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To: Mailroom Mailbox
Cc: Sue Isitt; "Emily Moore"
Subject: Submission on Plan Change 7- Canterbury LWRP
Date: Wednesday, 11 September 2019 12:28:50 PM

Please see attached submission from the Water and Wildlife Habitat Trust for your consideration.

Thanks

Mike Patchett

11/9/19 V4

Submission on the PROPOSED PLAN CHANGE 7 to the Canterbury Land and Water Regional Plan

Prepared under the Resource Management Act 1991

To: Environment Canterbury
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This is a submission on the proposed Plan Change 7 "PC7" (as notified on 20 July 2019) of the Canterbury Land and Water Regional Plan (CLWRP).

Trade Competition
Pursuant to Clause 6 of Schedule 1 of the Resource Management Act 1991, the Water and Wildlife Habitat Trust confirm it could not gain an advantage in trade competition through this submission.

Hearing
The Water and Wildlife Habitat Trust requests to be heard in support of this submission.

Introduction

The Water and Wildlife Habitat Trust (WWHT) has a mission of conserving, rehabilitating and sustainably managing freshwater ecosystems and wildlife, our kaitiakitanga. Today we see many waterways that are no longer swimmable and whose aquatic life and fish stocks are depleted and struggling. The quality of life for our future generations is being compromised. The WWHT is contributing to restore healthy waterways through its current project on Snake Creek in the Selwyn/Waihora catchment. It is a successful, yet tiny restoration effort given the task at hand. This is a very important catchment at a national scale as it flows into Te Waihora. The WWHT advocates a catchment and lake scale restoration program planned and funded over the next 10 years.

The WWHT appreciates and supports the collaborative journey of the Canterbury Land & Water Regional Plan. Achieving the desired *Freshwater Outcomes* will require more reason and will and a new innovative capacity building scheme.

Plan Change 7 is a proposed plan change to the Canterbury Land & Water Regional Plan (CLWRP). The CLWRP sets out the planning framework for the management of land and water resources in Canterbury and for implementing the Canterbury Water Management Strategy to improve freshwater outcomes throughout the region.

The Government's recent release of the discussion document on national direction for freshwater and the pending National Policy Statement for Freshwater Management and National Environmental Standards for Freshwater, due by early 2020, may have a significant effect on the CLWRP. Consequently, finalising the CLWRP should follow and take account of the national freshwater policies.

Cause for Concern

At a national scale, Environment Aotearoa reports alarming environmental degradation, serious loss of aquatic wildlife and public use and enjoyment of our waterways, including:

- 90 % of our wetlands have been modified or drained for development and farming;
- 76 % of our native freshwater fish are threatened with extinction;
- 31 % of our freshwater plants, and
- 26 % of our freshwater invertebrates are threatened or at risk of extinction;
- 82% of waterways on farmland are unsafe for swimming;
- 95% of Canterbury's groundwater monitoring wells have nitrate levels worse or no better than 10 years ago and 7% exceed national drinking water standards.

This is a sad indictment on our NZ community and governance, lacking reason and will.

The 69% increase in the national dairy herd in the past two decades and up to 500% in Canterbury, currently at 1.3 million cows is considered the major contributor to our unhealthy waterways and increasing threats to its wildlife. Changing consumer preferences for plant-based protein and liquids, social intolerance of polluting industries and abatement of greenhouse gas emissions is expected to change land use patterns in Canterbury over the next 10-20 years.

For Canterbury, the expansive conversion of native vegetation and landscapes to farming since colonial settlement in 1850's and subsequent land use changes and intensification in farming over the past 30 years has severely reduced and degraded the natural areas, wetlands and waterways. Groundwaters and associated drinking water supplies are seriously contaminated with nitrates and E Coli. This contaminated groundwater supplies communities, spring fed wetlands, lakes and streams. The risk of increasing stress on biodiversity, degradation of wetlands and waterways and threats to public health is high. A changing climate with increasing droughts, lower river flows and

extreme weather events will increase these risks and require adaptation. Our current land-uses and farming practices are unsustainable and drivers for market change are currently weak. A business as usual remedy will fail us. Market failure in farming must be addressed with increased government regulation and societal change. Perceived private property rights, the externalities of environmental pollution and our failures to meet the statutory duty of care for the environment need to be challenged and transformed to a sustainable future.

The Remedy

The proposed improvements to the LWRP below are supported in principal yet need to be strengthened to achieve our desired *Freshwater Outcomes*. The proposed LWRP changes address better regional land and water management including:

1. Improving our desired Freshwater Outcomes;
2. Greater recognition of Ngai Tahu values, such as mahinga kai, and protection of sites of significance to Ngāi Tahu, including wāhi tapu (sacred sites), wāhi taonga (treasured sites), tuhituhi o neherā (limestone rock art sites) and waipuna (springs);
3. Protecting habitats of indigenous freshwater species;
4. The addition of new salmon spawning sites;
5. New water quality limits for ground and surface waters;
6. Capping water allocations to industry and other users;
7. Increases in minimum flows in streams and rivers; and
8. Increase regulation of farming practices through reducing nitrogen losses, stock exclusions in waterways and farm environmental planning and performance.
9. ADD - Protecting and restoring wetlands and riparian zones along waterways.

A more sustainable outcome is anticipated, however, there remains a need for greater drivers of change if the desired *Freshwater Outcomes* are to be achieved within the next 10-15 years and we have healthy waterways in Canterbury within a generation. The improvements in the LWRP recommended by WWHT aim to strengthen these drivers to increase our chances of success. Further, the past and present multitude of small scale low funded waterways restoration works on public and private land is insufficient to achieve the desired *Freshwater Outcomes* of our community. There is a need for catchment scale action plans with large scale resourcing mechanisms, coordinated and collaborative capacity building and implementation and performance monitoring, evaluation and reporting.

Environmental Duty

A fundamental element in building social capital for sustainable management of our natural resources and environment in Canterbury is everyone understanding and implementing a duty to care for the environment. The Resource Management Act (RMA) makes provision for this duty that applies to all of us.

Section 17 of the RMA outlines the 'Duty to avoid, remedy, or mitigate adverse effects' as follows:

> *(1) Every person has a duty to avoid, remedy, or mitigate any adverse effect on the environment arising from an activity carried on by or on behalf of the person, whether or not the activity is carried on in accordance with—*
>
> *(a) any of sections 10, 10A, 10B, and 20A; or*
>
> *(b) a national environmental standard, a rule, a resource consent, or a designation.*
>
> *(2) The duty referred to in subsection (1) is not of itself enforceable against any person, and no person is liable to any other person for a breach of that duty.*

(3) Notwithstanding subsection (2), an enforcement order or abatement notice may be made or served under Part 12 to—

(a) require a person to cease, or prohibit a person from commencing, anything that, in the opinion of the Environment Court or an enforcement officer, is or is likely to be noxious, dangerous, offensive, or objectionable to such an extent that it has or is likely to have an adverse effect on the environment; or

(b) require a person to do something that, in the opinion of the Environment Court or an enforcement officer, is necessary in order to avoid, remedy, or mitigate any actual or likely adverse effect on the environment caused by, or on behalf of, that person.

(4) Subsection (3) is subject to section 319(2) (which specifies when an Environment Court shall not make an enforcement order).

The environmental duty of care for the landscapes and waterways of Canterbury needs to be articulated in the LWRP or E-Can guidelines that reflects a combination of Maori and Pakeha societal values of the environment. Building knowledge and understanding of this duty and how it can be met in farming and other land-uses will be critical to halting and reversing the adverse effects on the environmental values of our landscapes and waterways. Competent farm environmental planning and implementation is a way of demonstrating this duty.

Improving freshwater outcomes for Canterbury

To halt and reverse the declining trends in water quality, river flows, ecological health and public safety of our surface and underground waterways is a huge challenge for the whole community. Our desired Freshwater Outcomes must be bold as the risk of not achieving even those proposed is real. While the proposed outcome for mahinga kai species is supported there needs an outcome for indigenous freshwater species important to the whole community.

Recommended Improvements:

Note: These recommended improvements are new text below or added text in red to extracts from the Plan Change 7 document.

Importantly, the is a need for more certainty in understanding and implementing the LWRP. This can be achieved in part by defining key terms used in the LWRP, including:

1. “Actual and potential adverse environmental effects”, including “damage”
2. “Ecological significance”
3. “Wetland”
4. “Bank” of a river or stream
5. “values” of the Indigenous Freshwater Species Habitat, wetland etc

A new declaration for Ecological Restoration Areas should be created for whole catchments to enable catchment scale healthy waterways plans to be developed and implemented, e.g. Te Waihora catchment is considered a national priority and would be a good case for such a plan.

In Table 1a Freshwater Outcomes for Canterbury Rivers:

1. Hill fed Lower – Urban 4.0 QMCI score be deleted and replaced with 5.0 QMCI.
2. Specify in Suitability for Contact Recreation “good to fair” for all management units with “no set value”, including spring fed plains.
3. Specify in Suitability for Contact Recreation “good” for all management units with “good to fair”

4. Specify in Suitability for Contact Recreation "good to fair" for all management units with "fair".
5. Adjust the corresponding E. coli values.
6. Add a Societal Attribute - Indigenous freshwater species, as listed, are sufficiently abundant to support healthy waterways equivalent to 1990 levels of abundance and diversity.
7. Add – At least 3% of a catchment area will protected and restoration wetlands.

Table 1b Freshwater Outcomes for Canterbury Lakes:

Specify in Suitability for Contact Recreation "good" for management unit Coastal lakes with corresponding E. coli values.

For table 1a and 1b change "Freshwater mahinga kai species sufficiently abundant for moderate customary gathering, water quality is suitable for their safe harvesting, and they are safe to eat".

Note: this proposed Outcome needs to be measurable. We need to quantify level of customary gathering at specified sites to provide a measure of abundance, e.g. catch per unit effort or reference to 1990 species abundance data. Otherwise this proposed Outcome could be satisfied with very low levels of gathering or not be measurable at all.

Add a Societal Attribute - Indigenous freshwater species, as listed, are sufficiently abundant to support healthy waterways equivalent to 1990 levels of diversity and abundance.

Catchment/ River specific Freshwater Outcomes, e.g. Waimakariri, should at least match or better the recommended regional Freshwater Outcomes.

Enabling consideration of Ngāi Tahu values in relation to a broader range of activities

The WWHT is respectful of Ngai Tahu culture and values, particularly belief in Te Koiora as the life and life-sustaining capacity of individual freshwater plants, animals and ecosystems; the concept of mauri being the interconnectedness, resilience, wellbeing and intrinsic value of nature; and importantly, Kaitiakitanga being the obligation to nurture and care for the mauri of a taonga; the ethic of guardianship, protection of that which is highly valued.

The proposals to recognise, map and better protect habitat of indigenous freshwater species and mahinga kai is supported. However, environmental stewardship obligations on private landholders and farmers need to be strengthened through education, capacity building and regulation.

Spiritual and cultural community values and places need mapping and regulatory protection and restoration via the farm environmental planning regime and a new catchment scale restoration planning and implementation framework.

In Section 4 Region wide Policies and Section 5 Region wide rules, there is a need to add provisions for the identification, mapping and protection of habitat of indigenous freshwater species, including mahinga kai.

Protecting habitats of indigenous freshwater species

Protecting these habitats would require:

1. Reduced nutrient, sediment and pathogen pollution of waterways and maintenance of low, medium and high river ecological health flows.
2. Identify, map and protect key habitats for breeding, feeding and shelter;
3. Habitat restoration and legal protection on private and public lands;
4. Catchment scale waterways and wetlands protection and restoration action plans and supporting resources;
5. Secure waterways and wetland protection zones, including connected riparian areas, via covenants on private land title and district planning zones on public land;

6. Specific regulation of sport/exotic fish stocking of priority streams with indigenous freshwater species habitat;

All E-Can mapped wetlands on private and public land should be protected, i.e. any application to drain, divert or otherwise adversely affect an existing mapped wetland should be unacceptable and not permitted, unless adequately offset like for like and multiplied. Existing farmlands mapped as wetlands should be retired from farming production and managed for sediment and nutrient treatment and ecological restoration of the wider landscape. All farm environmental plans should map land drainage/overland flow paths and connecting wetlands and plan stock exclusion and native revegetation.

Offsetting adverse effects

The L&WR Plan makes provision for offsetting adverse effects on environmental values such as wetlands, waterways and habitat for indigenous freshwater species. While protection of these habitats is a must, the allowance for offsetting acceptable adverse effects should be a last resort, competent, secure and governed by a clear Offsets Policy statement with prescribed multipliers of 5 or more times the affected habitat for habitat replacement, depending upon the ecological health and condition of the replacement habitat and measures for its restoration and ongoing protection.

E-Can does not have a clear policy or guidelines on how acceptable offsets apply and can be determined and maintained. It is therefore recommended that E-Can review and strengthen its administration of offset provisions to generate a net gain in similar habitat area, biodiversity and condition and to secure this habitat in some form of legal protected area. This habitat should include the banks and riparian zones along the waterways.

4.61 A if the application is to take water for a community water supply and the take would reduce the area or adversely affect (delete compromise) the values of the Indigenous Freshwater Species Habitat, allow any significant adverse effects on that habitat to be offset by the creation of (delete new) compensatory habitat in the same surface water catchment and with the same or improved habitat characteristics and area, in accordance with a E-Can Offsets policy.

Habitat of Indigenous Freshwater Species
4.101 Avoid the damage or loss of Indigenous Freshwater Species Habitat caused by sediment and nutrient discharges, vegetation clearance, excavation and deposition of material, or other disturbance in a surface water body, unless:
a. the effects of habitat damage will be remedied or mitigated; or
b. the habitat loss and degradation will be offset by the creation and protection of similar habitat in the same surface water catchment and with the same or improved habitat characteristics add- in accordance with an E-Can Offsets policy.
The mapped habitats of indigenous freshwater species are supported and should be expanded.

Wetlands
5.161
Add – E-Can mapped wetlands shall be used to delineate wetland location and boundaries for protection.
Add – the drainage, diversion damming or other physical works that may adversely affect an existing mapped wetland on private land used for agricultural production is prohibited.
Reducing the area of a wetland for the operation, maintenance or repair of existing infrastructure or construction of new infrastructure for transport, electricity or water distribution or reticulation, including vegetation clearance and earthworks and the taking, use, damming or diversion (including draining) of water and the associated discharge of any water onto land or into a river, lake, artificial watercourse or wetland is a restricted discretionary activity.

The exercise of discretion is restricted to the following matters:
1. The practicality of avoiding the wetland, including alternative routes or methods; and
2. The ecological significance of the wetland, and the actual and potential adverse effects on the significant values of the wetland; and
4. the practicality and likelihood of success of any proposed mitigation and/or restoration measures;
3. Any acceptable off-setting of any actual and potential adverse effects add- in accordance with an E-Can Offsets policy.; and
4. The magnitude and proportion of reduction in area of the wetland.; and
5. Any adverse effects on Ngāi Tahu values or on sites of significance to Ngāi Tahu, including wāhi tapu and wāhi taonga.

Improving Farm Environmental Planning and Performance

Requirements for farms to further reduce nitrogen losses over time

Market failures need increased regulation and incentives for accelerated improvements in nutrient management, stocking rates and movement management, land drainage, fertilizer use, erosion and sediment control and contaminated surface water treatment. It is recommended that:

1. Increase proposed % N reductions by 30%.
2. Require 100% A rating farm audits by 2025.
3. Effective compliance monitoring and enforcement is programmed and well resourced.

Requirements to exclude stock from a broader range of waterbodies.

The exclusion of stock from a wider range of waterbodies is supported. There is a need to add wetlands and connected wet land to waterways and spring heads and require fencing off (at least 5 m either side of waterway) and native revegetation with possibly some controlled grazing only for weed control purposes. The Lees Valley should be included in these stock exclusions given past damage to spring fed springs.

On farm wetlands should be mapped using E-Can's wetland mapping and more detailed on-farm overland stormwater flow/drainage mapping should be a basic aspect of farm environmental planning.

Livestock Exclusion from Water Bodies

4.31 Damage to the bed or banks of water bodies, sedimentation and disturbance of the water body, direct discharge of contaminants, and degradation of aquatic ecosystems and inanga and salmon and trout spawning habitat and Indigenous Freshwater Species Habitat is avoided by:
a. excluding intensively farmed stock from lakes, rivers, streams, farm drains and wetlands; and
b. excluding stock from within freshwater bathing sites listed in Schedule 6, salmon and trout spawning sites listed in Schedule 17, Community Drinking-water Protection Zones for surface water takes as set out in Schedule 1, other sensitive water body areas; and the water body bed and banks and riparian zones closely adjacent to and upstream of these areas; and
ba. excluding stock from inanga spawning habitat; and
bb. excluding stock from any Indigenous Freshwater Species Habitat; and
c. excluding and limiting access to wetlands, and the banks or beds of lakes and rivers to stock species (delete - that prefer to avoid water) and at stocking rates that avoid evident (delete damage) and add - adverse effects to vegetation, ecological function and substrate.
Add d. provide at least a 5 metre riparian protection zone along and either side of waterways and around wetlands and spring heads.
Note: a) need consistent and defined terminology.

b) E-Can mapped wetlands need a higher level of protection and restoration, e.g. fencing, native revegetation and possible some controlled grazing for weed control purposes only.

5.71 The use and disturbance of the bed (including the banks) of a lake, add- stream, permanent wetland or river by any farmed cattle, farmed deer or farmed pigs and any associated discharge to water is a prohibited activity in the following areas:
Add 5. In the bed (including the banks) of permanent wetlands, as shown on the Planning Maps.
Note: E-Can needs to legally define the bank of a waterway so they can be mapped and managed with certainty.

Establishing a new nutrient framework for commercial vegetable growing

While a new regulatory framework to better manage nutrient use and loss in commercial vegetable growing enterprises is supported there remains a need to similarly control a) soil erosion and sediment loss to waterways and b) pesticide use and loss to the land and waters.

4.36 applying to Commercial vegetable growing operations
5.4.2 Commercial Vegetable Growing Operations
The proposed new provisions need to be strengthened as follows:

1. Define “good management practice “as farming practice that meets or exceeds specified manuals or guidelines accredited by E-Can for horticulture activities.
2. Regulate the discharge of sediment from overland stormwater flow and stream bank erosion. Require a detailed land drainage plan capable of mapping overland flow paths and implementing flow barriers and diversions to avoid untreated contaminated stormwater entering waterways.
3. Add a new section on pesticide use that promotes biodegradable products non-toxic to aquatic ecosystems.
4. Set targets for FEP audit achievement, such as Minimum B rating within 3 years and all FEPs at A rating within 5 years.
5. Require protection and restoration of recognised/mapped wetlands and the establishment of minimum 5m riparian reserves along all waterways on a property

Schedule 7 Farm Environmental Plan

5E Management Area: Waterbodies (wetlands, riparian areas, drains, rivers, lakes, springs)
Objective:
Wetlands, riparian areas and the margins of surface waterbodies are managed to avoid damage to the bed and margins of the water body, and to avoid the direct input of nutrients, sediment, and microbial pathogens.
Targets:
1. Stock are excluded from waterbodies in accordance with regional council rules or any granted resource consent.
2. Vegetated riparian margins of sufficient width are maintained to minimise nutrient, sediment and microbial pathogen losses to waterbodies.
3. Farm tracks, gateways, water troughs, self-feeding areas, stock camps wallows and other farming activities that are potential sources of sediment, nutrient and microbial loss are located so as to minimise the risks to surface water quality.
1. Mahinga kai values are protected as a result of measures taken to protect and enhance water quality and stream health.

ADD detailed farm drainage plan with sufficient contour interval (e.g. 10 cm) to plot overland flow paths for rainfall runoff and management actions to prevent and or treat contaminated rainfall runoff

from discharging to waterways (creeks, drains, wetlands. Fence off and retire wetlands identified in the drainage plan and or E-Can wetland mapping.

Note : exiting lidar aerial mapping and Rain on Grid modelling technologies are available for mapping overland water flow paths and volumes.

Definitions
In Schedule 7 the following definitions apply:
Management Area – means the areas of farm management practice as set out below:
a. Nutrients
add -Sediments
add- Land drainage
b. Irrigation
c. Cultivation and soil structure
d. Animal Effluent and Solid Animal Waste
e. Waterbodies (riparian areas, drains, rivers, lakes, wetlands, springs)
f. Point sources – offal pits, farm rubbish pits, silage pits
g. Water use (excluding water associated with irrigation) – stock water and wash-down water

Objective – means the overarching outcome sought in relation to each **Management Area**

Target – means a measurable, auditable statement that contributes to achievement of the **Objective** in each **Management Area**.

Part A – Farm Environment Plans
A Farm Environment Plan can be based on either of:
1. The material set out in Part B below;
OR
2. Industry prepared Farm Environment Plan templates and guidance material that:
a. Include the following minimum components:
i. The matters set out in 1, 2, 3, 4B and 5 of Part B below;
ii. Contains a methodology that will enable development of a plan that will identify actual and potential environmental effects and risks specific to the property or land area, addresses those effects and risks and has a high likelihood of appropriately avoiding, remedying, offsetting or mitigating those effects;
iii. Performance measures that are capable of being audited as set out in Part C below; and
iv. matters or requirements set out in Part B of Schedule 7 that have been added as a result of a sub-region planning process; and
b. Has been approved as meeting the criteria in (a) and being acceptable to the Canterbury Regional Council by the Chief Executive of the Canterbury Regional Council.

Part B – Farm Environment Plan Default Content
The plan requirements will apply to:
a. a plan prepared for an individual property or farm enterprise; or
b. a plan prepared for an individual property which is part of a collective of properties, including an irrigation scheme, principal water supplier, or an Industry Certification Scheme; or
c. a plan prepared for a commercial vegetable growing operation.
The plan shall contain as a minimum:
1. Property, or farm enterprise, or commercial vegetable growing operation details
a. Physical address
b. Description of the ownership and name of a contact person
c. Legal description of the land and farm identifier
2. A map(s) or aerial photograph at a scale that clearly shows:
a. The boundaries of the property or land areas comprising the farming enterprise or commercial vegetable growing operation.

b. The boundaries of the main land management units on the property or within the farming enterprise or commercial vegetable growing operation.
c. The location of permanent or intermittent rivers, streams, lakes, drains, ponds or, wetlands or springs, including banks and overland stormwater flow paths.
d The location of riparian vegetation and fences adjacent to water bodies.
e. The location on all waterways where stock access or crossing occurs.
f. The location of any areas within or adjoining the property or land area that are identified in a District Plan as "significant indigenous biodiversity".
g. The location of any critical source areas and flow/transport pathways for phosphorus or sediment loss for any part of the property or land area including any land within the High Runoff Risk Phosphorus Zone and erosion prone areas.
h. The location of flood protection or erosion control assets, including flood protection vegetation.
i. Public access routes or access routes used to maintain the rivers, streams, wetlands or drains.
3. A list of all Canterbury Regional Council resource consents held for the property, or farming enterprise, or commercial vegetable growing operation.
4A. An assessment of the adverse environmental effects and risks associated with the farming activities and how the identified effects and risks will be avoided, managed or offset, including irrigation, application of nutrients, effluent application, stock exclusion from waterways, soil erosion controls, offal pits and farm rubbish pits, and sediment overland flow paths.
4B. a. nutrient budgets which show the nitrogen baseline and nitrogen loss calculation for the property, or farming enterprise or commercial vegetable growing operation; and
b. a report from the Farm Portal which shows for any property, or 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.
5. A description of how each of the following objectives and targets for each Management Area, where relevant, will be met and the specific actions that will be implemented to attain the targets.

5A Management Area: Nutrients
Objectives:
1. Use nutrients efficiently and minimise nutrient losses to surface and ground water.
2. Nutrient losses do not exceed consented nitrogen loss limits.
Targets:
1. Nitrogen losses from farming activities are at or below the:
a. Baseline GMP Loss Rate or Good Management Practice Loss Rate (whichever is the lesser) or
b. consented nitrogen loss limits.
2. Available nitrogen loss mitigation measures (excluding those associated with irrigation, fertiliser or effluent management) are implemented.
3. Phosphorus and sediment losses from farming activities are minimised.
4. Manage the amount, timing and application of fertiliser inputs to match the predicted plant requirements and minimise nutrient losses.
5. Store and load fertiliser to minimise the risk of spillage, leaching and loss into water bodies.

5C Management Area: Cultivation, Soil structure and Soil Erosion
Objective:
The physical and biological condition of soils is maintained or improved in order to minimise the movement of sediment, phosphorus and other contaminants to waterways.
Targets:
1. Farming activities are managed so as to not exacerbate soil erosion.
2. Add- Erosion prone areas are stabilised and retired from farming activities as necessary
3. Add- Suspended sediments in overland flow of stormwater are contained and settled out before discharge to waterways.

2. Farming practices are implemented that optimise infiltration of water into the soil profile and minimise run-off of water, sediment loss and erosion.

5E Management Area: Waterbodies (wetlands, riparian areas, drains, rivers, lakes, springs)
Objective:
Wetlands, riparian areas and the margins of surface waterbodies are managed to avoid damage to the bed, banks and margins of the water body, and to avoid the direct input of nutrients, sediment, and microbial pathogens.
Targets:
1. Stock are excluded from waterbodies in accordance with regional council rules or any granted resource consent.
2. Vegetated riparian margins of sufficient width are maintained to prevent and minimise nutrient, sediment and microbial pathogen losses to waterbodies.
3. Farm tracks, gateways, water troughs, self-feeding areas, stock camps wallows and other farming activities that are potential sources of sediment, nutrient and microbial loss are located and drained so as to minimise the risks to surface water quality and ecological health of waterways.
4. Mahinga kai values are protected as a result of measures taken to protect and enhance water quality and stream health.

Add- 5 Habitats of indigenous freshwater species are protected.

Add 6. Spawning sites for sports fisheries are protected.

7. Selwyn Te Waihora – Additional Requirements

Within the Selwyn Te Waihora sub-region, the following additional requirements for farm environment plans apply:

1. Include a map(s) or aerial photograph at a scale that clearly shows the location of any known mahinga kai, wahi tapu or Wāhi taonga, habitats of indigenous freshwater species and spawning sites for sports fisheries within any property or farming enterprise located in the Cultural Landscape/Values Management Area.
2. Identifying opportunities to undertake additional plantings of indigenous vegetation, and carrying out and managing any additional plantings in accordance with regional council guidelines for riparian planting;

2. Include a description of how the following objective will be met:

Nutrient management: To maximise nutrient use efficiency while minimising nutrient losses to water by:

a. minimising the loss of phosphorus and sediment within the Phosphorus Sediment Risk Area as shown in the planning maps; and
b. achieving good management practice in respect of nutrient losses; and
c. managing the discharge from drains within the Lake area of the Cultural Landscape/Values Management Area; and
d. further reducing the nitrogen loss calculation from 2022 where a property or farming enterprise's nitrogen loss calculation is greater than 15 kg of nitrogen per hectare per annum.

Soils management: To maintain or improve the physical and biological condition of soils in order to minimise the movement of sediment, phosphorus and other contaminants to waterways.

Minimise and control the overland flow of suspended sediments in stormwater.

Add
In-stream Biodiversity: To protect and enhance in-stream biodiversity values by:
1. On the map or aerial photograph of waterbodies required under Part A of this Schedule, specify the location of any spring heads, wetlands and spring-fed streams on the property or within the farming enterprise to recognise their high instream biodiversity values.

2. Prioritise achievement of the targets for Management Area: Waterbody Management for any spring heads, wetlands and spring-fed streams so as to protect and enhance the instream biodiversity values.

Add
Wetlands and Riparian Margins: To protect and restore wetland and riparian margins by:

1. 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.
2. Enable catchment restoration activities that focus on the protection of springs, the protection, establishment or enhancement of planted riparian margins, the creation, restoration or enhancement of wetlands, indigenous biodiversity in riparian margins, weed and pest control activities, and the targeted removal of fine sediment from waterbodies.
3. The high ecological values associated with rivers and wetlands in the Selwyn/Waihora catchment, including Te Waihora, are recognised and provided for by:
   a. further reducing, relative to the region-wide permitted activity rules, the area of land used for winter grazing of cattle as a permitted activity; and
   b. extending the region-wide provisions for stock exclusion to include drains, artificial watercourses and springs (waipuna).

New water quality limits for groundwater and surface water

Improving the ecological health of spring and rain fed waterways in Canterbury is challenged by many scientific uncertainties. A precautionary approach should be taken by adding an uncertainty factor to the established numerical limits. A 30% variance is recommended and that is considered conservative.

Schedule 8 Region-wide Water Quality Limits

Rivers

The minimum limits for ammonia nitrogen should be raised by 30% and maximum limits for nitrate nitrogen reduced by 30%.

Lakes

The phosphorus, nitrogen and ammonia toxicity maximum concentrations should be reduced by 30%.

Groundwater

Public safety in family and community groundwater supplies is paramount. A precautionary approach is required given research and monitoring public health on the prevalence and risk of colon and rectal cancers etc (Canterbury had world's highest incidence of Crohn's Disease in 2006 and rate is probably increasing with increasing pollution loads. It is recommended that the current limits for Nitrates be halved until an evidenced based process can reset the limits to ensure public safety.

Increases to minimum flows for rivers and streams

The current low flow regulatory regime is limited to physical flows with a poor correlation to flow regimes to maintain and restore ecological health and function of our waterways.

Given the lack of scientific understanding of the aquatic ecosystems, the proposed increase in minimum flows in prescribed streams and rivers are generally supported. However, by applying the

precautionary principle in the face of scientific uncertainty and the predicted hydrological effects of a changing climate, a further 30% increase in minimum flows is recommended.

Managed Aquifer Recharge is supported but must be well targeted and purposeful, e.g. higher flows in waterways popular for public bathing or to restore a degraded wetland. Recharging aquifers may cause groundwater levels to rise and may result in higher groundwater flows from spring heads and into wetlands or low-lying areas that were wetlands and have been drained or flows diverted.

It is preferred that water already allocated to irrigation schemes be used for aquifer recharge and stream augmentation.

Managed Aquifer Recharge
4.99 Improve the quality and/or quantity of groundwater, and any hydraulically connected surface water body, by providing for managed aquifer recharge where:
g. adverse effects on people and property from raised groundwater levels and higher surface water flows are (delete as a first priority avoided, and where avoidance is impracticable, effects) are minimised.
Note: aquifer recharge 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. Therefore, requiring avoidance of effects on properties negates some benefits of aquifer recharge and may severely restrict the application of this wetland restoration tool.

Further, managed aquifer recharge could be a critical tool for restoring degraded wetlands in Canterbury and the LWRP should enable this objective.

Schedule 32 Managed Aquifer Recharge Plan
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. a description of the quality and quantity of the receiving groundwater at the proposed discharge point ADD or zone; and
b. the groundwater quality and quantity objectives beyond the proposed discharge ADD 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 Add - or wetland restoration area; and
Add 5. An assessment of the potential ecological and social benefits from the managed aquifer recharge plan
5. An assessment of the actual and potential adverse environmental effects associated with the construction

Targeted Stream Augmentation
8.4.19
h. adverse effects on people, property and drainage systems from higher flows are (delete avoided or) mitigated.

8.5.18
6. Any adverse effects on people and property from raised water levels (delete and any reduction in the capacity of a drainage system) ;
Add – Any beneficial effects of improving the ecological health and function of a waterway or wetland and restoring degraded wetlands.

A cap on the volume of water available for allocation

Setting clear caps on the volume of surface and ground water for allocation and abstraction water is supported. However, the proposed caps should be lowered by 30% to provide reasonable environmental flows to sustain wealthy and diverse waterways.

Further, to restore depleted groundwaters increase a farmer's requirement to surrender 70% of groundwater abstraction rights held or 50% of the actual average annual use volume of groundwater abstracted over the past 3-5 years, when allocated surface water through irrigation schemes.