

# Canterbury Water Management Strategy

## Waimakariri Zone Committee

### Agenda

**Monday 2 March 2020**

**3.30pm**

***Council Chambers,  
Waimakariri District Council,  
215 High Street Rangiora***

***Members:***

Michael Blackwell (Chair)  
Cameron Henderson (Deputy Chair)  
David Ashby  
Erin Harvie  
Carolyn Latham  
Judith Roper-Lindsay  
Wendy Main  
Arapata Reuben (Te Ngai Tūāhuriri Rūnanga)  
John Cooke (Te Ngai Tūāhuriri Rūnanga)  
Sandra Stewart (WDC Councillor)  
Megan Hands (ECan Councillor)

Chairperson and Members

**CWMS WAIMAKARIRI ZONE COMMITTEE**

Agenda for the meeting of the **CANTERBURY WATER MANAGEMENT STRATEGY WAIMAKARIRI ZONE COMMITTEE** to be held in the **WAIMAKARIRI DISTRICT COUNCIL CHAMBERS, 215 HIGH STREET, RANGIORA** on **MONDAY 2 MARCH 2020** commencing at **3.30PM.**

Recommendations in reports are not to be construed as  
Council policy until adopted by the Council

**BUSINESS**

**PAGES**

1. **BUSINESS**

1.1 **KARAKIA**

1.2 **APOLOGIES**

1.3 **WELCOME AND INTRODUCTIONS**

1.4 **REGISTER OF INTERESTS**

Advice of any changes or updates.

5 - 6

2. **OPPORTUNITY FOR THE PUBLIC TO SPEAK**

3. **Land and Water Update – M Griffin (CWMS Facilitator, Waimakariri)**

7 - 22

3.1. **Nitrate Pilot Study for Private Wells in Cust and Eyreton – Update – S Allen (Water Environment Advisor WDC)**

3.2. **Nitrate private well pilot study report – S Allen (Water Environment Advisor WDC)**

*RECOMMENDATION*

**THAT** the CWMS Waimakariri Zone Committee:

- a) **Receives** these two reports for review and their information.

4. **Braided River Revival – M Griffin (CWMS Facilitator, Ecan) and A Arps (Northern Zone Manager Ecan)**

*RECOMMENDATION*

23-25

**THAT** the CWMS Waimakariri Zone Committee:

- a) **Receives** this update for its information and with consideration to the committee's catchment engagement in the coastal Ashley/Rakahuri, and work programme priorities in 2020.

5. **IMS Project Waimakariri – Zipporah Ploeg (Biodiversity Officer Ecan)**

*RECOMMENDATION*

26-31

**THAT** the CWMS Waimakariri Zone Committee:

- a) **Supports** the Immediate Steps project application, Mānuka Swamp Project for \$25,000

6. **COMMITTEE UPDATES – M Griffin (CWMS Facilitator, Ecan)**

*RECOMMENDATION*

32-45

**THAT** the CWMS Waimakariri Zone Committee:

- a) **Receives** these updates for its information, and with reference to the Committee's 2020 work programme and community engagement priorities.
- b) **Approves** the committees 2019 Annual Report (attached as **agenda item 6-2**) or confirms any final amendments to be made to this report for presentation to both ECan and WDC Councils.

6.1. CWMS Regional Committee Meeting Report – 11 February 2020

6.2. CWMS Waimakariri Zone Committee Annual Report

6.3. MahingaKai Advert

6.4. Dairy News Article – 18 February 2020

6.5. Spring Sampling Sites

7. **CONFIRMATION OF MINUTES**

**Minutes of the Canterbury Water Management Strategy Waimakariri Zone Committee meeting – 3 February 2020**

46 - 54

*RECOMMENDATION*

**THAT** the CWMS Waimakariri Zone Committee:

- a) **Confirms** the minutes of the Canterbury Water Management Strategy Waimakariri Zone Committee meeting, held on 3 February 2020, as a true and accurate record.

**Matters Arising**

8. **GENERAL BUSINESS**

**KARAKIA**

### **NEXT MEETING**

The next meeting of the CWMS Waimakariri Water Zone Committee is scheduled for the 6 April 2020 at 3:30pm.



# WAIMAKARIRI WATER ZONE COMMITTEE

## Register of Interests – at 1 February 2020

Name	Committee Member Interests
<b>David Ashby</b>	<ul style="list-style-type: none"> <li>- Director/shareholder – Pineleigh Farm Limited</li> <li>- Director/shareholder – Dave Ashby Rural Consultants Limited</li> <li>- Shareholder – Waimakariri Irrigation Limited</li> <li>- Member – Cust Main Drain Water User Group</li> </ul>
<b>Michael Blackwell</b>	<ul style="list-style-type: none"> <li>- Director/ Shareholder – Blackwells Limited, Kaiapoi</li> <li>- Treasurer – North Canterbury Clay Target Association</li> <li>- 4Ha property, Tuahiwi</li> </ul>
<b>John Cooke</b>	<ul style="list-style-type: none"> <li>- Director/Shareholder – Executive Limousines 2015 Limited</li> <li>- Director/Shareholder – Express Hire Limited</li> <li>- Director/Shareholder – Secure Property Management Limited</li> <li>- Director/Shareholder – Testpro Limited</li> <li>- Director/Shareholder – Acropolis Wedding and Event Hire Limited</li> <li>- Director/Shareholder – Pines Beach Store Limited</li> <li>- Director/Shareholder – Coastal Dream 2005 Limited – 4Ha property, Kaiapoi</li> <li>- Interim Trustee – Section 6 Survey Office Plan 465273 Ahu Whenua Trust</li> </ul>
<b>Megan Hands</b>	<ul style="list-style-type: none"> <li>- TBC</li> </ul>
<b>Erin Harvie</b>	<ul style="list-style-type: none"> <li>- Shareholder – Bowden Consultancy Limited, trading as Bowden Environmental</li> <li>- Member – NZ Hydrological Society</li> <li>- Associate member – NZ Institute of Primary Industry Management</li> <li>- Involvement with Cust River Water User Group</li> </ul>
<b>Cameron Henderson</b>	<ul style="list-style-type: none"> <li>- Dairy Farmer - Groundwater irrigator</li> <li>- Member – NZ Institute of Primary Industry Management</li> <li>- Member – NZ Dairy Environment Leaders Forum</li> <li>- Chairman – DairyCan - Canterbury Dairy Environment Leaders Forum</li> <li>- Chairman – North Canterbury Federated Farmers</li> </ul>
<b>Carolyn Latham</b>	<ul style="list-style-type: none"> <li>- Farmer – Sheep, beef</li> <li>- Director – Latham Ag Ltd Consulting</li> <li>- Shareholder – Silver Fern Farms, Farmlands</li> <li>- Registered Member – New Zealand Institute of Primary Industry Management</li> </ul>
<b>Wendy Main</b>	<ul style="list-style-type: none"> <li>- Dairy Farmer – Trinity Holdings (2001) Ltd</li> <li>- Registered Nurse</li> <li>- Member Federated Farmers</li> <li>- Consent to Farm and related consents for water and effluent with ECan</li> <li>- Shareholder – Silver Fern Farms, Farmlands, LIC</li> </ul>
<b>Arapata Reuben</b>	<ul style="list-style-type: none"> <li>- Chair – Ngāi Tūāhuriri Rūnanga</li> <li>- Trustee – Tuahiwi Marae</li> <li>- Trustee – Tuhono Trust</li> </ul>

	<ul style="list-style-type: none"> <li>- Trustee – Mana Waitaha Charitable Trust</li> <li>- Member – National Kiwi Recovery Group</li> <li>- Rūnanga Rep and Chair – Christchurch/West Melton Water Zone Committee</li> <li>- Rūnanga Rep – Ashburton Water Zone Committee</li> </ul>
<b>Judith Roper-Lindsay</b>	<ul style="list-style-type: none"> <li>- Director/ecologist – JR-L Consulting Ltd.</li> <li>- Land-owner/small-scale sheep farmer, Ashley downs</li> <li>- Fellow – Environment Institute of Australia and New Zealand (EIANZ)</li> </ul>
<b>Sandra Stewart</b>	<ul style="list-style-type: none"> <li>- Self-employed journalist</li> <li>- Land-owner, 4Ha Springbank – sheep &amp; dogs</li> </ul>

<b>AGENDA ITEM NO: 3</b>	<b>SUBJECT:</b> WDC Land and Water Committee – update	
<b>REPORT TO:</b> Waimakariri Water Zone Committee		<b>MEETING DATE:</b> 2 March 2020
<b>REPORT BY:</b> Murray Griffin – CWMS Facilitator, Waimakariri		

## PROPOSAL

This briefing provides the Waimakariri Water Zone Committee with an update the results for the pilot private well study of nitrate in Cust and Eyreton. This report was presented to the WDC Land and Water Committee on 13 February 2020

The following items are presented for the Zone Committee to review

- **Agenda item 3-1: The WDC report on the results for pilot private well study of nitrate – Cust and Eyreton**
- **Agenda item 3-2: The WDC report on pilot study of nitrate levels in private wells**

To view the full WDC Land and Water Committee meeting agenda for the 13 February meeting go to: <https://www.waimakariri.govt.nz/your-council/meetings/minutes-and-agendas>

## BY WHO

This update is provided by Sophie Allen – WDC Water Environment Advisor, 3 Waters Team

## RECOMMENDATION

**That the Zone Committee:**

**Receives** these two reports for its information.

**WAIMAKARIRI DISTRICT COUNCIL****REPORT FOR INFORMATION**

**FILE NO and TRIM NO:** WAT-10-14-01/ 200127010024

**REPORT TO:** Land and Water Committee

**DATE OF MEETING:** 13 February 2020

**FROM:** Sophie Allen – Water Environment Advisor

**SUBJECT:** Results for pilot private well study of nitrate - Cust and Eyreton

**SIGNED BY:**  
(for Reports to Council,  
Committees or Boards)

  
Department Manager

  
Chief Executive

## 1. **SUMMARY**

- 1.1 Waimakariri District Council (WDC), alongside Environment Canterbury and Canterbury District Health Board, have been recommended in the Zone Implementation Programme Addendum (ZIPA) to develop a programme for testing and reporting of water quality in private drinking water supply wells.
- 1.2 This report summarises the findings of the WDC pilot private well study. Nitrate and other chemical parameters were sampled in 18 wells, nine in Cust and nine in Eyreton. A sample for a deep well in Eyreton is yet to be obtained from a landowner to complete the study, for a total of 19 samples.
- 1.3 One well to the east of Cust measured 17.9 mg/L nitrate-nitrogen, above the Maximum Allowable Value (MAV) set for nitrate in the New Zealand Drinking-water Standards for New Zealand (DWSNZ 2005, amended 2008). It should be noted that private wells do not need to comply with the DWSNZ, however are used for guidance values in this report.
- 1.4 The majority (72%) of the 18 wells sampled in Eyreton and Cust were above half of the MAV (5.65 mg/L) for nitrate-nitrogen. The median nitrate concentration for Cust and Eyreton, as sampled in this pilot study would not meet the proposed limit of a median of 5.65 mg/L nitrate-nitrogen (half of the MAV) in Plan Change 7 of the Land and Water Regional Plan for private water supply wells.
- 1.5 Only weak correlation between increasing well depth and decreasing nitrate level was found, noting the pilot study was of a small sample size, and that a large study would provide better statistical analysis.
- 1.6 A well in the Cust area was also found to be over the MAV for arsenic and manganese. This suggests that there is 'mixed' groundwater in this area, i.e. where oxygen levels vary, causing changes in water chemistry.
- 1.7 Other chemical parameters analysed in this pilot study are not presented in this report for brevity, however no other results were over any MAV. Microbiological testing was not carried out due to the risk of contaminating a sample if not trained.
- 1.8 The nitrate pilot study is intended to be repeated with the same wells, (up to 10 wells in Eyreton and 10 wells in Cust) in spring 2020, with the purpose of to allow for assessment of trends over time and refining of sampling methodology. Well owners from the 2019 sample round will be approached for repeat annual sampling.

- 1.9 A report with a recommendation whether to scale the pilot private well study to all 18 groundwater sub-areas of the Waimakariri District plains (180 wells per year), will be presented to Council late in 2020. This report will include results of discussions with Environment Canterbury regarding cost-sharing and staff resourcing.

Attachments:

- i. Pilot study of nitrate levels in private wells (190627090939)

## 2. **RECOMMENDATION**

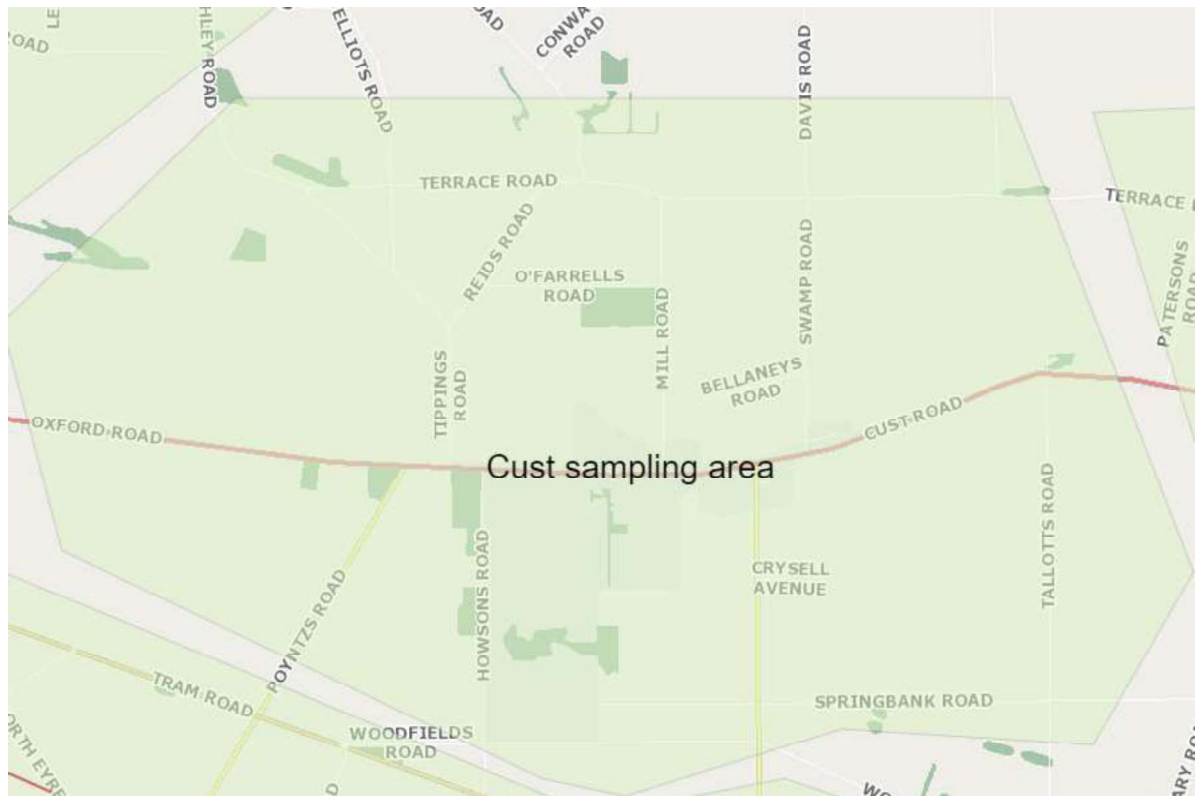
**THAT** the Land and Water Committee:

- (a) **Receives** report No. 200127010024.
- (b) **Notes** the findings of the pilot study, with one well was above the Maximum Allowable Value (MAV) (DWSNZ 2005, amended 2008). The majority (72%) of the 18 wells in Eyreton and Cust were above half of the MAV (5.65 mg/L).
- (c) **Notes** that the median nitrate concentration for Cust and Eyreton, as sampled in this pilot study, would not meet the proposed limit of a median of 5.65 mg/L nitrate-nitrogen in Plan Change 7 of the Land and Water Regional Plan for private water supply wells.
- (d) **Notes** that Waimakariri District Council and Environment Canterbury staff will continue to raise awareness of the health impacts of high nitrates, and to encourage private well owners to test water regularly.
- (e) **Notes** that the pilot study is intended be repeated with 10 wells in Eyreton and 10 wells in Cust) in spring 2020. Well owners from the 2019 sample round will be approached for repeat annual sampling, to allow for assessment of trends over time.
- (f) **Notes** that a report with a recommendation whether to scale the pilot private well study to all 18 groundwater sub-areas of the Waimakariri District plains (180 wells per year), will be presented to Council late in 2020. This report will include results of discussions with Environment Canterbury regarding cost-sharing and staff resourcing.
- (g) **Circulates** this report to the Council and Waimakariri Water Zone Committee for information.

## 3. **BACKGROUND**

- 3.1 Drinking-water safety is the joint responsibilities of territorial authorities, the Regional Council (Environment Canterbury) and the local health board (Canterbury District Health Board). Environment Canterbury manages the quality at source. Territorial Authorities, such as WDC, manage the quality of water coming out of the tap. For public supplies, this is through management of the supply, storage and distribution network. For private supplies, this is through the issuing of a resource consent for new developments (which will specify how water is to be sourced) and issuing of a building consent for new dwellings which confirms that the water is potable at the time of issuing the consent. The District Health Board manages the impact of the water quality on public health, and can give advice on the health impacts of water quality.
- 3.2 A pilot study of nitrate levels in private wells in the Cust and Eyreton areas was carried out in late 2019 by WDC for nitrate and a range of other chemical parameters. Refer to Maps 1 and 2 for the definition of the Cust and Eyreton sampling areas. The purpose of the study is to work towards implementing the Zone Implementation Programme Addendum (ZIPA) Recommendation 3.16, adopted by Council in December 2018.
- 3.3 Recommendation 3.16 states 'That Environment Canterbury, Waimakariri District Council and Canterbury District Health Board work together to:

- a. Develop a programme for testing and reporting of water quality in private drinking water supply wells, and
  - b. Raise awareness of health impacts from high nitrates in drinking water.'
- 3.4 Cust and Eyreton were recommended as the two areas for the pilot study due to previous high nitrate levels reported in Environment Canterbury monitoring wells and reports from private well owners. Nitrate levels have been reported to Council in 2018, by private well owners in the Eyreton area, that were close to the Maximum Accepted Value (MAV) of 11.3 mg/L of nitrate-nitrogen as defined in the Drinking-water Standards for New Zealand.



**Map 1:** Cust private well sampling area for groundwater within the Waimakariri Water Zone, as defined in the Zone Implementation Programme Addendum (ZIPA).

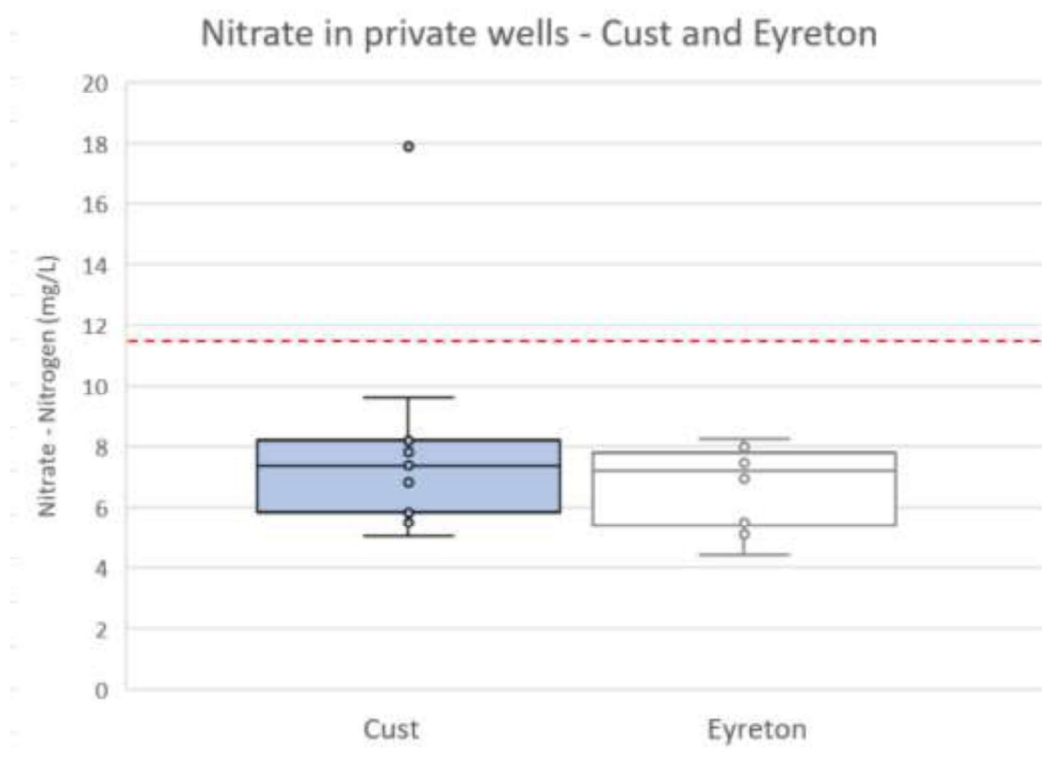


**Map 2:** Eyreton private well sampling area for groundwater within the Waimakariri Water Zone, as defined in the Zone Implementation Programme Addendum (ZIPA)

#### 4. **ISSUES AND OPTIONS**

##### ***Nitrate limits***

- 4.1. The median nitrate concentration for Cust and Eyreton, as sampled in this pilot study would not meet the proposed limit of a median of 5.65 mg/L nitrate-nitrogen in Plan Change 7 of the Land and Water Regional Plan for private water supply wells. The nitrate-nitrogen median measured for Cust was 7.38 mg/L, and Eyreton was 7.22 mg/L (see Figure 1). Note that wells were selected based on a geographic spread over an area and range of well depths. Note that the Eyreton median excludes a well that was already known to have a high nitrate level, to avoid sampling bias of results.



**Figure 1:** Median, upper and lower quartiles for Nitrate-nitrogen (mg/L) levels in private wells in Cust and Eyreton. Dashed red line indicates the nitrate-nitrogen MAV of 11.3mg/L. Note that the Eyreton results excludes a well that was already known to have a high nitrate level, to avoid sampling bias of results.

- 4.2. One well was measured over the MAV for nitrate, and 17 wells were below the MAV. It is likely that there are other private wells, not sampled in this pilot study, that exceed the nitrate MAV in some wells in Cust and Eyreton, however this proportion has not been estimated in this study. Environment Canterbury has modelled that up to an estimated 75 private wells could be exceeding the MAV for nitrate within the Waimakariri Water Zone (ZIPA, December 2018). Due to this risk of nitrate levels over the MAV in private wells, WDC, together with Environment Canterbury and Community Public Health, will continue to raise awareness of the health impacts of nitrate, and the need for regular testing of well water.
- 4.3. WDC staff are collaborating with Environment Canterbury for the production of a well testing advice brochure, which advising on testing of water, as well as mapping indicative

areas where issues such as high nitrate and arsenic could be an issue for proposed new wells. This brochure is currently drafted, and due to undergo independent review shortly.

### ***Arsenic and manganese***

- 4.4. One property in the Cust area was measured over the MAV for both arsenic and manganese in the pilot study. However, previous private testing in 2014 did not identify any arsenic or manganese issues. The landowner is considering re-testing of a water sample for confirmation, and is seeking advice on the installation of an appropriate filter.
- 4.5. Dr. Murray Close at the Institute of Environmental and Scientific Research (ESR) has modelled a 'mixed' groundwater zone in this area around Cust, where groundwater can fluctuate between oxygenated and reduced groundwater. These redox fluctuations could explain the occurrence. There are potentially other properties in the vicinity, also in the 'mixed' groundwater zone, that might be over the MAV for manganese and arsenic, if there are high arsenic and manganese sediment deposits present.

### ***Sample collection***

- 4.6. Although efforts were made to select private wells randomly based on geographic spread over the Cust and Eyreton areas and for a range of depth, there is likely to have been some selection bias of the wells. Some areas of Cust have reticulated water, and therefore were not included in the study area.
- 4.7. Some study participants were 'cold-called' by WDC staff with no knowledge of the study, and others volunteered through a shout-out through networks. Some well owners who were cold-called were not willing to participate due to a variety of reasons, such as concern that the result would be placed on the property file or would be public information. Time taken to contact and obtain study permission letters was substantial for WDC staff – with often several follow-up phone calls and emails required. It is recommended that this resourcing should be considered, particularly if a deciding to upscale to 180 wells for future sampling.
- 4.8. Confirming when samples had been taken and couriered by the private well owner to the laboratory could be improved, as this was a communication issue identified. WDC recommends that a 'receipt' system from private well owners (i.e. requirement to email WDC staff), for when well water has been sampled and couriered, be implemented. This will reduce the need for WDC staff to chase landowners or ask the laboratory for regular updates of samples received.

### ***Self-sampling methodology***

- 4.9. In Cust, two samples were taken by the WDC Water Unit obtained 'self-sampled' by the landowner; for comparison of the quality of self-sampling results. The self-supplied sample system alone was trialled for Eyreton.
- 4.10. Comparing results from the Water Unit and self-sample by the landowner, there were little variation in the nitrate result (see Table 1). This supports that landowners self-supplying samples could be a method to reduce sampling costs, however more assessment of the robustness of the 'self-sampled' sampling methodology is needed. WDC staff recommend that 'self-sampling' by landowners continues for 2020 samples, however without microbiological testing, due to ease of contamination of a sample without training.



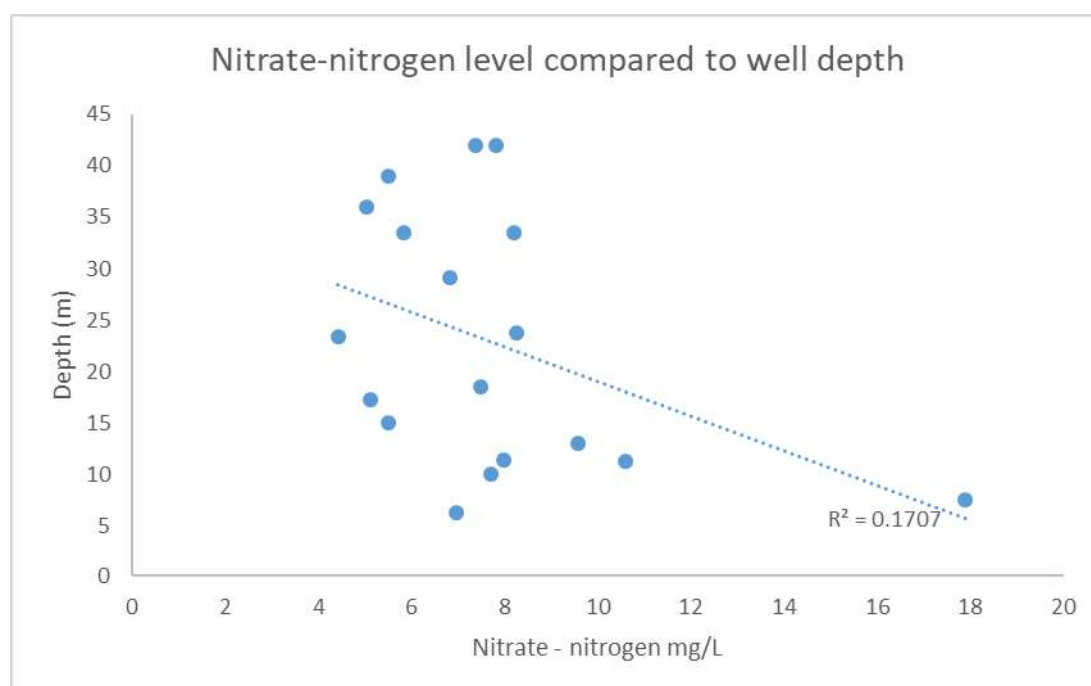
**Table 1:** Comparison of well water samples obtained by the WDC Water Unit and the landowner (sampling times differed by less than 48 hours).

	Cust property #1	Cust property #2
WDC Water Unit result – Nitrate-nitrogen mg/L	7.34	4.86
'Self-sampled' landowners result – Nitrate-nitrogen mg/L	7.38	5.03

- 4.11. The 2020 sampling round is recommended to be carried out earlier in spring, i.e. September or October, to ensure that there is no conflict with increased workloads for the WDC Water Unit and private well owners leading up to Christmas. Spring is also when nitrate levels are typically highest.

### **Well depth**

- 4.12. The highest nitrate-nitrogen concentration was found in a shallow well (7.6m deep). Increasing well depth, however, was found to have only a weak correlation with decreasing nitrate ( $R^2 = 0.1707$ ), noting the limited sample size of the pilot study (see Figure 2).



**Figure 2:** Nitrate-nitrogen level (mg/L) plotted against depth of private wells (m) - Eyreton and Cust.

### **Next steps**

- 4.13. Well owners have been contacted by WDC to communicate test results and advised to contact a water treatment specialist if over a MAV. Well owners with a result over half of the MAV (5.65 mg/L) were advised to repeat water testing in the future at their own expense.

- 4.14. It was intended that this pilot study would test the sampling methodology for a potential wider and more extensive private well sampling programme of 180 wells in 2020-21 onwards (see Appendix 1). Some testing of sampling methodology was able to be carried out in 2019-20, however further refinement and discussion with Environment Canterbury around cost-sharing is proposed for 2020-21. Therefore, WDC staff recommend a roll-out of a more extensive programme from 2021-22 onwards.
- 4.15. The Management Team have reviewed this report and support the recommendations.

## **5. COMMUNITY VIEWS**

### **5.1. Groups and Organisations**

- 5.1.1. Eyreton residents with elevated nitrate levels expressed a desire for wider testing to be carried out, and for private well owners in the area to be alerted of the possibility of elevated nitrate levels.
- 5.1.2. Participants of the study have received water sample results for their well, and support where required for water treatment advice.

### **5.2. Wider Community**

- 5.2.1. The wider community has not yet been informed of the results of the pilot nitrate pilot. A WDC media release will be release shortly after this report is presented to the Land and Water Committee. This media release inform community members about the results of the study, and remind private well owners of the need to test regularly for a suite of parameters - particularly nitrate, arsenic, manganese and *E. coli*.

## **6. IMPLICATIONS AND RISKS**

### **6.1. Financial Implications**

- 6.1.1. The cost of the pilot study is now forecast to be \$2,371. The expected cost was \$7,500. Reduced costs are due to savings from a reduced sampling sample programme. In addition, two Cust wells were used as controls for another study regarding arsenic in the wider Kaiapoi area, with the cost of sample analysis covered by that study.
- 6.1.2. There is a budget allocation in 2020-21 of \$10,000 for ZIPA recommendation 3.16 that is sufficient for a repeat of a WDC-led pilot study in Cust and Eyreton.

### **6.2. Community Implication**

- 6.2.1. A study of nitrate levels in private wells in the Waimakariri District, gives the best outcomes for the community. This is particularly if the study targets areas where nitrate levels are potentially high. This is because currently water quality testing by private well owners is discretionary, and results are not required to be shared with Council unless as a condition for a subdivision or building consent. Due to this situation, there is limited information of the level of nitrates in private wells.

### **6.3. Risk Management**

- 6.3.1. The risk that private well owners in the Cust and Eyreton areas could be consuming water that has elevated nitrate levels over the MAV has been confirmed by this pilot study (1 of the 18 wells was over the MAV), however the majority of wells were under the MAV. The results of this pilot study and associated media release will be used to advise private well owners, and thereby reduce the risk of high nitrate levels.

#### 6.4. **Health and Safety**

6.4.1. There are no specific health and safety considerations for this report.

### 7. **CONTEXT**

#### 7.1. **Policy**

7.1.1. This matter is not a matter of significance in terms of the Council's Significance and Engagement Policy.

#### 7.2. **Legislation**

7.2.1. Health Act 1956 and Drinking-water Standards for New Zealand (2005, amended 2008) set the Maximum Allowable Value (MAV) for nitrate-nitrogen in drinking water at 11.3 mg/L.

#### 7.3. **Community Outcomes**

7.3.1. There is a healthy and sustainable environment for all

7.3.1.1. Cultural values relating to water are acknowledged and respected.

7.3.1.2. Harm to the environment from the spread of contaminants into ground water and surface water is minimised.

#### 7.4. **Delegations**

7.4.1. No delegations apply to this report, as this report is for information only.

**WAIMAKARIRI DISTRICT COUNCIL****REPORT FOR INFORMATION**

**FILE NO and TRIM NO:** WAT-10-14 / 190627090939

**REPORT TO:** Land and Water Working Group

**DATE OF MEETING:** 25 July 2019

**FROM:** Sophie Allen – Water Environment Advisor

**SUBJECT:** Pilot study of nitrate levels in private wells

**SIGNED BY:**  
(for Reports to Council,  
Committees or Boards)




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Department Manager




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Chief Executive

## 1. **SUMMARY**

- 1.1 This report recommends the scope for Council to undertake a pilot study of nitrate levels in groundwater, for private wells in the Cust and Eyreton areas, as per recommendation 3.16 of the Zone Implementation Programme Addendum (ZIPA).
- 1.2 Nitrate levels have been reported to Council in 2018, by private well owners in the Eyreton area, that were close to the Maximum Accepted Value (MAV) of 11.3 mg/L of nitrate-nitrogen as defined in the Drinking-water Standards for New Zealand (DWSNZ 2005, amended 2018).
- 1.3 Cust and Eyreton are recommended as the two areas for the pilot study due to previous high nitrate levels reported in Environment Canterbury monitoring wells and reports from private well owners.
- 1.4 It is recommended by WDC staff that the pilot study is used as a test of sampling processes for a potential wider and more extensive private well sampling programme from 170 wells in 2020-21 onwards.
- 1.5 Ten private wells in the Cust area and ten private wells in the Eyreton area are proposed to be sampled in the spring of 2019. Spring is when nitrate levels are usually seasonally high. Both well sampling by the WDC Water Unit and self-sampled by the landowner will be trialled for Cust; for comparison of the quality of self-sampling results. The self-supplied sample system alone will be trialled for Eyreton. The sampling system trial is to determine a preferred method (Water Unit sample or self-supplied) for a more extensive sampling programme to be carried out in 2020-21.
- 1.6 Environment Canterbury groundwater staff have confirmed that they are able to provide technical advice, as well as data management and storage, for the pilot study.
- 1.7 A budget of \$10,000 per annum for 2019-20 and 2020-21 has been allocated from the general rate for ZIPA works under the Drainage Account for the pilot study to be undertaken.

Attachments:

- i. Oxford Ohoka Community Board Meeting 3 October 2018 Tabled Information Rosina Rouse Tom McBreaty (Nitrate levels in Eyreton, TRIM 181011118533)

## 2. **RECOMMENDATION**

**THAT** the Land and Water Working Group recommends:

**THAT** the Council:

- (a) **Receives** report No. 190627090939.
- (b) **Notes** the scope of the pilot study, which aims to provide information to private well owners in Cust and Eyreton on nitrate levels in these areas. The aim is to also to test two different sampling techniques, self-supplied sampling or Water Unit staff sampling.
- (c) **Notes** that the allocated budget is \$10,000 per annum for 2019-20 and 2020-21.
- (d) **Notes** that the pilot study in this report is in anticipation of a more extensive programme in 2020-21 onwards of 170 private wells. The extended programme would require additional funding, such as from Environment Canterbury.
- (e) **Notes** that specific communication will be undertaken by WDC staff with individual landowners about test results obtained. Any general communication with the wider communities of Cust and Eyreton will depend on test results obtained.

## 3. **BACKGROUND**

- 3.1 A level of nitrate-nitrogen in a private well in Eyreton that was 11.2 mg/L (just below the MAV of 11.3 mg/L, as per the Drinking-water Standards for New Zealand 2005, amended 2018) was reported to WDC in 2018. A neighbouring property in Eyreton was also measured as 10.4 mg/L of nitrate-nitrogen in 2018.
- 3.2 The property owners with the well over the MAV for nitrate have installed a reverse osmosis system to treat the water. Depending on results and location of properties, a treatment option can be offered to connect to a community supply well where practicable.
- 3.1. Canterbury groundwater monitoring bores mostly show no trend in the Waimakariri Water Zone, (one well shows an increasing trend and two wells a decreasing trend). In the Environment Canterbury 2018 groundwater annual report, none of the monitoring bores were shown to be over the MAV for nitrate in the Waimakariri Water Zone.
- 3.3 Nitrate levels are known to vary seasonally, often with highest levels noted in spring.

## 4. **ISSUES AND OPTIONS**

- 4.1. The pilot study will be carried out as per the stated proposal below by WDC staff. This proposal outlines study objectives, scope, exclusions, deliverables, and timeframes.

### **Proposal - Study Objectives**

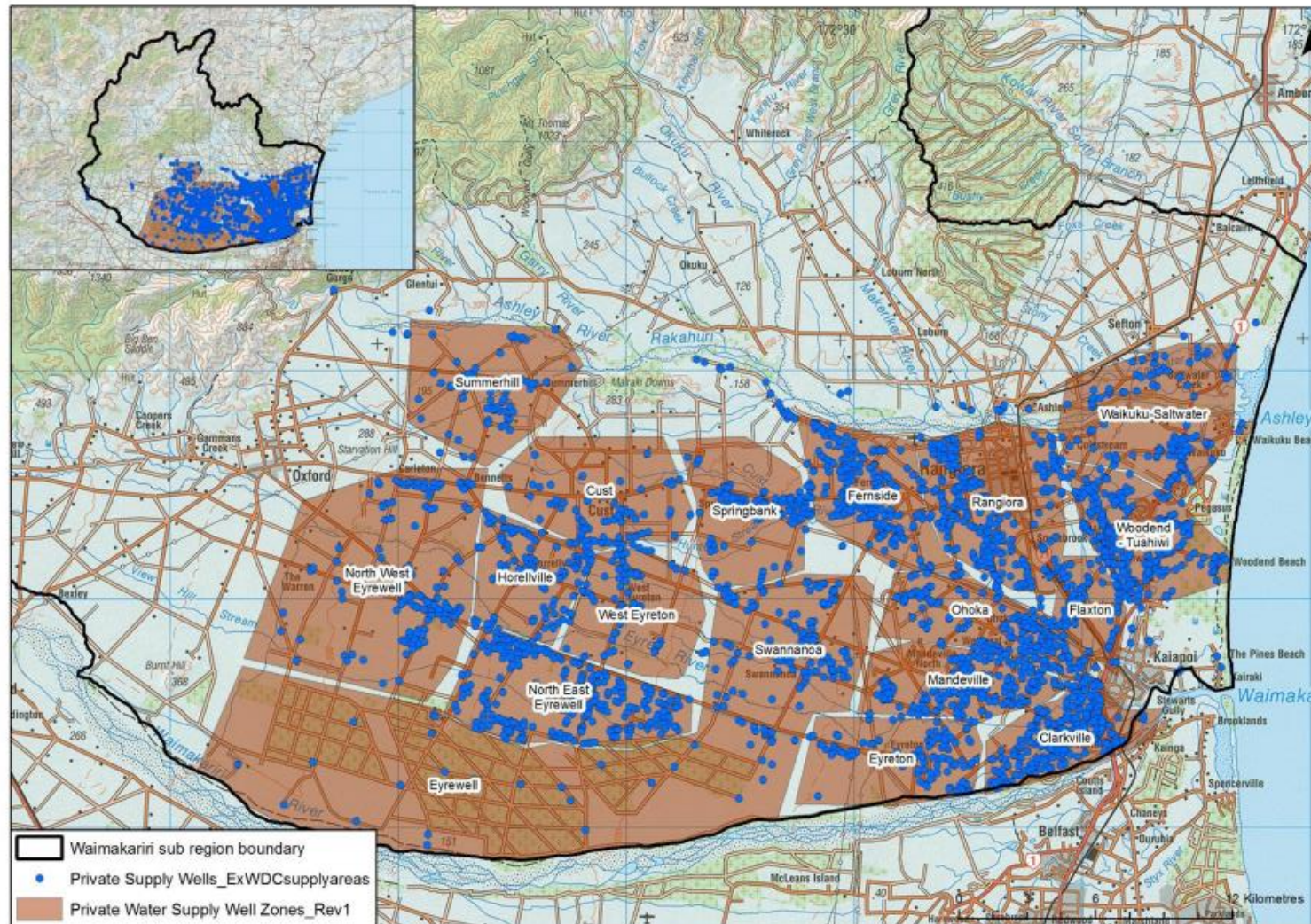
- 4.2. The objectives of the pilot study are:
  - 4.2.1. To establish nitrate levels in ten private wells in Cust and ten private wells in Eyreton.
  - 4.2.2. To assess the cost, sample quality and effectiveness of 'self-sampling' compared to water sampling by Water Unit staff.

- 4.2.3. To recommend any improvements to the sampling protocol, data management, project management for the more extensive nitrate sampling programme in 2020-2021.
- 4.3. It is proposed that the Water Unit sampling will sample the routine water chemical suite of parameters, wider than what is required for this pilot study, as there is a potential opportunity for water quality results to be further analysed at a later date- outside of the scope of this study. An example would be valuable information on the prevalence of *E. coli* in private wells, indicating whether there is potential faecal contamination.
- 4.4. 'Self-sampling' will be for a restricted set of parameters only, i.e. the routine water suite from Hill Laboratories excluding *E. coli* and Total coliforms, due to the expertise and careful sample handling required to correctly sample these microbiological parameters.
- 1.8 A private wells sampling programme of 170 wells from 2020-21 onwards would cover all seventeen key groundwater areas in the District to advise private well owners of nitrate levels, and also monitor nitrate trends over time. Discussions have commenced with Environment Canterbury staff on whether the more extensive programme will be in conjunction with support and/or budget from Environment Canterbury.

### Scope

- 4.5. The selection of the 20 wells will follow advice from Environment Canterbury groundwater scientist. Targeted wells to be sampled will be:
- 4.5.1. Private wells (i.e. excluding WDC and private community water supplies that are already required to test for nitrate and other determinands under the Drinking-water Standards for New Zealand).
  - 4.5.2. Are located within the groundwater sub-zone areas of 'Cust' and 'Eyreton' as defined by Environment Canterbury (see Map 1).
  - 4.5.3. Sampled from the well head, or a well-purged kitchen tap if there is no filtration installed.
  - 4.5.4. For Cust - Sampling for the routine water suite as defined by Hill Laboratories.  
For Eyreton – Sampling for the routine water suite as defined by Hill Laboratories, except microbiological (*E.coli* and Total coliforms.),
  - 4.5.5. WDC staff will contact and provide advice to any private well owners with any nitrate-nitrogen level that is over the nitrate-nitrogen MAV (11.3 mg/L).





**Map 1:** Seventeen private well sampling areas groundwater within the Waimakariri Water Zone, as defined by the Zone Implementation Programme Addendum (ZIPA) – Map X5.

## Exclusions

4.6. Exclusions from the pilot study are:

- 4.6.1. Well water used only for stock and other agricultural uses such as irrigation.
- 4.6.2. Sampling of community water supplies, as these require regular testing for nitrate under the DWSNZ (2005, amended 2018).

## Deliverables

- 4.6.3. A presentation of final report findings and recommendations to Council of nitrate levels found in selected private wells of Cust and Eyreton (see Map 1). WDC staff will interpret results together with the Waimakariri Water Zone groundwater model predictions for the Cust and Eyreton areas.
- 4.6.4. Advice that can be used to inform and advise all private well owners in the Cust and Eyreton areas. Recommendations on treatment options for private well owners, if applicable.
- 4.6.5. Well locations to be double-checked with GPS, and a photo to be taken by Water Unit staff. Well location to be mapped, or a GPS reference taken if possible, and a well head photo taken by the 'self-sampling' well owners.
- 4.6.6. Results data supplied to Environment Canterbury for entry into the Canterbury groundwater database.

## Timeframe

4.7. The proposed timeframe for the pilot study is:

Date	Task
By July 2019	Scope project with this report to the Land and Water Working Group
By September 2019	WDC media release to promote information to the community about the pilot study and to request to volunteer private wells to be sampled.
By September 2019	Ground-truthing of Environment Canterbury well data by WDC and Environment Canterbury. Selection of wells based on criteria.
September-November 2019	Private well owners contacted by WDC. Sampling carried out by the Water Unit and/or sample kit sent out for self-sampling.
September 2019 onwards	Test results shared with private well owners. Potential work by WDC staff commences to advise private well users of any recommended treatment options, based on private well testing results.
By December 2019	Draft report with results and recommendations by WDC staff
By December 2019 - January 2020	Final report to Land and Water Working Group meeting
4 February 2020	Final report with recommendations presented to Council by WDC staff at Council meeting

## Data quality and data management

4.8. Environment Canterbury groundwater scientists will provide advice and technical support to refine which wells are suitable for sampling within the area.



- 4.9. Some ground-truthing of Environment Canterbury well data will be required by WDC staff, for example by looking at the location of habitable dwellings that are not connected to a reticulated water supply. Environment Canterbury well data may not identify all wells that would be suitable for sampling in cases such as:
- 4.9.1. Wells dating from pre-1990's, with no consent expiry or review carried out since this date
  - 4.9.2. Wells are used for domestic use, though not consented for this use.
  - 4.9.3. A reticulated water supply connection exists, therefore an available well is assumed to not be used for domestic consumption.
  - 4.9.4. Wells not recorded in Environment Canterbury well data, for example if no consent to drill a well has been issued.
- 4.10. It is unknown how representative the 10 wells selected will be for each of the Cust and Eyreton areas. Due to the low sample size and volunteer recruitment, it is likely that there will be some sampling bias. There are approximately 2300 private supply wells in the Waimakariri Water Zone according to a draft Environment Canterbury memo in 2018.
- 4.11. The 20 wells are recommended to be selected, in discussion with Environment Canterbury groundwater scientists on criteria such as;
- 4.11.1. close proximity to a well with an identified elevated nitrate level;
  - 4.11.2. providing a range of depths (screened depth, or total depth if information on screened depth is not available);
  - 4.11.3. willingness of the landowner to provide a sample;
  - 4.11.4. modelled to have oxidised groundwater conditions and/or
  - 4.11.5. request from a landowner to be sampled.
- 4.12. The Management Team have reviewed this report and support the recommendations.

## 5. **COMMUNITY VIEWS**

### 5.1. **Groups and Organisations**

- 5.1.1. Eyreton residents with elevated nitrate levels have expressed a desire for wider testing to be carried out, and for private well owners in the area to be alerted of the possibility of elevated nitrate levels.

### 5.2. **Wider Community**

- 5.2.1. The wider community has not been consulted on the scope of a pilot study for nitrates in the Cust and Eyreton areas. A media release before the pilot study will inform community members about the aims of the study, and hopefully identify private well owners who are willing to volunteer wells for sampling.

## 6. **IMPLICATIONS AND RISKS**

### 6.1. **Financial Implications**

- 6.1.1. A total cost of \$7.5k is anticipated for the pilot study, in addition to WDC staff time (see Table 1).

**Table 1:** Indicative cost of risk assessment.

Task	Cost (approximate)
------	--------------------

Sampling by the Water Unit (10 samples at \$385 / sample, including water sample analysis. Self-supplied sampling - 20 wells at \$130 per sample including courier bags, postage, and water sample analysis.	\$6,500
Project contingency	\$1,000
<b>Total</b>	<b>\$7,500</b>

- 6.1.2. Any proposal for a significant extension of a Council community water supply scheme, due to results of the pilot study, would be brought to Council for consideration as part of the Long Term Plan process.

## 6.2. Community Implications

- 6.2.1. A study of nitrate levels in private wells for all of the Waimakariri District will give the best outcomes for the community. This is because currently water quality testing by private well owners is discretionary, and results are not required to be shared with Council unless as a condition for a subdivision or building consent. Due to this situation, there is limited information of the level of nitrates in private wells.

## 6.3. Risk Management

- 6.3.1. The risk that private well owners in the Cust and Eyreton areas could be consuming water that has elevated nitrate levels over the MAV will be reduced as a result of this pilot study and subsequent communication of any treatment recommendations.
- 6.3.2. The work to warn private well users of any elevated nitrate-nitrogen level over the MAV of 11.3mg/L will commence as soon as water test results are confirmed. This is because a water test result is sufficient to alert private well owners, and there is a potential risk to human health in delaying communication of results.

## 6.4. Health and Safety

- 6.4.1. There are some health and safety considerations of water sampling staff while out in the field, which will be minimised by complying with the 'Safe Working in the Field' manual if staff from the Water Unit.

# 7. CONTEXT

## 7.1. Policy

- 7.1.1. This matter is not a matter of significance in terms of the Council's Significance and Engagement Policy.

## 7.2. Legislation

## 7.3. Community Outcomes

- 7.3.1. There is a healthy and sustainable environment for all
- 7.3.1.1. Cultural values relating to water are acknowledged and respected.
- 7.3.1.2. Harm to the environment from the spread of contaminants into ground water and surface water is minimised.

## 7.4. Delegations

- 7.4.1. No delegations apply to this report, as this report is for information only.

<b>AGENDA ITEM NO: 4</b>	<b>SUBJECT MATTER:</b> ECan Braided River Revival programme – update	
<b>REPORT TO:</b> Waimakariri Water Zone Committee		<b>MEETING DATE:</b> 2 March 2020
<b>REPORT BY:</b> Murray Griffin, CWMS Facilitator, ECan & Andrew Arps, Northern Zone Manager, ECan		

## PURPOSE

This agenda item provides the Zone Committee with an update on the Braided River Revival Programme being developed by Environment Canterbury.

This programme has two overarching purposes

1. To achieve improvements in the health of Canterbury's braided rivers by supporting the development and promotion to external partners, of a proposal for a landscape scale alignment of the agencies involved in braided river management.
2. Environment Canterbury, as a Council, has called for a step change in effort in the regeneration of freshwater, marine and terrestrial biodiversity and has recognised Braided Rivers as one of two priority ecosystems. Council's efforts to achieve the desired change are currently not well aligned internally or externally.

## BACKGROUND

### Braided River Alignment – Concept

- Alignment and collaboration with others to achieve more, faster than you could ever achieve on your own, is increasingly being recognised as smart. There are a variety of examples in NZ and overseas where alignment is showing strong results.
- New Zealand examples include the Mackenzie Basin Agency Alignment Programme, Predator Free 2050, Taranaki Mounga and Project Janszoon. In California, the One Tam five agency alliance, operating under a MOU is achieving far more for the delivery of biodiversity and recreation on Mt Tamalpais than the partners could ever achieve on their own.
- Our objective is to create a movement to advance the health of braided rivers. We would initiate this through facilitating the formation of an alliance similar to the One Tam model, with partners Papatipu Rūnanga, DoC, LINZ, and District Councils. We would initially promote the alliance for Ashley River Rakahuri but hope to extend it to all Canterbury braided rivers over time.
- The alignment would be primarily concerned with the delivery of projects by the partner agencies under a united brand. This approach is expected to bring greater understanding of objectives within both the agencies and the wider community. This should lead in turn to increased levels of philanthropic and commercial funding.
- No new entity is created, rather, partner agencies form an agreement to co-operate on a wide range of objectives and on the delivery of work programmes supported by existing funding and additional philanthropic and commercial money.

### Braided River Revival – Brand

- A brand development group with representation from Senior Management, Tuia, Regional Support, Comms, Zone Management and River Engineering worked with Christchurch marketing agency Imagic to develop a brand. This brand would not be an ECan brand, but rather a community brand shared by our partners and ultimately the community.

### **Braided River Revival – Nominal Mission & Goals**

- While the actual mission and goals will be agreed with the partners, Braided River Revival's high-level goals and objectives could be something like:

#### *Mission*

To improve mahinga kai, conservation and recreation along Canterbury's braided rivers

#### *Goals*

##### ○ **Awareness and Engagement**

Build community awareness of our braided river's mahinga kai, natural, scenic and recreational values and engage the community in stewarding and enjoying our rivers.

##### ○ **Projects and Programmes**

Fund and implement priority projects that have far reaching benefits for the stewardship of mahinga kai, natural river values and recreation resources.

##### ○ **Philanthropy and Investment**

Promote community support of Canterbury's braided rivers by securing investments of time and funding to further Kaitiakitanga and public enjoyment.

##### ○ **Partnership and Collective Impact**

Leverage the talents and resources of the partners with community groups and friends to achieve greater results through collaboration.

### **Environment Canterbury's Role**

- Environment Canterbury would act as the establishing agency and facilitator.

### **Alignment with other work programmes**

- Work programmes to be developed under the Braided River Revival umbrella will mesh with other programmes particularly in relation to tree planting. There is huge scope of poplar planting in rivers on unmanaged berms, with opportunities for 1BT and NZETS funding and offsets. Wherever deciduous exotics like poplar are planted, there will also be opportunities for NZ species nodes to encourage future natural establishment.
- Work on braided rivers may also deliver river protection functions outside of existing rating districts. For example, the current choked status of the Ashley Rakahuri between Ashley Gorge and the Okuku River may be addressed through Braided River Revival which will also have very beneficial effects for adjacent landowners concerned about lateral erosion.

### **Alignment with the Waimakariri ZIP Addendum (2018)**

This programme aligns with the following ZIP Addendum recommendations

Rec 1.22	That Environment Canterbury and the Waimakariri District Council recognise the Ashley River/Rakahuri for its important natural landscape values, braided river characteristics, and braided river bird (nesting and feeding) habitat.
Rec 1.23	That Environment Canterbury investigate funding for projects to address key environmental issues in consultation with LINZ and Department of Conservation for the Ashley River/Rakahuri, particularly the removal of woody weeds above the confluence with the Okuku River.
Rec 1.24	That Environment Canterbury and the Waimakariri District Council recognise the Upper Ashley River/Rakahuri catchment, including Lees Valley, for its high natural landscape and ecosystem values, and protect its waterways from degradation by: <ul style="list-style-type: none"> <li>• Avoiding increased contaminant losses to waterways.</li> <li>• Preventing the removal or degradation of any existing wetlands.</li> <li>• Preventing the expansion of wilding pines.</li> </ul>
Rec 2.1	The zone committee recommends that Environment Canterbury and the Waimakariri District Council work with Ngāi Tūāhuriri, landowners, agencies and stakeholders to integrate indigenous biodiversity in a whole of waterway, Ki Uta Ki Tai, approach to managing catchments in the Waimakariri Water Zone.

#### **BY WHO**

This update will be provided by Andrew Arps, Northern Zone Manager, ECan.

#### **RECOMMENDATION**

##### **That the Zone Committee**

**Receive** this update for its information and with consideration to the committee's catchment engagement in the coastal Ashley/Rakahuri, and work programme priorities in 2020.

<b>AGENDA ITEM NO: 5</b>	<b>SUBJECT MATTER:</b> Immediate Steps – update
<b>REPORT TO:</b> Waimakariri Water Zone Committee	<b>MEETING DATE:</b> 2 March 2020
<b>REPORT BY:</b> Zipporah Ploeg, Biodiversity Officer, ECan	

## 1. Purpose

- 1.1 An Immediate Steps project is presented to the Waimakariri Water Management Zone Committee for funding allocation. The project is outlined below.

## 2. Recommendation

That the Waimakariri Water Management Zone Committee:

- |  |          |
|--|----------|
| 1. Support the Immediate Steps project application |          |
| 1.1 Mānuka Swamp Project                           | \$25,000 |

## 3. Background

3.1 The Immediate Steps (IMS) funding programme was launched in 2010 as part of implementing the Canterbury Water Management Strategy. Alongside planning and other measures, this funding is used to contribute to halting or reversing the decline in indigenous biodiversity associated with the increasing use of water resources in Canterbury.

3.2 The Waimakariri Zone Committee has \$104,500 of Immediate Steps funding per year to spend on projects to protect and restore biodiversity. The below has already been allocated to the White Rock Mains QEII Covenant Project:

	FY19/20
Allocated	\$28,000

## 4. Project applications

- 4.1 The project for consideration totals \$25,000.

	FY19/20
Proposed allocation	\$25,000 (Mānuka Swamp)
<b>Totals</b>	<b>\$53,000</b> (\$51,500 unallocated)

# Mānuka Swamp

## Project Images



## Project Summary

This project is a protection project in partnership with the landowner. The project involves 1400m of new deer fencing to protect 48ha of wetland, regenerating hill scrub and a small section of Okuku Downs stream. The wetland is a red tussock swamp wetland with intact hydrology and in relatively good condition despite recent cattle access. The hill slope has been burnt in the past but is now regenerating, primarily dominated by mānuka. Okuku Downs Stream has retained its natural meander and cobble bottom.

The project has received a high ecological score of 87% (34/39) and requests \$25,000 of Immediate Steps funding, with a total project cost of \$59,000.

## Project Details

<b>Project CWMS Zone</b>	Waimakariri
<b>Project Location</b>	NZTM 1544179E 5232593N
<b>Nature of Project</b>	Protection
<b>Habitat Type</b>	Wetlands/Hill Country Catchments
<b>Project Aim (objectives and overall vision)</b>	To protect the wetland, adjacent hill slope and section of Okuku Downs Stream and allow the vegetation to recover to its best potential.
<b>Project Outcomes (what the project will achieve)</b>	New stock-proof deer fencing will be installed. This will: <ul style="list-style-type: none"> <li>- Reliably prevent access by livestock and feral deer.</li> <li>- Eliminate pugging and sedimentation into wetland and stream</li> <li>- Increased extent, density and/or diversity of native vegetation within site</li> </ul>
<b>Actions proposed to achieve outcomes</b>	<ul style="list-style-type: none"> <li>- Bulldozing fence line</li> <li>- Erection of 1.4km (approx.) of deer fence</li> </ul>

## Funding Requested

<b>Project Tasks</b>	<b>IMS Funds Requested</b>	<b>Landowner</b>	<b>Totals</b>
Construction of fences	\$25,000	\$22,000	\$47,000
Consent		\$12,000	\$12,000
<b>Total Project</b>			<b>\$59,000</b>



## Project Maps

**Map 1 Location of the project site (aerial)**



**Map 2 Location of the project site (topo)**



**Map 3 Site and Works Location Map**

## Ecological Assessment

Overall Assessment Scores		
Criteria	Score	Comments
Ecological Assessment Score (Existing and Potential) /39	34	This is a high value project that protects 48 hectares of relatively intact ecosystems including a red tussock wetland, adjacent mānuka hill slope and section of Okuku Downs Stream. The deer fence will effectively deal with some of the major threats to these ecosystems. This will also allow the vegetation to recover to its best potential.
Cultural	Unknown	
Other Criteria Overall Rating	1	The site will not have a covenant on it at this time. This is partnership value with the landowner but no other organisations at this time.
Immediate Steps Rating	High	The site is located in Less Valley and protects a wetland which are priorities for the Waimakariri Zone.



<b>AGENDA ITEM NO: 6</b>	<b>SUBJECT:</b> Committee Updates
<b>REPORT TO:</b> Waimakariri Water Zone Committee	<b>MEETING DATE:</b> 2 March 2020
<b>REPORT BY:</b> Murray Griffin, CWMS Facilitator – Waimakariri, ECan	

## PROPOSAL

This agenda item provides the committee with updates on items of follow-up from previous committee meetings.

## COMMITTEE UPDATES

The following updates are tabled for the committee:

### 1. CWMS Regional Committee

The previous Regional Committee meeting was held on Tuesday 11 February 2019. Summary notes from this meeting are provided by Carolyn Latham as **agenda item 6-1**. The next CWMS Regional Committee meeting will be on Tuesday 14 April.

The link to the CWMS Regional Committee papers is provided below:

<https://ecan.govt.nz/data/document-library/?Search=regional+water+management+committee%2C+agenda&documentTypes=-1&pageSize=12&start=1&sortDir=desc>

### 2. Plan Change 7 (Waimakariri) Update

The final submissions count is 558 for PC7 and 28 for PC2 (586 in total). Please refer to the following link to review these submissions:

<https://ecan.govt.nz/get-involved/news-and-events/2019/proposed-plan-change-7-submissions-published/>

Hearing timeline – it is anticipated the hearing starting sometime in the first half of this year, but the actual timing has not yet been set by the Independent Hearing Panel.

A Summary of Decisions Requested (including further submissions) is now available on the ECan website.

For more information, go to:

<https://ecan.govt.nz/your-region/plans-strategies-and-bylaws/canterbury-land-and-water-regional-plan/change-7/>

### 3. Waimakariri Water Zone Committee – Communications

- **Annual Report 2019**

The committee's 2019 Annual Report is provided for the committee for its sign-off. Please find it attached as **agenda item 6-2**.

- **Mahinga Kai Shed Talks**

Please find the ad to promote the first Mahinga Kai shed talks held on February 28 at the Waikuku Beach Hall as **agenda item 6-3**.

The next Mahinga Kai Shed Talk will be held on – Friday 20 March, 11 am, Kōkōmuka Lodge, Eyrewell then Ngāi Tahu Farms.

**Links to recent news items:**

- **Plan Change 7 article in Dairy News** – Please refer to this recent article in Dairy News on Plan Change 7 attached as **agenda item 6-4**.

- **Black Billed Gulls killed in Waimakariri River**

<https://www.newshub.co.nz/home/new-zealand/2020/02/black-billed-gulls-stoned-to-death-in-north-canterbury.html>

- **Private drinking wells study in Waimakariri**

<https://www.stuff.co.nz/the-press/news/north-canterbury/119644235/study-of-private-wells-in-waimakariri-finds-excessive-levels-of-toxins>

#### **4. Kaiapoi River salinity monitoring**

At the 3 February committee meeting Adrian Meredith, ECan Principal Scientist – Water Quality and Ecology, provided a short update on the monitoring of salinity in the Kaiapoi River, as requested at the 2 December zone committee meeting.

Following on from this update the committee requested further information on the salinity levels in the Kaiapoi River. In order to retrieve, collate and present this data from the data loggers currently in the river, Adrian will provide this update at the next zone committee meeting on 6 April.

#### **5. Silverstream nitrate monitoring**

At the 3 February committee meeting Adrian Meredith, ECan Principal Scientist – Water Quality and Ecology, provided a short update on monitoring undertaken for the Silverstream at Harpers Road, which has been identified as a Waimakariri Zone nitrate hotspot.

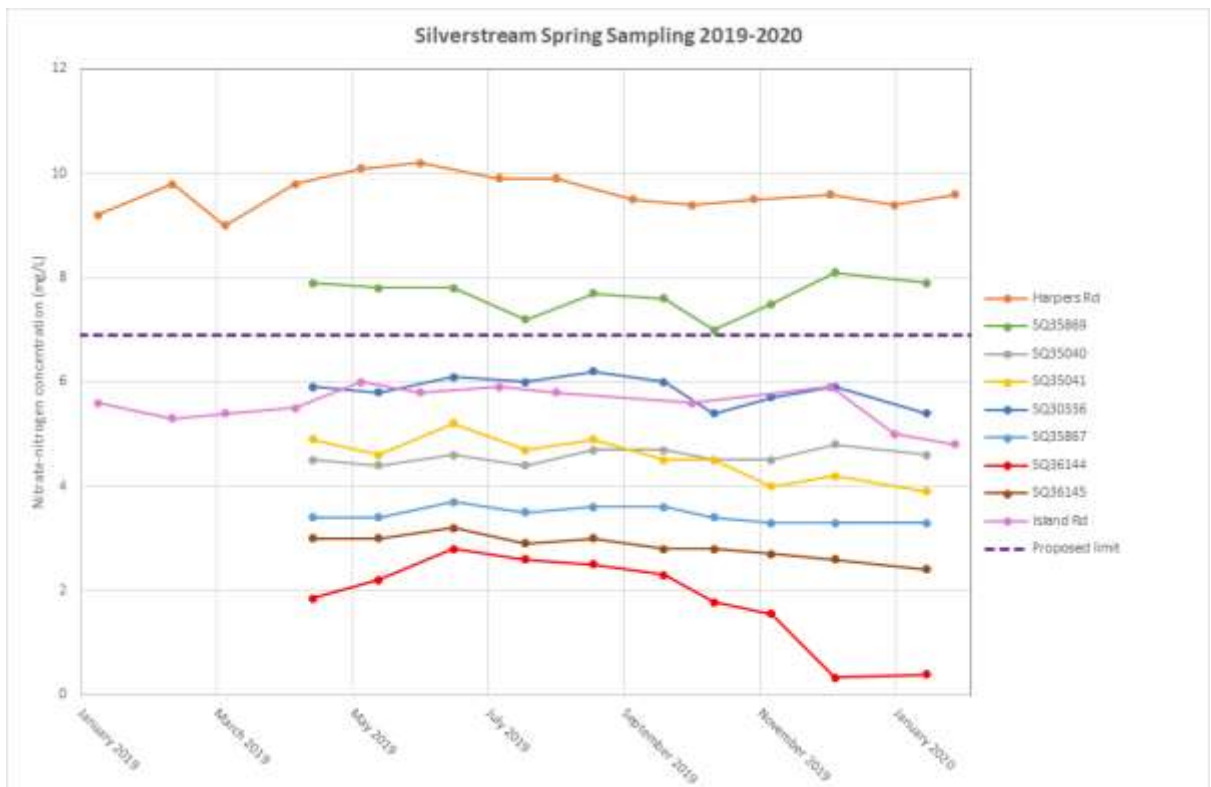
Following on from this update the committee has requested further data from the current nitrate monitoring in the Silverstream and how this monitoring has been undertaken over time.

The following response is provided by Amber Kreleger, Senior Groundwater Scientist, ECan:

- The Zone Committee papers for the February meeting contained information from Adrian Meredith about the nitrate concentrations in Silverstream at Harpers Rd, measured with the nitrate probe. The nitrate concentrations were reasonably steady around 9.0-9.7 mg/L;
- Besides the probe, our Surface Water Field Team manually samples the water quality at this site monthly. The monthly measurements are consistent with the nitrate concentrations measured with the probe.
- In April 2019 the Groundwater Field Team started a monthly sampling round of the springs feeding into Silverstream. This monitoring provides us insight into

- The map provided, as **agenda item 6-5**, shows the locations of the springs in our monthly monitoring. The graph shows the measured nitrate concentrations in each of those springs.
- For comparison, the graph also includes Silverstream at Harpers Road (upstream of the springs) and Island Road (downstream of the springs, also sampled monthly by the Surface Water Field Team).
- The data shows that the nitrate concentrations in the springs feeding into Silverstream are all below the nitrate concentration at Harpers Road. The lower concentrations (5-6 mg/L) at Island Road could indicate that nitrate concentrations in Silverstream are diluted downstream due to these springs, but to what extent is currently unclear.
- The monthly data does not show large seasonal variation except perhaps at Jeffs Drain Rd (SQ36144), but the time series is too short to draw any conclusions yet.
- WIL has installed an infiltration trench at South Eyre, 7 km upstream from Silverstream at Harpers Rd. The trench is a trial for MAR. Waimakariri River water is infiltrated at a rate between 0-60 L/s (currently 10 L/s). Due to the distance, the lag-time in nitrate transport and land use activities between the infiltration site and Silverstream (e.g. irrigation and groundwater pumping) it will be challenging to establish a relationship between the infiltration and nitrate concentrations downstream at Silverstream.
- I will update you on more groundwater monitoring efforts within the zone in upcoming Zone Committee meetings.

**Fig 1: Silverstream – Spring Sampling 2019-2020**



## **6. Ashley/Rakahuri Algal Blooms outbreaks**

The recent cyanobacteria outbreaks in the Ashley Rakahuri have been a concern for many in the community.

The following link takes you to the WDC health warning for the algal blooms occurring in the Ashley/Rakahuri, Kaiapoi Lakes, and Lake Pegasus

Link: <https://www.waimakariri.govt.nz/your-council/news-and-information/2020/01/health-warning-algal-bloom-in-the-ashleyrakahuri-river-at-sh1>

Adrian Meredith, ECan Principal Scientist – Water Quality and Ecology, will be at the meeting to provide a short update on these current outbreaks with reference to the trends in these outbreaks across Canterbury, and over time.

## **7. Camwell Park wetland ponds diversion from No. 7 Drain**

Following on from the update provided at the previous zone committee meeting (3 February) Marco Cataloni, ECan Zone Delivery Lead, will provide a short update on the follow up in addressing this issue.

## **8. Spraying around margins of Courtenay Lake and Kaiapoi River**

At the 3 February zone committee meeting the issue was raised regarding the apparent spraying along sections of the Kaiapoi River and the margins of Courtenay Lake. Sophie Allen (WDC Water Environment Advisor) has followed up on this matter, as requested by the committee, and will provide a short update for the committee at this meeting.

## **9. Waimakariri and Environment Canterbury 2020/21 Annual Plans**

From February to April this year, Waimakariri District Council and ECan will hold consultation and engagement on draft Annual Plans 2020/21. Committee members can submit as individuals. Facilitators will send through information from councils as we receive it.

The Waimakariri District Council's Annual Plan Engagement Schedule, with the special consultative procedure, will open on 6 March 2020 and close on 6 April 2020. The Draft Annual Plan and Consultation Document will be available on the Council website from 6 March 2020 to 6 April 2020.

The Environment Canterbury draft Annual Plan engagement schedule will open from 24 February to 25 March. The draft 2020/21 Annual Plan is now available, and can be accessed via the following link:

Link: <https://ecan.govt.nz/your-region/plans-strategies-and-bylaws/annual-plans/>

## **10. Coastal Rakahuri sub catchment – zone committee engagement**

In late 2019 the zone committee hosted an initial discussion with representatives of local community organisations and groups to seek their views on the 'sub-catchment'

approach to developing management/action plans, and how to best engage with the community to progress actions on the ground. Catchment management plans are a priority recommendation of the Waimakariri ZIP Addendum (2018).

It was noted at this discussion that Taranaki Stream had a relatively low number of key landowners, and a follow up discussion facilitated by the zone committee recommended a field day to bring those landowners together with representatives of other groups and organisations and discuss issues and features of Taranaki Stream. The field day was held on 10th February and involved a visit to six sites along the stream. A number of initiatives were identified and will be reviewed and advanced by the zone committee.

## **RECOMMENDATIONS**

That the Zone Committee

- **Receives** these updates for its information, and with reference to the committee's 2020 work programme and community engagement priorities.
- **Approves** the committee's 2019 Annual Report (attached as **agenda item 6-2**) or confirms any final amendments to be made to this report for presentation to both ECan and WDC Councils.



## CWMS Regional Committee Meeting Report

### 11<sup>th</sup> February 2019

1. Conflict of Interest - The committee began implementing the new process to manage conflict of interest. Committee members were asked to populate the Conflict of Interest Register that will now be in every agenda. They were then asked to declare any conflict associated with the agenda.
2. Membership - Membership of the regional committee is currently going through a phase of change as new council and Rūnanga representatives join the committee, zone committees appoint their representatives, and community members approach their refresh. The refresh is proposed to be undertaken in the next few months.
3. 2019 Annual Report - was adopted and will be presented to Ecan by the chair in the next couple of months.
4. Mayoral Forum and Central Government Update - This update provided the committee with a good overview of the work underway with the Mayoral Forum to identify initiatives TAs have underway that contribute to the CWMS and central government's freshwater and biodiversity initiatives.  
*Fit for Future Implementation* – The Operations Forum has set up a joint working group to develop advice on local government requirements to achieve the FFF goals and assist with the prioritisation of a work programme. Other agencies and interested parties work programmes are to follow. This advice is due to be finalised by May 2020 as it is needed ahead of TA 2021-2031 long term planning processes. TA's may already have work programmes underway that will meet the goals so part of this work is to identify gaps. The ongoing role of the RC will be in monitoring and reporting on outcomes rather than the details of the programmes. Supporting zone committees moving forward beyond planning to implementation is also being looked at.  
*Action Plan for Healthy Waterways* – There is no further public engagement proposed by central government and announcements are due mid-2020. It seems reasonable to assume that there will be some new water legislation before the election.  
*Three Waters Review & Water Services Regulator* - A Crown Entity was established in October 2019, and in December 2019 a Water Services Regulator Bill was introduced. By mid-2020 an NES for "sources of human drinking water and wastewater discharges and overflows" is expected to be released.  
*Resource Management Framework Review* – In Feb 2020 feedback is due on an issues and options paper, and a report to the Minister for the Environment with recommendations by the independent panel is expected mid-2020. Consultation will follow, therefore nothing is likely to happen before the election.  
*Resource Management Amendment Bill* – Submissions were heard late 2019 and the Environment Select Committee is expected to report back to the House by late March 2020.  
*NZ Biodiversity Strategy* – Submissions were due September 2019 and it is expected that the advice will have been considered by Cabinet by mid-2020. Ecan provided a copy of their submission.  
*NPS Indigenous Biodiversity* – Public consultation closes 14<sup>th</sup> March 2020.  
 NOTE: Mid-2020 should see progress/revelations on a number of these items from central government.
5. Priorities for 2020 - Within the context of the Mayoral Forum and central government work underway the committee then turned their attention to RC priorities for 2020. They have identified a long list that they are yet to prioritise.
6. Field Trip - A short field trip organised by Banks Peninsula Zone Committee was attended to observe a trial on road cutting treatments being undertaken next to a vehicle track at Christchurch Adventure Park. The trial was initiated as a result of concern about sediment run-off from road cuttings, particularly on Banks Peninsular which has readily erodible loess soils. The objective is to see what plant species will grow in loess faces, rather than constructing expensive retaining walls. A rock toe has been constructed across the bottom of all the sites because this prevents erosion of the water table and over-excavation of water tables by road

maintenance crews, which can further destabilise cuttings. It also provides a solid base for planting. Uphill overland run-off had also been piped across the sites and it was noted that planting on the slopes above a cutting is a big help in taking up water before it gets to the cutting. Six treatments are underway including a range of matting and spray-on products. Ability for the plants/seeds to be produced in commercial quantities is also an important factor. To date the best performing site is a spray-on product using indigenous grasses which tend to be deeper rooting than exotic grasses. There are doubts about how well the matting products will last and while ice plants grew well they proved attractive to possums. The project is running for 3-4 years and is monitored 3 monthly.

7. 2020 Watershed Event – Feedback from members of WZC who attended the 2018 event was provided separately to the RC facilitator.

8. Location of Agenda Papers:

<https://www.ecan.govt.nz/data/document-library/?Search=regional+water+management+committee%2C+agenda&documentTypes=-1&pageSize=12&start=1&sortDir=desc>

Carolyne Latham  
Waimakariri Water Zone Committee RC Rep

# 2019 Annual Report

## We all want to see our waterways improved



Michael Blackwell, Waimakariri  
Water Zone Committee Chair

A reflection of the Waimakariri Zone for 2019 was encapsulated at the zone committee's last meeting of the year.

Community comment covered strongly held views from both sides, Waimakariri Irrigation Ltd presented its proposed biodiversity enhancement programme at Burgess's Stream, and Waimakariri District Council reported sources of contaminants entering the urban stormwater system.

The last three decades have seen a serious decline in stream health and habitat in the Waimakariri. Action is now underway to reverse that decline.

The Canterbury Water Management Strategy 2019 targets progress report shows that more than half of our lowland streams are rated poor to very poor, with little to no life present, due to deteriorated water quality / quantity and loss of habitat. Gone are the days when you could go down to the river for a feed. Opinion on and submissions to proposed

Plan Change 7 to the Land & Water Regional Plan (PC7) are equally polarised, but the sentiment expressed by everyone is the same – we all want to see the state of our waterways improved.

This sentiment formed the core of the zone committee's recommendations for the Waimakariri part of PC7. The intention behind the regulatory framework is to work towards this goal over time. The main point of contention is how long this should take.

During the year we welcomed to the committee John Cooke from Kaiapoi (Ngāi Tūāhuriri Rūnanga), Erin Harvie (also from Kaiapoi) and Wendy Main (Oxford).

We also farewelled Grant Edge and Gary Walton. Grant was a founding committee member and Gary's contribution over the last four years was extremely valuable due to his knowledge of farming and primary industry practice.

## Key achievements 2019

- The committee's Zone Implementation Programme Addendum (ZIPA) was completed and presented to councils. Environment Canterbury addressed many of the recommendations in proposed Plan Change 7 to the Canterbury Land & Water Regional Plan.  
Drop-in sessions were arranged to support understanding, particularly of the Ashley estuary (Te Aka Aka) and Coastal Protection Zone which emerged as a planning option to help achieve the ZIPA recommendations.
- Water management leadership in the zone continued to emerge, particularly in the form of the Next Generation Farming Trust, which broadened its focus to help meet future challenges.
- The zone committee committed more than \$108,000 of Immediate Steps biodiversity funding across 8 projects during the year.
- Significant progress was made on a number of technological projects that will help address environmental bottom lines in future.

*Planting to enhance native vegetation beside the Waimakariri River is creating a "corridor" for native birds and improving biodiversity. The Waimakariri Corridor Project started five years ago and spans the Waimakariri, Christchurch West Melton and Selwyn Te Waihora zones. It includes nine restoration projects in the Waimakariri zone alone and is already contributing to the food chain in the river system. In 2018, the Waimakariri zone committee contributed \$16,000 to two of these projects. Image shows planting at Templar's Island.*





# Delivering the community's vision for freshwater

The Canterbury Water Management Strategy (CWMS) puts finding solutions for freshwater management in the hands of the community, with support from councils, Ngāi Tahu, and others. The strategy sets out freshwater goals and targets to deliver the community's vision for freshwater.











**"To gain the greatest cultural, economic, environmental, recreational and social benefits from our water resources within a sustainable framework both now and for future generations."**

Each of the ten community-led water zone committees work collaboratively to develop freshwater recommendations to ensure council plans give effect to these goals and targets.

Within each target area there are several specific time-bound targets to be achieved and these are monitored and reported on to ensure progress is being made.

The target areas are shown below – read some of the stories about what is being done in the zone to deliver on these below and on the next page.

## CWMS Targets

	Ecosystem health and biodiversity		Kaitiakitanga		Recreational and amenity opportunities		Irrigated land area		Regional and national economies
	Natural character of braided rivers		Drinking water		Water use efficiency		Energy security and efficiency		Environmental limits

## Fernside stream restoration project under way

A collaborative stream restoration project with 15 Fernside landowners aims to improve a 1.8-kilometre waterway which flows from a springhead.

A fence has been removed and sediment cleared. Riparian planting started in spring.

The group received \$49,710 of Immediate Steps funding for native plants, plant guards and maintenance. The landowners are contributing over \$125,000 of "in-kind" resources.

Riparian planting provides shade, decreases exotic weed growth and increases habitat. Sediment traps help increase water flow and reduce run-off.

The project is being carried out in stages. Dave Ashby sees it as a pilot to understand the best way for different groups to work together to improve local streams and rivers.

"We've all got different roles to play with one setting aside a paddock to create a wetland and everyone giving up a bit of land.

"Hopefully in future we'll see a significant improvement in this waterway and the return of native species such as kēkēwai (freshwater crayfish)."



Former zone committee chair Dave Ashby and former deputy chair / new Environment Canterbury Councillor Grant Edge at Fernside

## Pines Beach wetland big focus for zone committee

Pines Beach wetland is a 36-hectare open reedland in the Tūhautara Coastal Park. The park incorporates 800 hectares of coastal ecosystems from the Waimakariri River mouth to Waikuku Beach. It supports a diverse range of biota many of which are endemic (meaning only found in New Zealand). Some of these species, such as the pygmy clubrush (*Isolepis basilaris*) and bittern/matuku hūrepo (*Botaurus poiciloptilus*), are threatened.

Like many of our remaining wetlands, Pines Beach was being over taken by woody weeds. Building on previous projects, the Te Kōhaka o Tūhaitara Trust started an extensive weed control programme primarily targeting willow and beggar's tick over three years. \$83,000 of funding was committed by the zone committee from its Immediate Steps programme towards this weed control programme. Project partners contributed a further \$41,000.

The Trust has also started planting native species that have been lost from this wetland, which along with a comprehensive animal pest programme, ensures that this wetland will continue to be a biodiversity hotspot.



Pines Beach wetland



## Drop-in session for plan change

Responding to community demand for more information on the plan change that flowed from the Waimakariri ZIPA, the zone committee organised a drop-in session for those potentially affected by proposed new rules in the Ashley Estuary (Te Aka Aka) and Coastal Protection Zone. This was in addition to the 60 community sessions held while the ZIPA was being developed.

Key changes introduced by the Waimakariri part of the plan change include:

- New water quality limits for groundwater and surface water
- Requirements for farms to further reduce nitrogen losses over time
- Increases to minimum flows for rivers and streams
- A cap on the volume of water available for allocation
- Requirements to exclude stock from a broader range of waterbodies.

A public hearing of submissions and evidence is the next step in this process. The hearing, in front of an independent hearing panel, is likely to be held during the first half of 2020.



## Freshwater mussels discovered

The discovery of a freshwater mussel bed in the Hunter's Stream area could indicate the presence of other native fish.

The mussel bed was found during a biodiversity stocktake in the Waimakariri Irrigation Limited (WIL) scheme which uncovered more than 200 potential biodiversity sites.

Dan Cameron of Dan Cameron Landscape Architecture said finding the freshwater mussels was "encouraging".

His report identified Burgess's Stream, Hunter's Stream and the Old Eyre River as key areas for potential biodiversity projects.

Dan also identified the Cust River as a future greenway due to its role as a major river corridor through the irrigation scheme.

The zone committee said it was "great" to see an irrigation company taking the lead on biodiversity.

"It is creating a connected overview of possible environmental enhancements that will have a wide-reaching impact on our local waterways".

## Future challenges and opportunities

The Waimakariri zone is at a watershed in terms of its water management. We have come a long way having delivered our ZIPA, seen it translated into a proposed plan and advancing with some effective on-the-ground actions.

Now is the time to listen to our community again and move forward with our solutions programme for the next three years. A big part of this will be implementation of the ZIPA and the final form of Plan Change 7, which should be known next year.

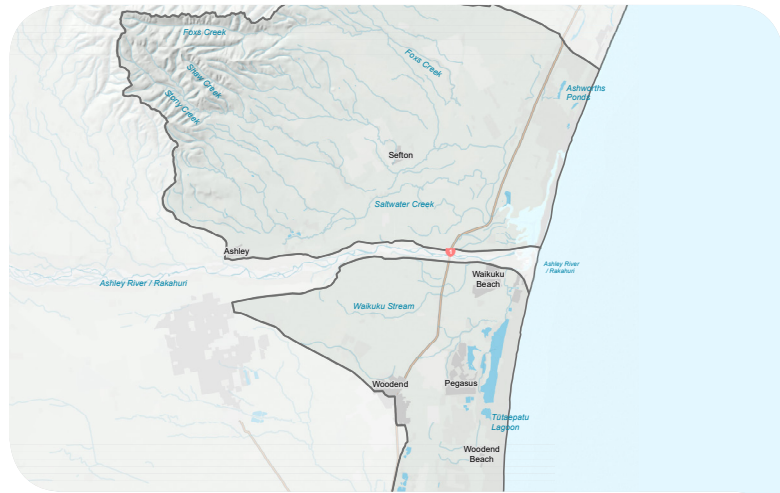
The zone committee will be focusing on working with community groups to consider catchment-specific solutions to water management.

The committee would also like to see improved monitoring of waterways to better understand emerging contaminant risks.

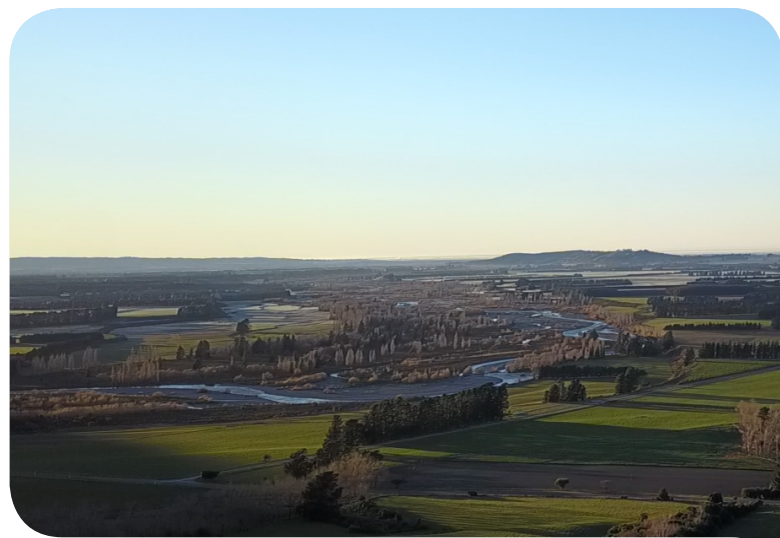
Of the 90 recommendations in the ZIPA most are non-regulatory. These will need support from both councils and the community if they are to be effective.

Funding is critical to making progress. The whole community and the private sector have a role to play. The zone committee can offer Immediate Steps funding, but more is needed.

Recommendation 3.25 of the ZIPA calls for targeted rating to direct funding to our waterways. The committee hopes that new councillors in both councils recognise the importance of work needed and prioritise accordingly. We also need large contributions from industry and central government.



Ashley Estuary (Te Aka Aka) and Coastal Protection Zone



Freshwater mussel bed could indicate the presence of native fish.

And of course we now have some strong policy signals coming from central government, via Action for Healthy Waterways, for more big water management changes to come - most of which the Waimakariri community is already facing.

With this proposed framework we need to look at issues through a different lens that lists priorities in a different way. Working together as a community, we should focus on section 1.1:

"The health and wellbeing of the water will be put first in decision making. Providing for human needs, such as drinking, will be second; other uses will be third."

With its refreshed membership, the zone committee will be looking to increase the momentum and establish, working in collaboration with the community, where it can make the most difference.

There are so many opportunities; priority setting and effective planning will be crucial. Community-driven catchment management plans may be a good way to advance water quality improvement via rehabilitation work such as streamside planting, wetland creation and improving fencing setbacks. The zone committee started developing ideas for sub-catchment planning and action with the Taranaki community, and will continue this in 2020.





The zone committee responsible for developing the Zone Implementation Programme: David Ashby, Claire McKay, Sandra Stewart, Judith Roper-Lindsay, Carolyne Latham, Grant Edge, Michael Blackwell, Gary Walton, Cameron Henderson.

## Zone description

The Waimakariri Zone boundaries are similar to those of the Waimakariri District Council. The zone lies north of the Waimakariri River and extends from Pegasus Bay in the east to the Puketeraki Range in the west.

Much of the land to the eastern part of the zone is naturally subject to poor drainage and occasional flooding.

The rivers, streams, lagoons and wetlands have always been important places and a food basket for Ngāi Tūāhuriri. The zone is part of the Rūnanga's takiwā.

## Zone committee membership

Michael Blackwell, Chair\*  
Community member

Cameron Henderson,  
Deputy Chair  
Community member

Carolyne Latham  
Community member

Judith Roper-Lindsay  
Community member

Erin Harvie  
Community member

Wendy Main  
Community member

David Ashby\*  
Community member

John Cooke  
Rūnanga representative  
Ngāi Tūāhuriri

Arapata Reuben  
Rūnanga representative  
Ngāi Tūāhuriri

Sandra Stewart  
Waimakariri District  
Councillor

Claire McKay  
Environment Canterbury  
Councillor

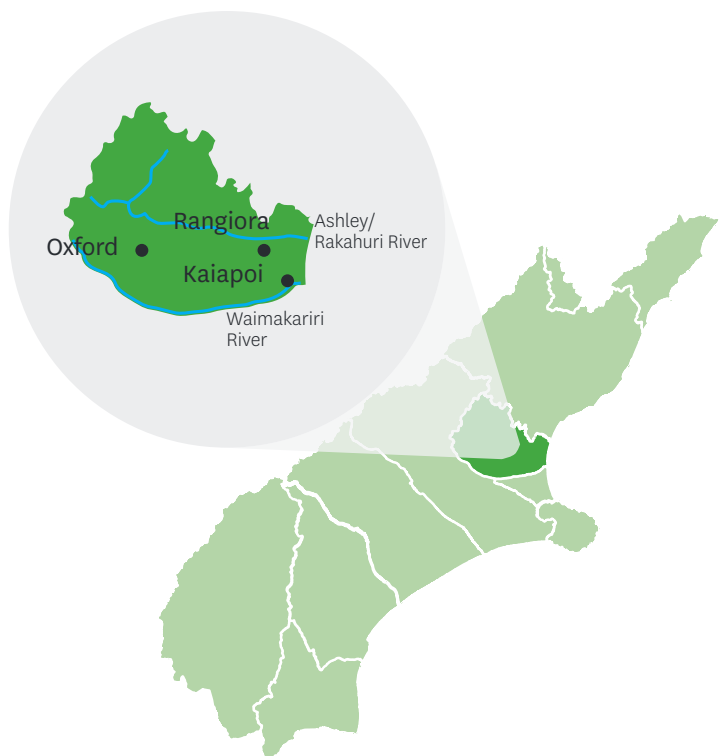
\*Michael Blackwell replaced David Ashby as Chair part way through the year

## Key Zone contacts

**Andrew Arps** - North Canterbury Zone Manager  
Andrew.Arps@ecan.govt.nz | 027 554 4007

**Murray Griffin** - Waimakariri Water Zone Committee Facilitator  
Murray.Griffin@ecan.govt.nz | 027 705 4798

**Marco Cataloni** - North Canterbury Zone Lead  
Marco.Cataloni@ecan.govt.nz | 027 241 7951



The Waimakariri Water Zone Committee is a community led committee supported by councils.

[ecan.govt.nz/water](http://ecan.govt.nz/water)

R20/06 E19/7749



# Farmers – let's talk about mahinga kai

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## Crayfish in your drain? Lizards in your flax? Whitebait in your creek?

You'll already have areas you're taking special care of – but there will be more.

Join Environment Canterbury cultural land management advisor Makarini Rupene to find out about mahinga kai on your farm.

**Where:** Starting at Waikuku Beach Hall, Domain Road, Waikuku, then visiting a couple of local farms.

**When:** Friday 28 February, 11am (doors open at 10.45am for morning tea courtesy of Synlait)

**RSVP:** Email [events@ecan.govt.nz](mailto:events@ecan.govt.nz) by 21 February or call 021 116 8099. All welcome.

 **Environment  
Canterbury**  
Regional Council  
*Kaunihera Taiao ki Waitaha*

*Facilitating sustainable  
development in the  
Canterbury region  
[www.ecan.govt.nz](http://www.ecan.govt.nz)*

## DAIRY NEWS Article – 18 February 2020

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PROPOSED NEW environmental rules for the Waimakariri District will drive some farmers off their land, say farmers and their support groups. The district is facing new rules under the proposed Plan Change 7 to the Canterbury Land & Water Regional Plan (CLWRP), which calls for staged cuts to Nitrogen losses over coming decades – up to 90% reductions in some specified zones.

One dairy farmer in the most-affected “purple zone” near Oxford said he had a consultant run the figures for his farm and it showed that at 30% reduction he might as well “give the keys to the bank” and walk away. The man, who asked not to be identified, is a fourth-generation dairy farmer who came to the district six years ago with his parents and young family. “I’m 36 years old and to hear that you’ve got no future it’s pretty hard. I’ve just worked my guts out to get to the position I’m in.” Submissions on the Plan Change, which will also bring in new rules for the Orari Temuka Opihi Pareora (OTOP) sub-region in South Canterbury, have now closed and are expected to go to hearings in May.

Under the plan, the Waimakariri sub-region is divided into a nitrate priority area, where nitrate levels are the main concern, and a runoff priority area where phosphorus, sediment and EColi are the main issues. Within the nitrate area are different zones according to catchment, with differing schedules of N-loss mitigation required, staged over 20 to 30 years. Eyrewell farmer Scott Evans, chairman of the Waimakariri Next Generation Farmers Trust, which was formed last year to help influence environmental policy, said it could be “game over” for some farmers. He said farmers wanted common-sense changes rather than a broad-brush approach imposed by “a guy in an office” who doesn’t understand the long-term feasibility. Evans said within the nitrate area were different zones according to catchment. “There’s a first stage reduction, then a second stage reduction, then some zones just keep reducing until literally they’ll be gone from farming.” “There’s a floor in there which will see you able to do maybe sheep farming if you’re lucky but these guys have got a lot invested in their land and the land’s valued so high that it’s just going to take the rug out from underneath them.”

Evans said his group was “really clear” that it was unfair to treat it as a dairy farm problem and treat people differently within a catchment, so that a dairy farmer miles from any other dairy farm is the one who’s losing his farm. Farmers wanted to do the right thing but needed to be able to do it. “If they bring these changes in, straight away the mechanisms of finance kick in. The land value plummets therefore you’ve got no equity. You can’t invest, you can’t do these things and it’s going to have a negative impact on the environment.”

Environmental consultant Paul Reese, who heads Waimakariri Irrigation Ltd’s environmental management, said ECan had looked at issues in the district’s lowland streams and realised that to make any sort of difference there were things that had to happen further up the catchment. “And what they proposed is pretty substantive.” “If the Plan Change goes ahead and these people have to make a 90% reduction in N loss, it’s game over for them. It really is.” It would bring N-losses down to levels characteristic of dryland tussock country. “And there’s already farm investment, there’s family investment, there’s social investment, there’s lots of lots of capital involved and you cannot change your dairy farming system to a dryland tussock-based system and hope to pay back the loans you’ve already got.” Reese said that as a scheme, WIL recognised there were issues to be addressed, and that irrigation has had an impact. But he queried whether focussing on N loss and land use of individual farms was the only course of action. WIL was looking to other mechanisms to provide extra water to dilute and improve flow in lowland streams, including stream augmentation, managed aquifer recharge and in-stream ecological improvements. It also wanted better measurements in aquifers and waterways to better understand the problem, he said.





Spring Sampling Sites

SITE_ID	SITE_NAME	SOURCE	NZTMX	NZTMY
SQ30336	NEEVES RD BRIDGE	KAIAPOI RIVER	1569395	5195181
SQ32943	U/S HARPERS ROAD	KAIAPOI RIVER	1564806	5191959
SQ35040	BURGESS RD	EYRE MAIN DRAIN	1567890	5194321
SQ35041	DRAIN ON CNRTRAM & BURGESS RD	KAIAPOI RIVER	1568020	5194961
SQ35867	GARDINERS ROAD	ENGLEFIELD STREAM	1568430	5195331
SQ35869	SPRING ADJACENT SOUTH EYRE ROAD	M35/7483 (SPRING)	1565613	5192685
SQ36144	AT JEFFS DRAIN RD	OHOKA TRIB	1568325	5196661
SQ36145	WEST OFF BUTCHERS RD	OHOKA TRIB	1568958	5196575



Spring sampling locations Silverstream / Kaiapoi River



**MINUTES OF THE MEETING OF THE CANTERBURY WATER MANAGEMENT STRATEGY WAIMAKARIRI ZONE COMMITTEE HELD IN THE WAIMAKARIRI DISTRICT COUNCIL CHAMBERS, 215 HIGH STREET, RANGIORA ON MONDAY 3 FEBRUARY 2020 AT 4.00PM.**

**PRESENT**

Michael Blackwell (Chairperson), Cameron Henderson (Deputy Chairperson), Dave Ashby, Carlyne Latham, Judith Roper-Lindsay, Wendy Main, Erin Harvie, John Cooke (Te Ngai Tūāhuriri Rūnanga representative), Sandra Stewart (Councillor Waimakariri District Council) and Megan Hands (ECan Councillor)

**IN ATTENDANCE**

B Stokes (Farmer), L Pocock (Oxford Farmers Market) M Bate (Kaiapoi Resident), J Ensor (Mandeville Residents Association), D Camron (Waimakariri Irrigation Ltd), P Reese (Waimakariri Irrigation Ltd), P Camron (Terra Centric).

G Cleary (WDC Manager Utilities and Roading), O Davies (WDC Drainage Assistant Manager), S Allen (WDC Water Environment Advisor), K Steel (WDC Ecologist-Biodiversity), M Cataloni (ECan), A McLeod (ECan), S Bragg (ECan), A Arps (ECan), M Griffin (CWMS Facilitator, ECan) and T Kunkel (WDC Governance Team Leader).

**1 BUSINESS**

**1.1 Karakia**

S Bragg provided the karakia to open the meeting.

**1.2 Apologies**

Moved: D Ashby

Seconded: J Cooke

An apology was received and sustained from Arapata Reuben for absence.

**CARRIED**

**1.3 Welcome and Introductions**

The Chairperson welcomed all the members present. He extended a special word of welcome to new ECan Councillor M Hands. The Chairperson also requested the CWMS Waimakariri Zone Committee members to introduce themselves to the people present. Officials and members of the public were also given an opportunity to introduce themselves.

**1.4 Register of Interests**

Item 2.1 - J Roper-Lindsay declared that she was contracted by Waimakariri Irrigation Ltd (WIL) to work on the biodiversity study. However, she has not worked for (WIL) in the last six months.

## **2. OPPORTUNITY FOR THE PUBLIC TO SPEAK**

### **2.1 L Pocock (Oxford Famers Market)**

L Pocock referred to an article that appeared in the Press newspaper on 3 February 2020 regarding a study on the possible link between nitrates and cancer. She advised that a Danish study last year found a correlation between nitrate levels in groundwater and bowel cancer. It seemed that nitrate levels were rising across New Zealand, especially in Canterbury due to dairy farming.

L Pocock advised that the Central Government has set up a task force that included members from the ECan and the region's Health Board to investigate the issue. It would therefore seem that they were reconsidering its current nitrate regulations.

L Pocock further stated that it was found that some forms of intensive farming appeared to put extreme pressure on local water resources that would not be sustainable in the future. Nitrates were also found to have a negative effect on the human cardio vascular system.

In light of the above, L Pocock requested the CWMS Waimakariri Zone Committee to consider lowering the acceptable level of nitrates in Canterbury waterways.

### **2.2 M Bate – Kaiapoi Resident**

M Bate showed various photos taken of rivers within the Waimakariri district and expressed a concern regarding the high level of algae found in these rivers, regardless of the recent flooding experienced in the area. He stated that the native species were not able to breed in this environment.

M Bate also showed videos taken of the Ashley River and the Cust Main Drain that showed algae build up on the riverbeds. He stated that the sediment and toxic algae in the Ashley River were emanating a foul odor. He recommended that the minimum flow of the rivers therefore needed to be increased.

M Bate advised that he still believed that the increase of algae in the waterways were caused by fertilizer and that farmers needed to investigate the possibility of using more environment friendly fertilizers. C Henderson questioned this assumption as there were waterways not exposed to fertilizer that also had algae problems. There was a multitude of reasons for algae to grow in waterways.

Councillor S Stewart enquired if M Bate measured the water temperature in the rivers to ascertain if it may have had an influence on the algae growth. M Bate confirmed that he did not take a temperature reading.

M Bate expressed a concern that the vegetation on the banks of the Kaiapoi River and at Courtney Lake were sprayed with herbicides. The Chairperson shared M Bate's concern and requested S Allen to investigate the matter and to report back to the CWMS Waimakariri Zone Committee.

C Latham thanked M Bate for the photos and the videos before reminding the CWMS Waimakariri Zone Committee that there was a number of good management practices included in Farm Management Plans. Efforts have therefore been increased to encourage farmers to implement Farm Management Plans. Once more farmers were on board there should be a better management of any problems that may be caused by fertilizer.

## **3. BURGESS STREAM PROJECT – UPDATE**

D Cameron and P Reese from WIL were present to update the CWMS Waimakariri Zone Committee on this project. D Cameron provided a background of WIL's stock-

take to biodiversity review conducted last year. Sites of biodiversity significance were identified that needed to be protected.

D Cameron highlighted where Burgess's Stream was located and advised that the stream was identified as a flagship project as it contained a cluster of springheads and seemed to have been very well protected. A lot of work had been done to identifying various potential biodiversity opportunities along Burgess's Stream, but after investigation, it was decided to focus on wetland restoration in the area.

D Cameron reported that WIL has finalised a Restoration Plan and has developed a Monitoring Plan which were fundamental to establish a baseline to monitor future success. These plans were developed in consultation with the landowner, who was committed to the long-term success of this project. The Waimakariri District Council (the Council) and ECan were also consulted.

D Cameron explained the proposed process to be undertaken to restore the area and also provided an example of a successful wetland restoration project in the Waikato area. He stressed the importance of keeping up the momentum of the project, especially in light of the current positive landowner buy-in. However, the implementation of the project needed funding and WIL was therefore looking for support from the CWMS Waimakariri Zone Committee.

P Reese expressed a concern that there seem to be no biodiversity plan across the district to coordinate and provide future vision for the district as a whole. WIL was therefore unsure of what biodiversity projects to initiate in the future.

Councillor S Stewart enquired why the Burgess's Stream project did not qualify for Immediate Steps Funding and/or why WIL did not levy a rate for biodiversity projects across its scheme.

D Cameron explained that WIL was currently liaising with ECan to establish if the project would qualify for Immediate Steps Funding and ECan was in the process of evaluating the project.

A Arps advised that a report on the possible Immediate Steps Funding for the Burgess's Stream project would be submitted to the CWMS Waimakariri Zone Committee for consideration in March 2020.

J Roper-Lindsay reminded the CWMS Waimakariri Zone Committee that ECan undertook to review the Immediate Steps Funding requirements for the Waimakariri district, as there were so few projects that would be able to comply with the existing criteria. She stated that the project was urgent and therefore requested that an interim report on this matter be submitted to the CWMS Waimakariri Zone Committee for consideration before the Committee's meeting in March 2020.

A Arps advised that WIL still needed to apply for Immediate Steps Funding, where after their application would be evaluated against the current funding criteria. If possible, a report would be submitted to the CWMS Waimakariri Zone Committee for consideration before the Committee's meeting in March 2020.

In response to questions, D Cameron explained why there was a delay in WIL's application. They now seem to have a better understanding of the work that needed to be done and could therefore proceed faster. P Reese and D Cameron highlighted why Burgess's Stream was chosen for a Wetland restoration project.

With regard to a possible levy for biodiversity projects, P Reese advised that most of the biodiversity projects would be implemented on private owned land. It would be considered unreasonable to levy all the shareholder for the benefit of only a few individual shareholders. Councillor Stewart suggested that the matter should be discussed with the schemes shareholders, as these projects would be of great public benefit. This commitment from WIL's shareholders may inspire other organisations to also fund possible biodiversity projects.

J Roper-Lindsay reported that biodiversity planning across the district was being coordinate through the various Catchment Plans and also the WDC's biodiversity management strategy and plans. She therefore suggested that WIL should work closely with the Council in identifying possible future biodiversity projects.

In response to a question from M Griffin, D Cameron confirmed that WIL's application for funding from the One Billion Trees Programme was not successful, as the money was specifically identified for trees.

Moved: J Cooke

Seconded: J Roper-Lindsay

**THAT** the CWMS Waimakariri Zone Committee:

- (a) **Receives** briefing for its information and consider options for how this project could be further supported.

**CARRIED**

#### **4. COMMITTEE APPOINTMENTS FOR 2020**

*M Blackwell stepped down as Chairperson, with the CWMS Facilitator, M Griffin, temporarily facilitating meeting.*

M Griffin reminded the CWMS Waimakariri Zone Committee that a Chairperson and Deputy Chairperson needed to be appointed at the first meeting of each year. The Committee also needed to appoint a representative to the CWMS Regional Committee for 2020.

M Griffin called for nominations for Chairperson.

Moved S Stewart

Seconded J Cooke

**THAT** the CWMS Waimakariri Zone Committee:

- (a) **Appoints** Michael Blackwell as Chairperson for 2020.
- (b) **Appoints** Cameron Henderson as Deputy Chairperson for 2020.
- (c) **Appoints** Carolyn Latham as CWMS Regional Committee for 2020.

**CARRIED**

*The CWMS Facilitator, M Griffin, then vacated the Chair in favour of the elected Chairperson, M Blackwell.*

#### **5. COMMITTEE UPDATES – M GRIFFIN (CWMS FACILITATOR, ECAN)**

##### **5.1 WDC Ecologist- Biodiversity**

The WDC Ecologist- Biodiversity, K Steel, introduced herself to the CWMS Waimakariri Zone Committee. She provided a brief overview of her background and her future role.

The Chairperson welcomed K Steel on behalf of the CWMS Waimakariri Zone Committee and expressed his hope that she would be working closely with the Committee.

##### **5.2 CWMS Regional Committee**

C Latham advised that the previous Regional Committee meeting was held on Tuesday 10 December 2019.

### **5.3 Plan Change 7 (Waimakariri) Update**

M Griffin reported it was anticipated that the hearings on the proposed Plan Change 7 to the Land and Water Regional Plan would start during the first half of this year. A Summary of Decisions had been requested and had been published on ECan's website, and the opportunity to lodge a further submission was now closed.

### **5.4 Waimakariri Water Zone Committee – Communications**

M Griffin advised that two articles have been released since the CWMS Waimakariri Zone Committee's previous meeting. The first provided a profile on Makarini Rupene and his role at ECan as Pou Matai Ko – Cultivating and Understanding of Mahinga Kai. The second article provided an overview of Waimakariri Irrigation Limited's progress with Farm Environment Plans.

A McLeod advised that the Waimakariri Zone Team would be hosting a series of "shed talks" where farmers could visit farms that have already started their mahinga kai enhancement projects. J Cooke requested that CWMS Waimakariri Zone Committee members be invited to the abovementioned "shed talks".

### **5.5 Ashley/Rakahuri River Vegetation Restoration project**

A Arps reported that ECan conducted an air inspection of the vegetation along the Ashley/Rakahuri River, and work on the elimination of the invasive wooden weeds in the upper catchment would start soon. ECan was currently considering various options for the pilot project. The CWMS Waimakariri Zone Committee would however be kept updated.

J Roper-Lindsay questioned if the pilot project would start with the removal of Willow Trees on the banks opposite R Johnston's property. A Arps confirmed that this was the plan, but the cleaning out of the Willow Trees would not be done all the way down to Waikuku Beach.

### **5.6 Ashley/Rakahuri Braided River Programme**

A Arps provided feedback on the development of the Ashley/Rakahuri Braided River Plan. The Ashley/Rakahuri would be the first Braided River Plan in the region and a report on the 'overarching' Braided River Plan/Approach would be submitted to the CWMS Waimakariri Zone Committee for consideration in March 2020.

### **5.7 Kaiapoi River salinity monitoring**

M Griffin highlighted the following points:

- ECan continued to maintain the salinity monitoring loggers in the river.
- Preliminary discussions were held with the National Institute of Water and Atmospheric Research (NIWA) on the possible establishment of a salinity predictive model.
- Some additional water quality monitoring approaches would be considered for programmes in the next financial year.

Councillor S Stewart requested if the CWMS Waimakariri Zone Committee members could be provided with the results of the salinity monitoring loggers on a regular basis.

### **5.8 Silverstream nitrate monitoring**

M Griffin confirmed that the Silverstream–Harpers Road Nitrate monitoring results were for the period July 2019 to date. Since July 2019 the nitrate concentration had been remarkably stable, but still high.

Councillor S Stewart requested if the CWMS Waimakariri Zone Committee be update on how the Nitrate monitoring was being done.

### **5.9 Impact of chemical use on aquatic life die off in Waimakariri waterways – update**

M Griffin reported that the primary investigations into the die-off of aquatic life in several locations and associated chemical use into waterways, as previously suggested by M Bate, was underway. The option of trialling an area where chemical application was not used along a waterway, to monitor habitat recovery, was also being considered.

J Roper-Lindsay advised that a small area where chemicals were not used would not be enough, as the impact of the chemicals on the downstream systems also needed to be monitored. M Bate agreed and stated that chemicals had been used along Waimakariri waterways for the last 25-year, so the validity of the study would be in question.

M Griffin further confirmed that the CAREX report on the “Persistence and ecological consequences of glyphosate to control aquatic weeds in Waimakariri lowland waterways” had been forwarded to CWMS Waimakariri Zone Committee for information.

### **5.10 Waimakariri River flow gauging**

M Griffin reported that the proposed Alpine Rivers section of the Canterbury Land and Water Plan was scheduled to be undertaken in 2026/27. He also requested the CWMS Waimakariri Zone Committee members to note the relocation of the gauging site in the lower Waimakariri River below the SH1 Bridge.

### **5.11 Camwell Park wetland ponds diversion from No. 7 Drain**

M Cataloni advised that the Council and ECan met with Camwell Park subdivision residents last year to discuss the matter of the ponds. Although ECan’s investigations were still ongoing, and the issue had not been resolved, the water flow had been reinstated, but at a much lower rate. The landowners have been advised that any future divisions of this nature would be subject to resource consent use applications. ECan was currently investigating the possibility of regulating the flow of the water through the pipe.

M Cataloni confirmed that ECan would be working with the landowners to lodge a resource consent use application for the current diversion to allow for just enough water to sustain the wetland ponds (estimated at approximately 2 to 3l/s).

D Ashby advised that the unconsented diversion estimated at approximately 114l/s was contributing to the flowing in the Cust Main Drain. It was also known that this divisions were over allocated. He held the opinion that this unconsented diversion set a dangerous precedent. M Cataloni agreed but highlighted the historic nature of the diversion which needed to be taken into consideration.

Councillor S Stewart stated that the Cust Drainage Advisory Committee had raised concerns regarding the unconsented diversion on many occasions, and yet it was allowed to continue. She asked why the landowners could not sink a well if they wished the wetland ponds to continue. M Cataloni explained that a well would not be connected to the drainage system.

J Roper-Lindsay stated that the CWMS Waimakariri Zone Committee's main concern should be the protection of the biodiversity in the area. She therefore supported ECan's proposal to assist the landowners to lodge a resource consent use application for just enough water to sustain the wetland ponds.

D Ashby advised that the Cust Water User Group had worked very hard over the last few years to ensure water quality and biodiversity. He questioned the biodiversity was created by the artificial wetland ponds. He stressed that most landowners worked hard to be legal and follow the rules and it was unfortunate that situations such as these occurred.

M Blackwell requested M Cataloni to keep the CWMS Waimakariri Zone Committee updated on this matter.

#### **5.12 Ngahere Rongoā (Wahi whero)**

M Griffin reported that M Rupene presented the proposed Red Zone Mahinga Kai Project to the Kaiapoi-Tuahiwi Community Board in December 2019.

Councillor S Stewart explained that this red zone area had significant cultural value for the Te Ngāi Tūāhuriri Rūnanga and Te Rūnanga o Ngāi Tahu. It was envisaged that the Mahinga Kai Project would create an edible forest, consisting of a wetland and a Podocarp. Funding had already been secure for the project and once the project was endorsed by the Ngāi Tūāhuriri Rūnanga it would be tabled for consideration at the Regeneration Steering Group meeting.

Councillor S Stewart noted that the area being considered was the red zoned blocks between Bowlers Street, Raven Quay and along Courtenay Drive, along the south bank of the Kaiapoi and around to the Courtenay Stream.

#### **5.13 WDC 'ZIPA projects' and related 3 Waters work**

S Allen updated the CWMS Waimakariri Zone Committee on the progress being made by the WDC with the implementation of the Zone Implementation Programme Addendum (ZIPA) recommendations. She highlighted the following issues:

- The MOU between ECan and Council staff would be finalised by the end of February 2020.
- There had been a postponement in the Council's Drainage and Minor works consent. This was the consent under which the Council was going to do such projects as fish passages and the Inanga spawning area improvements. All proposed projects that required earth works were on hold until the Council was able to draft a Management Plan to submit with the Drainage and Minor works consent.
- There had also been a delay with the Council's Stormwater Network Discharge consent for the four urban areas. The Tūāhuriri Rūnanga cultural assessments for these consents needed to be updated to take into consideration of the Te Ngāi Tūāhuriri Rūnanga and Te Rūnanga o Ngāi Tahu rights over fresh water.
- The Council was investigating the possibility of undertaking a trail 'shade drainage project'.
- The native planting and weed control were undertaken at Southbrook and Townsend Fields. A planning session would also be undertaken with a local school group in autumn.



- An autumn planning session would also be undertaken at Taranaki Stream near the floodgates.
- Improvements had been made to the Inanga spawning area in Courtenay Stream, by removing some Pampas and Willow Trees.
- Improvements had also been made to the Inanga spawning area in the McIntosh Drain, by spraying and removing Willows Trees.
- The results of the study on Nitrate levels in private-owned wells in the Cust area would be submitted to the Committee for consideration at its March 2020 meeting.
- The Council and ECan had developed a "How to drill a well" brochure" that would be discussed the communications team prior to publication. C Henderson noted that it may be useful to education of drillers in the district on various groundwater issues, such as water quality.

Moved: D Ashby

Seconded: Councillor S Stewart

**THAT** the CWMS Waimakariri Zone Committee:

- (a) **Receives** these updates for its information and regarding the Committee's Work Programme and Community Engagement Priorities for 2019/20.

**CARRIED**

## **6 CONFIRMATION OF MINUTES**

### **6.1 Minutes of the Canterbury Water Management Strategy Waimakariri Zone Committee meeting – 2 December 2019**

Moved: D Ashby

Seconded: C Latham

**THAT** the CWMS Waimakariri Zone Committee:

- (a) **Confirms** the Minutes of the Canterbury Water Management Strategy Waimakariri Zone Committee meeting, held on 9 September 2019, as a true and accurate record.

**CARRIED**

### **6.2 Matters Arising**

None

## **7 GENERAL BUSINESS**

J Roper-Lindsay suggested that the CWMS Waimakariri Zone Committee received a regular report on the work being done by the Council's Land and Water Committee. M Griffin undertook to ensure that updates of the Council's Land and Water Committee were included as a Standing Item in the Committee agenda.

## **8 KARAKIA**

S Bragg provided the karakia to close the meeting.

## **9 NEXT MEETING**

M Blackwell thanked the Committee members, staff and members of the public for their attendance and advised that the next CWMS Waimakariri Water Zone Committee meeting would be held on Monday 2 March 2020.

THERE BEING NO FURTHER BUSINESS, THE MEETING CLOSED AT 6:10PM.  
CONFIRMED

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Chairperson

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Date