losses from inefficient irrigation), and will continue to be for as long as race loss leakage continues at its current high rate. This differs significantly from the Selwyn Zone (in which the Selwyn River Coes Ford site is located) because a) groundwater allocation here exceeds the allocation limit; b) groundwater abstraction is likely to comprise a higher proportion of the total groundwater budget in the Selwyn zone (which is related to point a); and c) the Central Plains irrigation scheme water is piped (and hence race losses do not offset the effects of groundwater abstraction).

Current allocation rates

5.4. Etheridge (2016) provides information on current groundwater allocation rates in the Waimakariri sub-region as shown in
5.5. Table 0-1 below. The possible range relates to uncertainty over the rate of stream depletion. The data show that with the exception of the Eyre River GAZ, none of the GAZs are fully allocated, even if there is no stream depletion (as per the CLWRP definition).

<table>
<thead>
<tr>
<th>Groundwater Zone</th>
<th>Proposed allocation limit (m³/year)</th>
<th>Dry year groundwater recharge (m³/year)</th>
<th>Allocation limit as a % of dry year recharge</th>
<th>Unallocated water (m³/s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ashley</td>
<td>29,400,000</td>
<td>154,841,760</td>
<td>49%</td>
<td>2.5</td>
</tr>
<tr>
<td>Cust</td>
<td>56,300,000</td>
<td>87,354,720</td>
<td>15%</td>
<td>2.4</td>
</tr>
<tr>
<td>Eyre River</td>
<td>99,070,000</td>
<td>151,057,440</td>
<td>8%</td>
<td>4.4</td>
</tr>
<tr>
<td>Kowai</td>
<td>17,400,000</td>
<td>87,354,720</td>
<td>15%</td>
<td>2.4</td>
</tr>
<tr>
<td>Loburn</td>
<td>40,800,000</td>
<td>154,841,760</td>
<td>49%</td>
<td>2.5</td>
</tr>
</tbody>
</table>

Proposed allocation limits

5.6. The proposed allocation limits for three of the GAZs are summarised in Error! Reference source not found. below together with the dry year groundwater recharge rate estimates provided in Etheridge and Wong (2018). The proposed allocation limits are presented as percentages of the modelled dry year recharge rate and calculated the unallocated water which will be left in the system in a dry year (2015) to discharge naturally as baseflows and offshore groundwater discharge. These data indicate the proposed allocation limits represent less than 50% of dry year recharge and that a reasonable volume of water is left unallocated to support natural baseflows.

<table>
<thead>
<tr>
<th>GAZ</th>
<th>Proposed allocation limit (m³/year)</th>
<th>Dry year groundwater recharge (m³/year)</th>
<th>Allocation limit as a % of dry year recharge</th>
<th>Unallocated water (m³/s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eyre River</td>
<td>75,330,000</td>
<td>154,841,760</td>
<td>49%</td>
<td>2.5</td>
</tr>
<tr>
<td>Cust</td>
<td>13,250,000</td>
<td>87,354,720</td>
<td>15%</td>
<td>2.4</td>
</tr>
<tr>
<td>Ashley</td>
<td>11,350,000</td>
<td>151,057,440</td>
<td>8%</td>
<td>4.4</td>
</tr>
</tbody>
</table>

Groundwater level trends and effects of improved irrigation efficiency

5.7. Etheridge and Wong (2018) concluded that flows in some of the spring-fed streams were declining at the time of the Waimakariri Current State reporting (undertaken in 2016) and that this was likely to be due to a combination of groundwater abstraction, dryer climatic conditions and (in the case of Silverstream) conversion of border dyke irrigation to more efficient spray-irrigation.

5.8. Etheridge (2019) presents the results of a groundwater modelling scenario (referred to as GMP) which simulated the effects of improved irrigation efficiency on stream baseflows. The model results showed significant flow declines in the Cust River and Cust Main Drain but no significant changes in the other spring-fed streams modelled. In regard to the other streams,
there is a structural error in model which resulted in an excessive rate of loss from the Waimakariri River to Silverstream (See Section 3.9.1 of Kreleger and Etheridge, 2019) and this is likely to have artificially maintained flow rates in Silverstream and potentially Ohoka during the GMP modelling scenario. Conceptually, Officers anticipate that flows in both waterbodies could decline as a result of continued improvements in irrigation efficiency.

**Summary**

**5.9.** Although groundwater allocation limits in the Waimakariri sub-region were not originally set at a level which protects stream baseflows during extended dry periods, the impacts of groundwater abstraction on stream baseflows in the Waimakariri sub-region have been much less than those in the Selwyn zone because:

a. The effects of groundwater abstraction on stream baseflows in Waimakariri sub-region are currently mitigated by race losses and have also been mitigated by inefficient irrigation; and

b. Groundwater on the Ashley, Cust, Kowai and Loburn Fan GAZs has not been fully allocated and dry year usage rates represent less than 50% of recharge in those years; this means that some water is still available to support baseflows.

**5.10.** This contrasts with the Selwyn zone where previous work indicated that 100% of dry year recharge is potentially being abstracted. Two other things need to be considered to determine whether the proposed allocation limits are suitably protective of stream baseflows:

**5.11.** Flows in some of the spring-fed streams were declining at the time of the Waimakariri Current State reporting (e.g. Etheridge and Wong, 2018). This is likely to be due to a combination of groundwater abstraction, dryer climatic conditions and (in the case of Silverstream) conversion of border dyke irrigation to more efficient spray-irrigation.

**5.12.** Flows in the Cust Main Drain, Ohoka Stream and Silverstream are likely to decline in response to improved irrigation efficiency.

**5.13.** Taking these things into account, the Waimakariri Water Zone Committee recommended that:

a. No more groundwater should be allocated in the Eyre River GAZ

b. The groundwater allocation limit in the remaining GAZs should be capped at current usage +10%

c. The GAZ boundaries should be expanded to accommodate holistic management of groundwater abstraction across the Waimakariri sub-region

d. Permitted groundwater usage should be investigated to ensure that the CLWRP limits are being complied with

e. Over-allocation of surface waters should be addressed through a suite of measures including swaps to water takes from the deep aquifer which do not deplete streams (as per the definition of a Low 150 day depletion effect in Schedule 9 of the CLWRP), restrictions on transfers, voluntary surrender of unused consents, aligning consent rates with usage records and reduction of consented take rates on renewal.

**5.14.** Recovery of groundwater allocation to a level below the currently allocated volume was not recommended.
6. Appendix D.6 – Updated Opihi catchment modelling in response to submissions

<table>
<thead>
<tr>
<th>Date</th>
<th>20/02/2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>To</td>
<td>Matthew McCallum-Clark</td>
</tr>
<tr>
<td>CC</td>
<td>Dan Clark</td>
</tr>
</tbody>
</table>

**Summary**

6.1. In response to submissions in the Orari-Temuka-Opihi-Pareora (OTOP) part of Plan Change 7 (PC7) I have updated the modelling used to evaluate the Opihi flow regimes. This update includes a lake storage component to represent Lake Opuha. The updated model has been used to evaluate the PC7 flow regimes and also the regime proposed by the Adaptive Management Working Group and other submitters. The key findings from this work are:

   a. The proposed AMWG flow regime results in lower Opihi River flows in most years but retains higher flow in the most extreme years.
   b. The regimes in PC7 result in higher water availability for shareholders during the full irrigation season.
   c. The regime proposed by the AMWG can result in higher lake levels and lower flows in the Opuha River.
   d. The AMWG regime could result in Level 1 restrictions occurring in 15 out of the 20 years modelled and Level 2 restrictions in 4 of the 20 years modelled
   e. The current flow regime in the Opuha/Opihi Catchment is already complex and difficult to monitor.
   f. The PC7 flow regime increases the complexity for monitoring compliance with the flow regime. The AMWG is significantly more complex again, making it difficult to be confident that it can be monitored for compliance.

**Introduction**

6.2. The Orari-Temuka-Opihi-Pareora (OTOP) zone committee recommended setting an adaptive management flow regime for the Opihi River. The recommendations did not explicitly describe the triggers or minimum flows which would make up this regime. Through the ZIP Addendum and Plan Change 7 (PC7) development process, Environment Canterbury evaluated different flow regime options to meet this recommendation. PC7 included flow regimes which were determined to meet these recommendations. This was assessed using a model of the rivers within the catchment, but did not model Lake Opuha and the management decisions of Opuha Water Limited (OWL).

**OWL scheme and share allocations**

6.3. OWL operates in a way that is different to many other irrigation schemes. The scheme uses the Opihi and Opuha Rivers to convey water to shareholders, and offsets minimum flow requirements of shareholders who do not physically receive scheme water.
6.4. The scheme is managed using a minimum flow located at Saleyards Bridge, which is fed by flow from the Upper Opihi, the Te Ana Wai and Opuha Rivers. At times when the Upper Opihi and Te Ana Wai Rivers provide more than enough water to maintain the minimum flow, water is stored in Opuha dam and less is released down the Opuha River. At times when the flow in the upper Opihi and Te Ana Wai rivers do not provide enough flow to meet the Saleyards Bridge minimum flow, water is released from storage down the Opuha River.

6.5. Many shareholders do not physically receive any water from the scheme, rather they purchase shares to ensure they receive more favourable minimum flow conditions and that OWL release stored water to maintain the minimum flow in the main stem of the Opihi River.

6.6. The shareholding arrangements in the Opihi catchment are very complex and the information provided to Environment Canterbury and the Zone Committee by OWL, the Adaptive Management Working Group (AMWG), and the Flow and Allocation Working Party (FAWP) have not described the share arrangements consistently.

6.7. The FAWP provided the following information to the OTOP Zone Committee in May 2018 on application depth and area.

6.8. Table 3). I have calculated the required volume and flow rate to meet the application depth and area.

<table>
<thead>
<tr>
<th>Sub catchment</th>
<th>Application rate (mm/ha/day)</th>
<th>Area</th>
<th>Volume required (m³/day)</th>
<th>Flow rate required (l/s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Opuha</td>
<td>2.5</td>
<td>2267</td>
<td>56675</td>
<td>656.0</td>
</tr>
<tr>
<td>Upper Opihi</td>
<td>3.7</td>
<td>1470</td>
<td>54390</td>
<td>629.5</td>
</tr>
<tr>
<td>Te Ana Wai</td>
<td>4.1</td>
<td>737</td>
<td>30217</td>
<td>349.7</td>
</tr>
</tbody>
</table>

6.10. The AMWG then provided the information in Figure 1 to the Zone Committee in October 2018. This figure details shared water entitlements to different parts and sub-catchments in the Opuha scheme. This shows the Upper Opihi as having 432 l/s of allocation held by OWL shareholders, compared to 629.5 l/s required to meet the application depth and area provided in the FAWP information. In the Te Ana Wai catchment the AMWG state that 280 l/s of shared water is allocated in the catchment, which is less that the 349/7 l/s in the FAWP information.

6.11. This highlights discrepancies in either how the share volumes and flow rates are accounted for or how they are reported. A major component of the AMWG flow regime is to allow OWL to have the ability and flexibility to self-manage. The complexity of the regime, shareholding agreements and discrepancies between share allocations, annual volumes and instantaneous rates of take pose a large risk to the ability to have confidence that any abstractor is compliant with the flow regime at a given time.
6.12. The OWL share entitlement website provides the following description of what a share entitles the holder to.

“For every 1 “Water” share held provides an entitlement to receive water (subject to reliability) at a standard flow rate of 0.41336 litres per second based on an application rate equivalent to 25mm of water per hectare per week and with a seasonal cap of 5,625 m$^3$ for each irrigation season.

This water entitlement is expected to be spread over the season running from September to May with a total seasonal volumetric allowance of 5625 m$^3$ per share (25mm x 1 share x 22.5 weeks).”

6.13. Using the application rates provided by the FAWP allowed the calculation of volumes required to provide full reliability of irrigation in different parts of the scheme. These data also allowed the estimation of the number of days at which shareholders could irrigate at their reported rate until they reached their seasonal volume set through their share entitlement. The calculated volume required to meet this application rate from October to April is shown in Table 4, as is the number of days that the share entitlement volume would allow irrigation at the stated rate before the entitlement is reached.

Table 4 Application rates from irrigators in parts of the Opihi catchment, with calculated volumes and irrigation season length

<table>
<thead>
<tr>
<th>Sub-catchment</th>
<th>Application rate (mm/ha/day)</th>
<th>Volume required to irrigate unrestricted (Oct to Apr) (m$^3$/ha)</th>
<th>Days of irrigation with stated application rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Opuha</td>
<td>2.5</td>
<td>5300</td>
<td>225</td>
</tr>
<tr>
<td>Upper Opihi</td>
<td>3.7</td>
<td>7844</td>
<td>152</td>
</tr>
</tbody>
</table>
6.14. This indicates that in the upper part of the Opuha Scheme the share entitlements are in excess of the volume to irrigate for the full irrigation season of October to April. Further down in the scheme and catchment the volumes of water are not sufficient to allow shareholders to irrigate at the rate presented by the FAWP for the full irrigation season. The FAWP did not present information on application rates in other parts of the catchment, but these are likely to be similar to or possibly higher than those in the Te Ana Wai. Currently, when consents are applied for from Environment Canterbury, they are given an annual volume to meet demand 9 years out of 10 (some older surface water consents were previously granted without annual volumes). The online tool “IrriCalc” is commonly used to calculate this volume. Using this tool to estimate annual volumes in the lower parts of the scheme indicated that seasonal demand would exceed the 5625 m³/ha of share entitlement.

6.15. As the seasonal volume required to allow irrigation at the described application depths is greater than share allocation in parts of the scheme, they will have reduced reliability of supply. This also poses great difficulty in modelling the abstraction. If other parts of the scheme irrigate using similar application rates as the upper Opihi and Te Ana Wai, the volume required to meet this demand would be more than the sum of the volumes entitled by the shares sold.

6.16. The sum of the 16000 ha of water shares sold is equivalent to a volume 90 million m³. The dam stores 65.5 million m³ at 100% full (391.2 m) and 71.8 million m³ at 109.6 % full (392.2 m). This shows that if all share water was provided from storage the lake would need to fill more than once a season, not accounting for the volume of water required to maintain minimum flows. Modelling completed by Aqualinc Research Limited (2008) indicated that the dependence on the inflows from foothill rivers poses a risk to water supply reliability in dry years, and that in some periods the inflows would be insufficient to fill the dam over winter.

Description of existing modelling used in ZIPA and draft plan

6.17. Modelling of flow regimes completed to inform the ZIPA and the notified PC7 is described in Clark (2019a and 2019b). The flow regimes for the Opihi River were evaluated using this model which accounted for the flow in the Opihi River and tributaries. The modelling approach on the tributaries was accepted throughout the ZIPA process and these results were used by the Zone Committee and working parties.

6.18. The model used did not include a lake component as this was considered to be controlled by OWL’s management decisions rather than by explicit rules. The assessments used in the ZIPA and draft of PC7 evaluated how frequently triggers would be met to allow OWL to change flow regimes and reduce the minimum flow requirement in the Opihi River.

Updated modelling description

6.19. Through the submission process some submitters queried the accuracy of the Environment Canterbury model, as it did not include a lake storage model and an alternative set of modelling results were provided by OWL during the Schedule 1 consultation period. This has led to Environment Canterbury updating the model of the Opihi/Opuha system. The model has also been updated to include data up until 2018.
6.20. The model has been updated to include a lake storage component, this came with challenges, particularly with modelling OWL management. The updated model is a series of excel spreadsheets which calculate a daily water balance for the Opuha dam, the Opihi River and its tributaries.

6.21. Modelling the lake required a daily water balance to be calculated in terms of volume stored in Lake Opuha. This was converted into a lake level each day to assess whether the triggers were met. Based on these triggers, the model determined which flow regime applied that day and therefore what flow was required to be met at Saleyards Bridge.

6.22. The model then looks at the flow provided by the Upper Opihi and Te Ana Wai to see how much shortfall needs to be met by stored water. This calculation also included the amount of water required to meet downstream abstraction and the minimum flow set in the Opuha River. From this model, time series of lake level and flows in each of the rivers are calculated daily.

6.23. The diagram in Figure 2 highlights the key components of the model and where the different parts of the model enter and exit the system.

Modelling Assumptions

6.24. To model the Opihi/Opuha system the following assumptions are included in the model:

   a. Abstractors take water whenever it is available
   b. Irrigators do not cease their take when they reach their seasonal share entitlement volume
   c. A buffer of 0.1 m³/s is maintained above the SYB flow
   d. Lake Opuha spills at 105% of storage
   e. The lake is managed to keep it as full as possible
   f. Lake area does not change. A constant area is used when calculating the direct precipitation and open water evaporation
   g. All allocation blocks are fully allocated
   h. Flow is routed from one model node to another without any losses or gains from groundwater
   i. Where there is missing flow data, the restrictions which applied the preceding day continue to apply.
   j. Water shortage directions do not occur in the model
   k. Flood buffering does not occur in the model
Flow regimes modelled

6.25. The following regimes have been modelled with the updated model:
   a. PC7 – Table 14(v) applies from January 2025
   b. PC7 Step 2 – Table 14(w) applies from January 2030
   c. AMWG regime included in their submission

Modelling results

6.26. The modelling of the flow regimes included in PC7 and the regime proposed by the AMWG in their submission has provided daily flow records in each of the rivers and also a time series of
abstraction. From these data sets, conclusions can be drawn about the likely impact of each of the flow regimes.

Availability results

6.27. Availability is a metric that is used to describe the reliability of supply of water for abstraction. Availability is calculated as the percentage of water available in a time period.

6.28. Table 5 show the summary of the availability for AA and BA abstractions under the flow regimes modelled. This represents the availability based in minimum flow at Saleyards Bridge and includes all the interactions between tributary minimum flow influencing flows and releases from the dam.

<table>
<thead>
<tr>
<th>Availability</th>
<th>PC7</th>
<th>PC7 Step 2</th>
<th>AMWG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean (full year)</td>
<td>96%</td>
<td>95%</td>
<td>94%</td>
</tr>
<tr>
<td>Mean (irrigation season)</td>
<td>96%</td>
<td>96%</td>
<td>93%</td>
</tr>
</tbody>
</table>

6.29. Across both an average year and irrigation season the AMWG regime results in less water being available for abstraction when compared to the PC7 flow regimes. Due to the seasonal volumes shareholders are entitled to from Opuha Water, many shareholders will be more restricted by their share entitlement than the availability due to either the PC7 or AMWG flow regimes. The availability of water varies across the year, due to a combination of minimum flows which apply and the triggering of changes to the flow regime. Figure 3 shows how availability varies across the year under each flow regime.
6.30. In spring and early summer, the flow regime submitted by the AMWG results in lower water availability for shareholders than the flow regimes included PC7. In January and February, the AMWG proposal provides 100% water availability for the modelled period, and similar availability to the PC7 regimes in March and April. This highlights the priority of pre-emptive measures in the AMWG regime which allows the flow regime to change early ‘just in case’ it gets dry later. This results in reductions in flows for the river and abstraction for shareholders but increases the volume of stored water. The availability for shareholders in the tributaries is lower than those on the mainstem due to them having two minimum flows, this is described later in this memo and in the Appendix.

Water balance results

6.31. The updated model provides daily flows in each of the tributaries and various points on the Opihi mainstem, and the level in Lake Opuha.

6.32. Table 6 shows key flow statistics for the flows in the Opihi at Saleyards Bridge. These statistics highlight that the AMWG results in reduced flows for most of the time to allow increased storage which provides some improvement at times of very low flow. This is shown by the mean and median flow being lower than the PC7 regimes while the 7dMALF is higher.

<table>
<thead>
<tr>
<th>Flow</th>
<th>PC7</th>
<th>PC7 Step 2</th>
<th>AMWG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean m$^3$/s</td>
<td>12.69</td>
<td>12.786</td>
<td>12.448</td>
</tr>
<tr>
<td>Median m$^3$/s</td>
<td>9.50</td>
<td>9.37</td>
<td>9.13</td>
</tr>
<tr>
<td>7dMALF m$^3$/s</td>
<td>5.36</td>
<td>5.33</td>
<td>5.60</td>
</tr>
</tbody>
</table>

6.33. As much of the flow at Saleyards Bridge is provided by flows from the Upper Opihi and Te Ana Wai, the statistics at this site are buffered by flows that are only partially influenced by the flow regime for the mainstem of the Opihi River.

6.34. To show the difference between the flow regimes the outflow from the dam is critical. This represents the water which is spilled from the dam to meet both shareholder abstraction and environmental flows. Table 7 shows a decrease in mean flow and 7dMALF from PC7 to the AMWG, but an increase in the median flows. The large reduction in 7dMALF is a combination of the increased frequency at which level 1 and level 2 restrictions reduce flow requirements, and the reduced minimum flow in the Opuha River proposed by the AMWG.

<table>
<thead>
<tr>
<th>Flow</th>
<th>PC7</th>
<th>PC7 Step 2</th>
<th>AMWG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean m$^3$/s</td>
<td>5.25</td>
<td>5.33</td>
<td>4.99</td>
</tr>
<tr>
<td>Median m$^3$/s</td>
<td>3.87</td>
<td>4.11</td>
<td>4.12</td>
</tr>
<tr>
<td>7dMALF m$^3$/s</td>
<td>2.81</td>
<td>2.62</td>
<td>1.90</td>
</tr>
</tbody>
</table>
6.35. The modelled lake level throughout the model period is shown in Figure 4. This shows that the AMWG results in Lake Opuha staying at a much higher level in almost all years. The PC7 regimes result in a lower level in most seasons, due to the increased releases from the dam.

![Figure 4 Lake level for the PC7 flow regimes and the regime in the AMWG submission (for the entire modelled record)](image)

6.36. The dry period which occurred from 2014 to 2017 was a critical time in the Opipi catchment with the dam going dry for the first time since its construction. This period has been modelled previously by the AMWG and presented to the Zone Committee. Figure 5 shows the lake level under each of the regimes. This shows a similar message to the modelling presented by the AMWG.

![Figure 5 Lake level for the PC7 flow regimes and the regime in the AMWG submission (for 2014 to 2017 seasons)](image)

6.37. PC7 and PC7 step 2 are modelled to still result in the lake going dry for some periods. The AMWG regime is modelled to maintain some water in the lake. The resulting flows at Saleyards
Bridge are shown in Figure 6 and the flows being released from the dam are shown in Figure 7. The lowest flows, seen in the PC7 regimes, occur at times when the lake is empty.

![SYB flow]

**Figure 6 Flows at Saleyards Bridge under for the PC7 flow regimes and the regime in the AMWG submission (for the 2014 to 2017 seasons)**

<table>
<thead>
<tr>
<th>PC7</th>
<th>PC7 Step 2</th>
<th>AMWG</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>12</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>14</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>16</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>18</td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PC7</th>
<th>PC7 Step 2</th>
<th>AMWG</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>12</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>14</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>16</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>18</td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

**Figure 7 Outflow from the Dam under for the PC7 flow regimes and the regime in the AMWG submission (for the 2014 to 2017 seasons)**

<table>
<thead>
<tr>
<th>PC7</th>
<th>PC7 Step 2</th>
<th>AMWG</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>12</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>14</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>16</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>18</td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

6.38. The modelled results show the flows being reduced earlier at both sites under the AMWG regime, but the lowest flows at Saleyards Bridge occurring under the PC7 regimes during short periods when the lake storage had been depleted. The outflow from the dam was consistently lower in periods of low lake level under the AMWG, reflecting the requested change to the Opuha River minimum flow in the AMWG submission.
6.39. Flow regimes apply in all conditions and it is important to look at other periods to evaluate how well a flow regime achieves the outcomes sought by the community. Figure 4 showed the impacts of the regimes on lake level throughout the model period but looking at the period of 2005 to 2007 also shows key differences between the regimes. The 2005 season had low inflow and snow storage, which triggered changes in the flow regime. In this season, Figure 8 shows how the lake would be maintained near to full under the AMWG regime, despite the low inflows. Figure 9 and Figure 10 show how the flows at Saleyards Bridge and out of the dam are lower with the AMWG flow regime than those under PC7. This period highlights how the AMWG would result in restrictions and reduced river flows at times when the lake is full.

6.40. The period 2005 to 2007 highlights that under the AMWG the lake can be maintained near to full all season by having lower river flows. Both PC7 regimes reduce the lake level over the summer to maintain higher river flows.

Figure 8 Lake level for the PC7 flow regimes and the regime in the AMWG submission (for the 2005 to 2007 seasons)
6.41. The model results show that the AMWG regime results in higher lake levels than under the PC7 flow regimes. To maintain these high lake levels, outflows are reduced much earlier. This reduction in flow could be triggered in years which are not considered to be extreme dry years and therefore would result in lower SYB flows and outflows from the dam under normal climate conditions. The AMWG regime goes into Level 1 restrictions in 15 out of the 20 years modelled and Level 2 restrictions in 4 of the 20 years modelled. In very extreme years this maintains storage which can be used for irrigation and to maintain flow. This highlights the trade-off occurring in the AMWG regime; flows are reduced much earlier in ‘average’ years to provide protection of lake levels during the most extreme years.
6.42. The regime submitted by the AMWG aims to set planning rules which maintain the lake at a much higher level than under the PC7 regimes. This will prevent the lake from going dry in periods such as the 2014 to 2017 seasons, which OWL has publicly stated was anticipated. The AMWG regime results in water storage in the lake being prioritised overflows in the river and water availability for abstractors.

Artificial freshes

6.43. The AMWG requested the rule regarding artificial freshes is changed to the following:

Small artificial fresh means the voluntary release of 300,000 m$^3$ measured over a 24-hour period at the Opuha Dam Downstream Weir as volume released above the pre-fresh 24-hour average flow.

6.44. In Measures (2019) small artificial freshes are described as ‘operational’ and are useful for clearing didymo in the Opuha Gorge, that would cause blockages in the intake of the Kakahu scheme, rather than for being of any environmental benefit. He describes these freshes as having limited effectiveness for periphyton removal downstream of Skipton Bridge in the Opuha and almost no influence on the Opihi.

6.45. The requested definition relies on the interpretation of voluntary. The volume in the definition is equivalent to increasing the flow by 3.5 m$^3$/s above the pre-fresh flow. The modelling allows calculation of how frequently these conditions would trigger.

6.46. This occurs many times during the modelled period. This can occur when changing between Level 1 or 2 flow regimes, when changing between monthly flow requirements, due to irrigation demands resulting in more water being released from the dam or even following high flows in the Upper Opihi or Te Ana Wai which allow the dam to release less for the period of high flows.

6.47. PC7 already allows OWL to recoup volumes for small operation freshes, which are not for environmental purposes. The proposed change to the artificial fresh description has the potential to allow OWL to recoup volume for changes in flow which occur as part of the day to day operations or changes in natural flow. Retaining a threshold in terms of flow in m$^3$/s would help to ensure any volume recouped was for a fresh and not rely on the interpretation of the term voluntary to protect from other changes in flow being allowed to be recouped by OWL. Any recouped volume would be achieved by reduced flows following the fresh.

Practicability of the flow regimes

6.48. The Opihi/ Opuha system is already complex. The regime in the ORRP already poses difficulty for monitoring compliance, particularly with the use of Water Shortage Directions allowing OWL to operate outside the plan rules. The recommendations from the zone committee to include an Adaptive Management Regime for the Opihi River will always lead to a complex regime. Therefore, the balance must be found between a regime which allows for all eventualities and climatic conditions, and a regime that Environment Canterbury can confidently monitor. It is the statutory requirement of Environment Canterbury to monitor flow regimes for compliance and a regime that is included in the plan must be monitorable.

6.49. The flow regimes included in PC7 were designed to strike the balance between flexibility and certainty. The flow regimes in PC7 are more complicated than any other flow regime in
Canterbury and will require significant changes to Environment Canterbury’s low flow and irrigation monitoring systems. This has already been deemed to be aspirational. The regime proposed by the AMWG submission increases the complexity greatly when compared to either the current regime or the regimes in PC7. The key issues relate to timing of assessments and periods during which restrictions apply.

6.50. An example of the increased complexity is that the AMWG regime assesses triggers daily, with the justification for this being that the situation can change rapidly. But when the regime changes to Level 1 or 2 minimum flows, OWL remain in that regime for at least 14 days regardless of whether the situation improves. The shareholding arrangements and uncertainty associated with the accounting of these (described earlier in this memo) increases the risk to monitoring the flow regimes in the Opihi.

6.51. Environment Canterbury has less certainty that the AMWG flow regime can be monitored effectively and that we will be able to ensure consent holders are compliant with the plan rules.

**Tributary abstractions and minimum flows**

6.52. The ORRP set a requirement for abstractors in the tributaries to have tributary specific minimum flows but also a minimum flow on the main stem of the Opihi River. The minimum flow that consents get on the Opihi mainstem is based on when consents were granted and whether the consent holder also held shares in OWL. When the ORRP was developed it did not set what the minimum flows should be for each tributary but stipulated that they needed to be set.

6.53. Over time, minimum flows have been set for the tributaries through consenting processes and through PC7 these have been updated and made consistent between consent holders in each catchment.

6.54. When describing the operation of the Opuha scheme, and particularly the monitoring of low flows at Saleyards Bridge, Measures (2019) states: “One effect of having the minimum flow specified at this location is that during periods of naturally higher flows in the Opihi, less water is required to be released from the Dam, actively working to flat line the river downstream”

6.55. Retaining the mainstem minimum flow for tributary abstractors locks these abstractors into their current shareholding agreements and reduces the water availability that they would have if they only had a tributary minimum flow. The updated modelling indicates that shareholders in the tributaries received lower water availability, in every month except January, under the AMWG flow regime than under either step in the flow regime proposed in PC7 (availability plots are shown in the Appendix).

**Transfer of water entitlements**

6.56. TDC and Opuha Water seek amendment to recognise that shares in OWL are not the only means by which consent holders can be supplied water in the Opihi FMU. OWL identify that permits have historically been granted by Environment Canterbury to parties who hold an entitlement by way of “shares, agreements or other entitlement”.

6.57. These submissions highlight the complexity with prioritising OWL shareholders while they use the river for conveyance. Leasing or trading shares to different parts of the scheme changes
the relationships between differing parts of the scheme. Leasing shares or entitlements which are associated with community supplies to irrigators also pose a complex challenge. TDCs consents are granted for community supply and under PC7 are not subject to minimum flow. As allocation is based on the sum of the shared allocation there is a risk if TDC lease their shares to a non-shareholding irrigator, as they may not fit within the allocation limit and if the allocation block size changes, the point at which partial restrictions starts should also change.

6.58. To comply with the allocations set, water could only be leased to AN abstractors within the same sub-catchment as they are in the same allocation block. Leasing water from outside a sub-catchment to BN abstractors would convert them to BA which would breach the A allocation limit and result in the partial restrictions no longer protecting the minimum flow. Environment Canterbury is required to set limits, and in doing this must ensure that these do not get breached by sale or trading of “shares, agreements or other entitlement”. To allow this trading could allow the allocation limits to be breached. If headroom is created in the allocation block to allow for it, this would reduce the water availability for all other abstractors within that block as partial restrictions would need to start earlier.

A possible alternative regime

6.59. After consideration of the intention / aims of the AWMG submission, an alternative to the PC7 regime which would increase the adaptability, while still maintaining a regime which can be monitored would be to include monthly variable lake level into the PC7 triggers. Using the lake level data provided by OWL, the 20th percentile for each month has been used to set the Level 1 and the 5th percentile for Level 2. These thresholds are shown in Table 8. This evaluation used the 2025 PC7 minimum flows and the same method could be applied to the 2030 minimum flows if this is found to be the preferred approach.

<table>
<thead>
<tr>
<th>Lake Level</th>
<th>Level 1</th>
<th>Level 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>387.5</td>
<td>380.1</td>
</tr>
<tr>
<td>February</td>
<td>388.3</td>
<td>375.1</td>
</tr>
<tr>
<td>March</td>
<td>386.3</td>
<td>371.8</td>
</tr>
<tr>
<td>April</td>
<td>382.6</td>
<td>373.9</td>
</tr>
<tr>
<td>May</td>
<td>381.1</td>
<td>374.4</td>
</tr>
<tr>
<td>June</td>
<td>383.0</td>
<td>374.3</td>
</tr>
<tr>
<td>July</td>
<td>384.5</td>
<td>375.7</td>
</tr>
<tr>
<td>August</td>
<td>387.5</td>
<td>379.6</td>
</tr>
<tr>
<td>September</td>
<td>387.9</td>
<td>380.8</td>
</tr>
<tr>
<td>October</td>
<td>389.0</td>
<td>381.5</td>
</tr>
<tr>
<td>November</td>
<td>389.3</td>
<td>385.8</td>
</tr>
<tr>
<td>December</td>
<td>388.5</td>
<td>383.5</td>
</tr>
</tbody>
</table>

6.61. The addition of the variable lake level triggers results in the availability and flows shown in Table 10. The flows in Table 10 are generally between those under the PC7 and AMWG regimes, with a much higher 7dMALF than under the AMWG regime.

6.62. Table 10 and
6.63. Table 9. These tables show availability under the PC7 with monthly variable lake triggers is very similar to that under Step 2 of the notified PC7 regime (which applies from 2030), with higher availability over an irrigation season than the AMWG proposal. The results of the model on lake level are shown in Figure 11.

**Table 9 Availability summary for PC7 with monthly variable lake triggers**

<table>
<thead>
<tr>
<th>Availability</th>
<th>Opihi Saleyards</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AA +BA</td>
</tr>
<tr>
<td>January</td>
<td>91%</td>
</tr>
<tr>
<td>February</td>
<td>97%</td>
</tr>
<tr>
<td>March</td>
<td>97%</td>
</tr>
<tr>
<td>April</td>
<td>97%</td>
</tr>
<tr>
<td>May</td>
<td>100%</td>
</tr>
<tr>
<td>June</td>
<td>95%</td>
</tr>
<tr>
<td>July</td>
<td>97%</td>
</tr>
<tr>
<td>August</td>
<td>97%</td>
</tr>
<tr>
<td>September</td>
<td>96%</td>
</tr>
<tr>
<td>October</td>
<td>96%</td>
</tr>
<tr>
<td>November</td>
<td>92%</td>
</tr>
<tr>
<td>December</td>
<td>91%</td>
</tr>
<tr>
<td>Mean (full year)</td>
<td>96%</td>
</tr>
<tr>
<td>Mean (irrigation season)</td>
<td>95%</td>
</tr>
</tbody>
</table>

6.64. The flows in Table 10 are generally between those under the PC7 and AMWG regimes, with a much higher 7dMALF than under the AMWG regime.

**Table 10 Summary of flows from PC7 with monthly varying lake triggers**

<table>
<thead>
<tr>
<th>Flow</th>
<th>Outflow from Dam</th>
<th>SYB flow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean m3/s</td>
<td>5.24</td>
<td>12.687</td>
</tr>
<tr>
<td>Median m3/s</td>
<td>3.87</td>
<td>9.53</td>
</tr>
<tr>
<td>7dMALF m3/s</td>
<td>2.62</td>
<td>5.33</td>
</tr>
</tbody>
</table>
6.65. The addition of a monthly varying lake level trigger increases the adaptability of the regime. It does not prevent the lake from going dry in the most extreme year modelled. The modelling results (in Figure 12) indicate that under this regime the lake would be dry for 44 days in the 2015 to 2016 season.

6.66. The resulting flows from the dam and at Saleyards Bridge for the 2014 to 2017 period are shown in Figure 13 and Figure 14. These show with the addition of monthly variable lake level triggers, the flows in the Opuha and Opihi rivers reduce earlier when entering a dry period, when compared to PC7.
6.67. The addition of monthly varying lake level triggers to the PC7 regime results in earlier reductions in flows but maintains flow for longer than the notified PC7 regime. This may provide a compromise toward increased adaptability, while maintain the certainty required of Environment Canterbury in its role as the regulator.
References


Measures, R. (2019) Including variability within the minimum flow regime for the Opuha and Opihi Rivers. NIWA client report no: 2019109CH
Appendix

Availability for tributary abstractors who hold OWL shares.

North Opuha Availability

South Opuha Availability