



Waitaki
DISTRICT COUNCIL
TE KAUNIHERA Ā ROHE O WAITAKI



Everything is connected
Promoting quality of life through
balanced resource management.



**Notice is given of a Upper Waitaki Zone Water Management Committee Meeting
to be held on:**

Date: Friday, 20 September 2019

Time: 9.30am

**Location: Mackenzie Country Inn
Twizel**

AGENDA

Upper Waitaki Zone Water Management Committee Meeting

20 September 2019

Upper Waitaki Zone Water Management Committee Membership:

Simon Cameron (Chair)
Lisa Anderson
Matthew Bayliss
Sandra Hampstead-Tipene
Richard Subtil
John Sunckell
John Wilkie
Craig Dawson
Stuart Barwood
Joy Paterson
Kieran Whyte

The purpose of local government:

(1) The purpose of local government is—

- (a) to enable democratic local decision-making and action by, and on behalf of, communities; and
- (b) to meet the current and future needs of communities for good-quality local infrastructure, local public services, and performance of regulatory functions in a way that is most cost-effective for households and businesses.

(2) In this Act, good-quality, in relation to local infrastructure, local public services, and performance of regulatory functions, means infrastructure, services, and performance that are—

- (a) efficient; and
- (b) effective; and
- (c) appropriate to present and anticipated future circumstances.

(Local Government Act 2002)

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- 1 OPENING**
- 2 APOLOGIES**
- 3 DECLARATIONS OF INTEREST**
- 4 VISITORS**

5 REPORTS

5.1 UPPER WAITAKI ZONE REGISTER OF MEMBERS INTERESTS

File Reference: na

Author: Andrea Adams, Governance Advisor (Temp)

Authoriser: Darren Brown, Information and Engagement Manager

Attachments: Nil

STAFF RECOMMENDATIONS

That the information be noted.

Register of Interests Upper Waitaki Zone Committee

Committee Name	Member	Interests
	Lisa Anderson	Farmer and irrigator on the shores of Lake Benmore.
	Stuart Barwood	Chairman Assets and Services committee MDC, trustee of Helwood Trust.
	Mat Bayliss	Chairs the Meridian Energy Te Anau / Manapouri Community Fund. Asset Maintenance Manager for Meridian Energy in Twizel.
	Simon Cameron	Local merino sheep and beef farmer. Director with Merino NZ Incorporated.
	Craig Dawson	N/A last meeting on 16 August
	Sandra Hampstead-Tipene	N/A last meeting on 16 August
	Joy Paterson	Member of Canterbury Aoraki Conservation Board, Trustee of LineTrust South Canterbury. Husband is a Mackenzie District Councillor.
	Richard Subtil	Farmer and irrigator in Omarama Catchment. Member of Omarama Stream Water Users Group
	John Sunckell	Register of interest held by Environment Canterbury
	Keiran Whyte	Te Rūnanga o Moeraki
	John Wilkie	Te Rūnanga o Waihao. Involved with the T.R.O.N.T land tenure review. Representative on the Waitaki Native Fish Committee.

5.2 UPPER WAITAKI ZONE COMMITTEE MEETING TIMETABLE**File Reference:** na**Author:** Andrea Adams, Governance Advisor (Temp)**Authoriser:** Darren Brown, Information and Engagement Manager**Attachments:** Nil

Upper Waitaki Zone Committee Meeting Friday 20 September 2019 9.30am Mackenzie Country Inn, Twizel			
9.00am	Item	Arrive/cup of tea	Lead
9.30am		Standing Items Apologies, Minutes, Correspondence, Action List, Matters arising	
9.45am	1	Regional Committee Update	Mat Bayliss
9.55am	2	Ahuriri Arm Lake trophic limits – next steps Update	Tami Woods, Environment Canterbury
10.15am	3	Clay Cliffs	Graeme Clarke, Environment Canterbury
10.50 – 11.10		Morning tea	
11.10am	4	Lake Middleton	Ian Whitehouse, Environment Canterbury
11.40am	5	Mackenzie Dryland Heritage Area	Jeremey Severinsen, Department of Conservation
12.15pm	6	Zone Facilitator's Report	Tami Woods, Environment Canterbury
12.20pm	7	General Discussion	All
12.30pm		Close and lunch	

5.3 MINUTES OF UPPER WAITAKI ZONE WATER MANAGEMENT COMMITTEE MEETING - 16 AUGUST 2019**File Reference:** na**Author:** Andrea Adams, Governance Advisor (Temp)**Authoriser:** Darren Brown, Information and Engagement Manager**Attachments:** 1. Upper Waitaki Zone Minutes 16 August 2019  **RECOMMENDATION**

That the Minutes of the Upper Waitaki Zone Water Management Committee Meeting held on Friday 16 August 2019 be received and the recommendations therein be adopted.



UNCONFIRMED MINUTES

Upper Waitaki Zone Water Management Committee Meeting

16 August 2019

**MINUTES OF MACKENZIE DISTRICT COUNCIL
UPPER WAITAKI ZONE WATER MANAGEMENT COMMITTEE MEETING
HELD AT THE MACKENZIE COUNTRY INN, TWIZEL
ON FRIDAY, 16 AUGUST 2019 AT 9.36AM**

PRESENT: Simon Cameron (Chair), Lisa Anderson, Matthew Bayliss, Sandra Hampstead-Tipene, Richard Subtil, Cr John Sunckell, John Wilkie, Cr Craig Dawson, Cr Stuart Barwood, Joy Paterson, Kieran Whyte

IN ATTENDANCE: Tami Woods (ECan), Jenna Hughes-Games (ECan), Graeme Clarke (ECan), Catherine Schache (ECan), Marty Mortiaux (ECan), Ian Whitehouse (ECan), Chris Eccleston (ECan), Panther-Storm Sullivan, Gisela Craig (acting Governance Advisor), one member of the media, eight members of the public.

1 OPENING

The Chair opened the meeting

2 APOLOGIES

Apologies were accepted from Rick Ramsey, Zella Smith (ECan) and Jeremy Severinsen (DOC)

3 DECLARATIONS OF INTEREST

Lisa Anderson declared an interest in matters relating to Items 5.4 and 5.5 the agenda.

4 VISITORS

Karina Morrow (ECan), Bianca Sullivan (Enviser)

5 REPORTS

5.2 MINUTES OF UPPER WAITAKI ZONE WATER MANAGEMENT COMMITTEE MEETING - 19 JULY 2019

COMMITTEE RESOLUTION UPP/0001/34

Moved: Craig Dawson

Seconded: Richard Subtil

The Minutes of the Upper Waitaki Zone Water Management Committee Meeting held on Friday 19 July 2019 were received and the recommendations therein were adopted.

CARRIED

5.3 UPPER WAITAKI ZONE COMMITTEE - 2019 ACTION LIST**PURPOSE OF REPORT**

This report is from Tami Woods, Zone Facilitator, Environment Canterbury.

The purpose of this report is to update the committee on progress on items identified at previous Zone Committee meetings in 2019.

Tami Woods referred to the action list, particularly the first three items, which are to be discussed in this meeting.

STAFF RECOMMENDATIONS

The report was received

5.4 AHURIRI ARM LAKE TROPHIC LIMITS AND IMPLICATIONS FOR FARMING CONSENTS - UPDATE**PURPOSE OF REPORT**

This report is from Marty Mortiaux, Environment Canterbury.

This report provides an update to the paper on lake trophic limits and implications on farming consents, as discussed at the last meeting.

Mr Mortiaux elaborated on the essence of the report and the wider issues of the varying trigger levels. ECan is to establish a new catchment group aiming to find solutions to the issue. He also mentioned that the consent holders were unlikely to take the 'two person panel' pathway and instead would make the reductions required by their consents, along with the need to prepare a report into the course of the Trophic Level Index exceedance. The possible cause of the varying trophic level readings was discussed. In addition to Mr Mortiaux's report, Graeme Clarke (ECan) presented a slide show on data relating to the Trophic Level Index, rainfall, ground water levels and invasive organisms that could have an effect on the lake's Trophic Level Index. A general discussion followed and questions were asked in regards to the figures presented. The memorandum from Graeme Clarke with tables and graphs was handed out to all attendees and will be attached to the Minutes, as well as his PowerPoint presentation.

Matthew Bayliss enquired about the \$100 fee in order to receive required information for water use consent applicants. Richard Subtil suggested distributing the costs by making the one report available to all applicants/current consent holders. Different types of reports and consent conditions apply for land use vs water use. It was clarified that a small charge was being sought towards the report as it was a required action under their consent.

Attachments

- 1 Tabled memorandum from Graeme Clarke
- 2 Ahuriri TLI Cause Report – Graeme Clarke PowerPoint Presentation

COMMITTEE RESOLUTION UPP/0001/35

Moved: Joy Paterson

Seconded: Cr Stuart Barwood

1. The report was received.

CARRIED

2. The committee noted progress and provided feedback on proposed next steps.

5.5 LAKE BENMORE AHURIRI ARM TROPHIC LEVEL INDEX CONSENT RESPONSE OPTIONS**PURPOSE OF REPORT**

This report is from Bianca Sullivan, Enviser Limited, and Zella Smith, Environment Canterbury.

The purpose of the report is to outline how a consent review process may be undertaken to address the trophic level index exceedance in the Ahuriri Arm of Lake Benmore, and how this compares to other options.

Bianca Sullivan sent apologies for Zella Smith. A slide show was presented on 'Key features of post-2010 water permits and farming land use permits in the Ahuriri Arm of Lake Benmore'. An additional handout outlining the options was provided, which will be attached to the Minutes. Options were presented on how to address inequity in the consent reviews, along with suggestions on how to distribute the financial burdens. Currently there are 14 water permits and 7 farming use land consents. Five farming use land consents are still outstanding. A general discussion was held on how the changes can be implemented, if at all.

Joy Paterson would find it useful to receive a list of all consent holders, along with consent expiry dates, not just for the Ahuriri Arm area.

Attachments

- 1 Tabled document: Lake Benmore Ahuriri Arm Trophic Level Index Response Options

COMMITTEE RESOLUTION UPP/0001/36

Moved: Craig Dawson

Seconded: Richard Subtil

1. The report was received.

CARRIED**COMMITTEE RESOLUTION UPP/0001/37**

Moved: Richard Subtil

Seconded: John Wilkie

2. A technical group of Environment Canterbury staff and consultants to further discuss the options to address inequity between consent holders with TLI trigger levels of 2.75 and 2.9 and then further discuss options with consent holders.

3. A catchment group for Ahuriri Arm to be formed as soon as possible and determine what further science is needed to establish where the nutrients are coming from. Graeme Clarke's report to be discussed with the catchment group.
4. Environment Canterbury to then identify where nutrients are originating from within the catchment area and report back to the catchment group.

CARRIED

The meeting was adjourned from 11.20am – 11.38am for Morning Tea

5.6 MACKENZIE BASIN ALIGNMENT PROGRAMME

PURPOSE OF REPORT

This report is from Karina Morrow, Programme Manager – Mackenzie Basin Agency Alignment Programme.

The purpose of the Report is to provide information on the Mackenzie Basin Agency Alignment Programme (MBAAP) and to seek feedback on one of the Programme's specific projects: "Farmers as Partners".

Karina Morrow elaborated on her report. The five agencies work closely together to assist landholders. The aim is to achieve enhanced outcomes and efficiency in regards to joint consent processes, sharing resources, applications etc.

The Chair asked whether, in the future, NZTA could be added to the list of agencies.

The 2019 planned achievements were outlined, with an emphasis on engaging with landholders, and how the tourism sector can benefit from the programme.

Karina Morrow invited feedback from the Committee, which is to be included in the next Steering Committee meeting. The Committee responded that the Mackenzie Basin Agency Alignment Programme is only in its infancy and feedback on particular matters had been regarded as 'too soon'.

Mr Bayliss queried the delays in regards to the tourism management plan, to which Karina Morrow responded that the Tourism strategy has been delayed until June 2020.

COMMITTEE RESOLUTION UPP/0001/38

Moved: Richard Subtil

Seconded: Joy Paterson

1. The report was received.

CARRIED

2. That the Committee noted:

- (a) The context of the Mackenzie Basin Agency Alignment Programme;
- (b) The progress made through the Mackenzie Basin Agency Alignment Programme to date;
- (c) Suggestions for working with farmers and landholders.

5.7 MACKENZIE DRYLAND PARK

Jeremy Severinsen (DOC) sent his apologies. This item was not discussed.

5.8 ZONE FACILITATOR'S REPORT**PURPOSE OF REPORT**

This report is from Tami Woods, Zone Facilitator, Environment Canterbury.

This report provides information that may be of interest to the Zone Committee that is not covered elsewhere in the agenda.

Tami Woods drew attention to the list of consents received by ECan and asked whether the Committee would wish to receive the updated list on an ongoing basis, which has been welcomed by the Committee.

Attachments

- 1 Tabled document: Upper Waitaki Water Zone General Information

STAFF RECOMMENDATIONS

The report was received.

General matters arising:

- Richard Subtil attended the recent Environment Defence Society meeting in Auckland. Tami Woods will make the report on Mackenzie presented at that meeting available to the Committee.
- Tami Woods to explore options of replacement for Committee member Sandra Hampstead-Tipene, in regards to rūnanga. Would it be possible for Panther-Storm Sullivan to be seconded?
- The Chair thanked Sandra Hampstead-Tipene and Craig Dawson for their contribution and commitment to the Committee.
- Matthew Bayliss would welcome a list of attendees for future agendas, outlining their roles and work locations.
- Matthew Bayliss noted he would be able to attend the Regional Committee on 10 September 2019. The Committee requested that all Regional Committee dates be included in their calendars and that there be a standing item on the agenda confirming who could attend.

The Meeting closed at 12.51pm.

The minutes of this meeting were confirmed at the Upper Waitaki Zone Water Management Committee Meeting held on 20 September 2019.

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CHAIRPERSON

UNCONFIRMED

5.4 UPPER WAITAKI ZONE COMMITTEE - 2019 ACTION LIST**File Reference:** na**Author:** Andrea Adams, Governance Advisor (Temp)**Authoriser:** Darren Brown, Information and Engagement Manager**Attachments:** Nil**PURPOSE OF REPORT**

This report is from Tami Woods, Zone Facilitator, Environment Canterbury.

The purpose of this report is to update the committee on progress on items identified at previous zone committee meetings in 2019.

STAFF RECOMMENDATIONS

That the report be received.

Upper Waitaki Zone Committee – 2019 Action list (updated from August meeting)

Date of meeting	Action	Who	Status
16 August 2019	A technical group of Environment Canterbury staff and consultants to further discuss the options to address inequity between consent holders with TLI trigger levels of 2.75 and 2.9 and then further discuss options with consent holders.	Zella/Bianca and Irricon	Meeting held with consent holders 19 September
16 August 2019	A catchment group for Ahuriri Arm to be formed as soon as possible and determine what further science is needed to establish where the nutrients are coming from. Graeme Clarke's report to be discussed with the catchment group.	Marty Mortiaux	See item 2 on this agenda
16 August 2019	Environment Canterbury to then identify where nutrients are originating from within the catchment area and report back to the catchment group.	Marty Mortiaux	See item 1 on this agenda

16 August 2019	Make Available Environment Defence Society presentations on Mackenzie available to the Committee.	Tami Woods	E-mailed September 10
16 August 2019	Explore options of replacement for Committee member Sandra Hampstead-Tipene, in regard to Arrowhenua rūnanga	Brad Waldon-Gibbons	Work in progress
16 August 2019	Regional Committee dates be included in Committee calendars and be a standing item on the agenda confirming who could attend	Tami Woods	Work in progress Due to elections on-going meeting dates after October have not been confirmed. Once confirmed calendar invites will be set up and a standing item on the agenda will be included
19 July 2019	Chair to write to Regional Committee asking for some Committee meetings to be held in Timaru.	Committee Chair	Work in progress
17 May 2019	Clay Cliffs – analyse (for P) a sample of the sediment being eroded from below Clay Cliffs.	Graeme Clarke	Item 2 on this Month's Agenda
17 May 2019	Changes to Ahuriri delta – find out whether there is new LIDAR or other data that provides new information on build-up of the delta and sedimentation of the lake. If new data available, then advise committee and indicate whether this can be analysed and brought to the committee.	Graeme Clarke	Work in progress
17 May 2019	Refresh the committee's "Posters" at the five locations across the zone	Kate Doran	Work in progress
15 February 2019	Kellands Pond/Wairepo Arm – will a hydraulic study be done on how these two waterbodies connect be done? Previously agreed that a study was needed.	Chris to follow up with ECan Science	Work in progress – Chris to provide update at a future meeting

15 February 2019	Develop a visual one-page summary to report progress against the Zone Delivery Work Programme	Chris Eccleston	Work in progress
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5.5 REGIONAL COMMITTEE UPDATE**File Reference:** na**Author:** Andrea Adams, Governance Advisor (Temp)**Authoriser:** Darren Brown, Information and Engagement Manager**Attachments:** Nil**STAFF RECOMMENDATIONS**

That the information be noted.

Mat Bayliss will provide a verbal update to the Committee on the 10 September Regional Committee meeting.

5.6 AHURIRI ARM LAKE TROPHIC LIMITS - NEXT STEPS UPDATE**File Reference:** na**Author:** Andrea Adams, Governance Advisor (Temp)**Authoriser:** Darren Brown, Information and Engagement Manager**Attachments:** Nil**PURPOSE OF REPORT**

This report is from Tami Woods, Environment Canterbury.

This report provides an update on the Ahuriri Arm Lake Trophic Limits Response.

STAFF RECOMMENDATIONS

1. That the report be received.
2. That the Committee notes progress and endorses the proposed next steps

BACKGROUND

In July Environment Canterbury finalised The Trophic Level Index (TLI) calculations for the Upper Waitaki Lakes. The TLI for Lake Benmore at Ahuriri Arm had reached 2.9.

When the lake exceeds the early warning TLI trigger level of 2.75, consent holders with water permits for irrigation in the Ahuriri Catchment are required to carry out certain actions. When the TLI goes over the limit of 2.9, farming land use consent holders, also need to act. The later limit has not been exceeded this year.

On 19 July the TLI early warning exceedance was discussed at the Upper Waitaki Zone Committee meeting. Three recommendations were made to by the Committee. These were:

- a. The Zone Committee recommends that Environment Canterbury reports to the next Zone Committee [16 August] on the consent review process to achieve equality of consent conditions in relation to TLI as soon as possible;
- b. The Zone Committee asks Environment Canterbury to help resource the expert review panel required by the consents with a 2.75 TLI trigger level;
- c. The Zone Committee asks Environment Canterbury to prioritise actions to ensure land owners in the Ahuriri Arms catchment who need farming land use consents have these by October 2019.

On 23 July Environment Canterbury staff meet with 8 of the 10 consent holders directly affected. The invite was also extended to those with farming land use consents with the limit of 2.9 and inactive water permits with the trigger level.

The meeting clarified the two 'pathways' they could take. The first was to make reductions to their Nutrient Discharge Allowances (NDA's) and prepare a report into the cause. The second was to enter into a two-person panel process. If the two-person panel process concluded that the farm was not likely to be contributing to the exceedance, then no further action was required. If, however it concluded that it was likely, they would still need to reduce their NDA's and prepare a report into the cause. Either pathway also needed to occur prior to irrigation commencing in October this year.

Because of the timing, all of the 10 farms have chosen to take the first pathway and are now in the process of determining their reductions.

On 16 August at the Upper Waitaki Zone Committee meeting, Environment Canterbury responded to the July recommendations.

- A presentation was provided on a consent review or other possible options to address inequity.
- An outline as to how those requiring farming land use consent would be followed up was also outlined.
- As no consent holders were proposing to take the 2-person panel pathway the request for resourcing of the panel was noted as no longer required. A Report into the cause of the exceedance was however tabled and presented by Graeme Clarke. This Report can be used by the 10 directly affected consent holders in order to meet their obligations under their consent conditions alongside the reductions in nutrient losses. The Report also provided information on the factors directly or indirectly influencing the trophic state of the lake for both the Committee and catchment landholders. This included:
 - nutrient inputs;
 - climatic factors (wind, temperature, rainfall and river flows);
 - algal, invertebrate and fish community; and
 - internal nutrient cycling, including impacts of lake stratification.

At the 16 August Zone Committee meeting the following further recommendations were made by the Committee:

- a. A technical group of Environment Canterbury staff and consultants to further discuss the options to address inequity between consent holders with TLI trigger levels of 2.75 and 2.9 and then further discuss options with consent holders.
- b. A catchment group for Ahuriri Arm be formed as soon as possible and determine what further science is needed to establish where the nutrients are coming from. Graeme Clarke's report to be discussed with the catchment group.
- c. Environment Canterbury to then identify where nutrients are originating from within the catchment area and report back to the catchment group.

Progress and proposed next steps

The planned activities presented by Environment Canterbury staff at both the July and August Committee meetings will continue to be implemented.

In response to the last committee meetings recommendations:

1. Recommendation (a) has been progressed by Zella Smith from Environment Canterbury, Bianca O'Sullivan from Enviser and Irricon staff. A meeting with consent holders was held 19th September. A verbal update on the outcomes from the meeting will be provided at this meeting.

Both recommendations (b) and (c) are being progressed together under the banner of supporting 'Collective Action'. Environment Canterbury will pull together information about where nutrients originate from and other key information to inform a catchment discussion. Ideas about how information should be presented and communicated has also been discussed to ensure good clear simple information is provided. The format being developed is one facilitated catchment workshop

which covers the TLI issue for the lake, water quality trends in sub-catchments and groundwater, where farms in the catchment are at collectively in implementing good management practice and what can be further done to mitigate risks. This is proposed to be followed by several focused field days on key farm practices in the catchment that can help reduce nutrient losses.

5.7 CLAY CLIFFS**File Reference:** na**Author:** Andrea Adams, Governance Advisor (Temp)**Authoriser:** Darren Brown, Information and Engagement Manager**Attachments:** 1. Memo Erosion of the Clay Cliffs near Omarama, and the potential for phosphorus enrichment of Lake Benmore  **PURPOSE OF REPORT**

This report is from Graeme Clarke, Team Leader - Water Quality and Ecology, Environment Canterbury.

The attachment memo responds to the request by the Committee at its May meeting to sample sediment being eroded from Clay Cliffs and report the results back to the Committee.

STAFF RECOMMENDATIONS

That the report be received.



Memo

Date	11/9/2019
To	Tami Woods
CC	
From	Graeme Clarke. Matt Riddle

Erosion of the Clay Cliffs near Omarama, and the potential for phosphorus enrichment of Lake Benmore.

Introduction

The Ahuriri River has been eroding the true left river bank near the Clay Cliffs for several years (Appendix 1), and concern has been expressed regarding the impact this may have on the nutrient and trophic status of the Ahuriri Arm of Lake Benmore. There are numerous studies on phosphorus enrichment of lakes and resulting increases in lake productivity. This matter is particularly thought-provoking for consent holders in the catchment with consent conditions related to lake trophic state which includes a measure of in-lake phosphorus concentrations. In response to these concerns we have taken several samples of the eroding material at the Clay Cliffs and have analysed them for their phosphorus content.

Methods

Three composite soil samples were taken between 0-15/20cm at the banks of the eroding section of the Ahuriri River near the Clay Cliffs. Each composite was composed of 5 subsamples. Samples were bagged, chilled and sent to Hill Laboratories in Christchurch for Olsen P and Total P analysis. Grain size analysis was also carried out. Further details regarding laboratory analysis methods are available upon request.

Results

Olsen P values at the 3 sites were very similar, ranging from 3 to 4 mg/kg/dry weight. Total phosphorus (TP) results ranged from 290 to 320 mg/kg/dry weight. Grain size analysis indicated two of the sites were composed of a mix of river gravel and clay material while the third site was dominated by finer clay like material.

Table 1: Phosphorus concentrations and particle size for soil samples taken from the river bank near the Clay Cliffs, Omarama.

	Site 1	Site 2	Site 3
Olsen P mg/kg dry wt	4	3	3
Total Phosphorus mg/kg dry wt	290	310	320

Fraction >2mm	50%	33%	<0.1
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Discussion

The results indicate the material eroded from the river bank near the Clay Cliffs has very low levels of readily available phosphorus. Guidelines for pastoral soils indicates the medium Olsen P range is in the order of 20-30 mg/kg dry weight and these sites have between 3-4 mg/kg dry weight. Total phosphorus concentrations were also low compared to other samples taken from around the region (Table 2).

Table 2: Phosphorus concentrations in farmland soils around Canterbury (Taken from Davis and Lang 1992)

Site	Olsen P (mg L)	Total P (mg kg)
Cave Stream	5	850
Craigieburn	6	1100
Lyndon Hill	5	1000
Lake Ida	5	700
Lake Coleridge	6	1000
Tara Hills	12	650
Benmore	20	750
Rhoborough Downs	8	850

There is a risk that a higher proportion of the total phosphorus content of the sediment may be liberated by anoxic conditions or microbial activity by phosphate solubilizing bacteria. (Gächter (1988), Selig and Schlunbaum (2003), Quian et al. 2010)). Anoxic conditions are unlikely to develop given the cool oxygenated inflows from the Haldon Arm of Lake Benmore (Norton et al. 2003) unless lake algal production and internal nutrient cycling increases significantly.

We estimate the total volume of sediment eroded from the Clay Cliffs area since 2010 to be approximately 100,000m³. This is from an area of approximately 2.5ha It should be noted that not all the material eroded from the stream bank near the Clay Cliffs will reach the lake. A large component of the coarse material will be deposited on gravel bars. Hicks et al. (2019) note that “in many rivers the sediment load contributed by bank erosion associated with channel meandering and migration is offset by sediment deposition on point-bars”. That being said, it is unlikely the fine clay component of the eroded material from near the Clay Cliffs will settle out during high flow events.

It is difficult to put these results into context regarding the total catchment sediment load due to a lack of data on this aspect of river water quality. While Environment Canterbury holds data on sediment concentrations at the bottom of the catchment, these monthly samples do not fully describe the movement of sediment down the catchment during episodic high flow events. The bulk of the load from the Clay Cliffs is likely to be transported during these events. Various studies have made estimates of the proportional contribution of bank erosion to the total catchment sediment load (Sekely et al. (2002), Walling and Woodward (1995),

Bull (1997) and Basher et al. (2018)) and estimates vary broadly from 2.6% to over 80%. Factors influencing this load contribution include land management and other erosional processes in the catchment, the flow variability in the stream and the nature of the soils and geology in the catchment. Regardless, the erosion and deposition processes occurring in the Ahuriri River are natural, and vital to the maintenance of the braided nature of the river and associated ecosystems. These processes are likely to be occurring in several places throughout the catchment and will continue to do so. Consideration of in-lake total phosphorus results from the Ahuriri Arm of Lake Benmore indicates that there hasn't been a significant increase in TP concentrations over time and supports the notion that this process has been occurring in the catchment for some time (Figure 1).

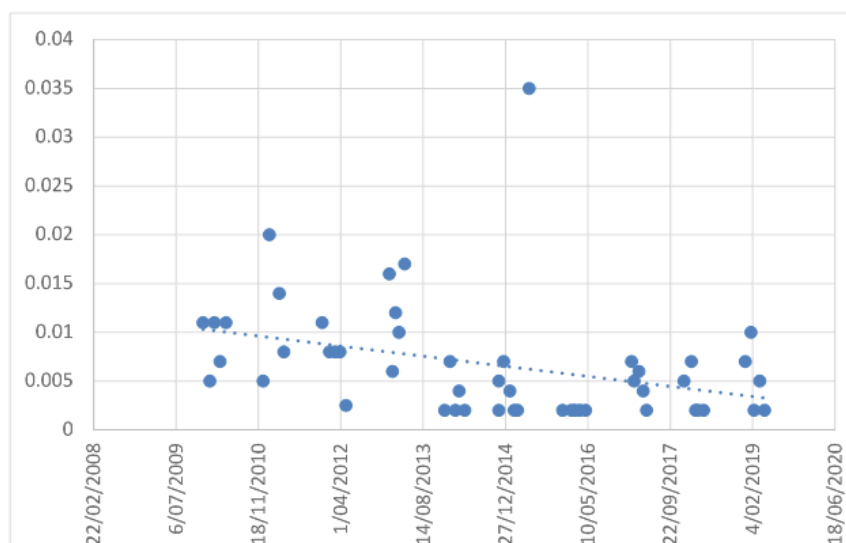


Figure 1: Total Phosphorus concentrations in the Ahuriri Arm of Lake Benmore (mg/L)

Regarding lake water quality measurements and the lake Trophic Level Index (TLI), high flow events transporting large amounts of sediment into the lake may result in elevated total phosphorus results. These events also generate a turbid water column which will be identified during monitoring and subsequent analysis. As noted above, this sediment will not contribute a large amount of plant available phosphorus to the lake and will not contribute to an increase in phytoplankton growth. However, these high flow events and associated elevated phosphorus results need to be considered when assessing lake TLI results.

Conclusion

Despite a large amount of sediment being transported from the Clay Cliffs to the Ahuriri Arm of Lake Benmore, there has not been an observed increase in measured TP concentrations. There is likely to be limited plant available phosphorus associated with this sediment input and this is unlikely to change unless in-lake nutrient cycling changes significantly as a result of increased phytoplankton biomass. It is important that the impact of high flow events on in-lake TP concentrations and subsequent TLI results is considered.

References

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Appendix 1:

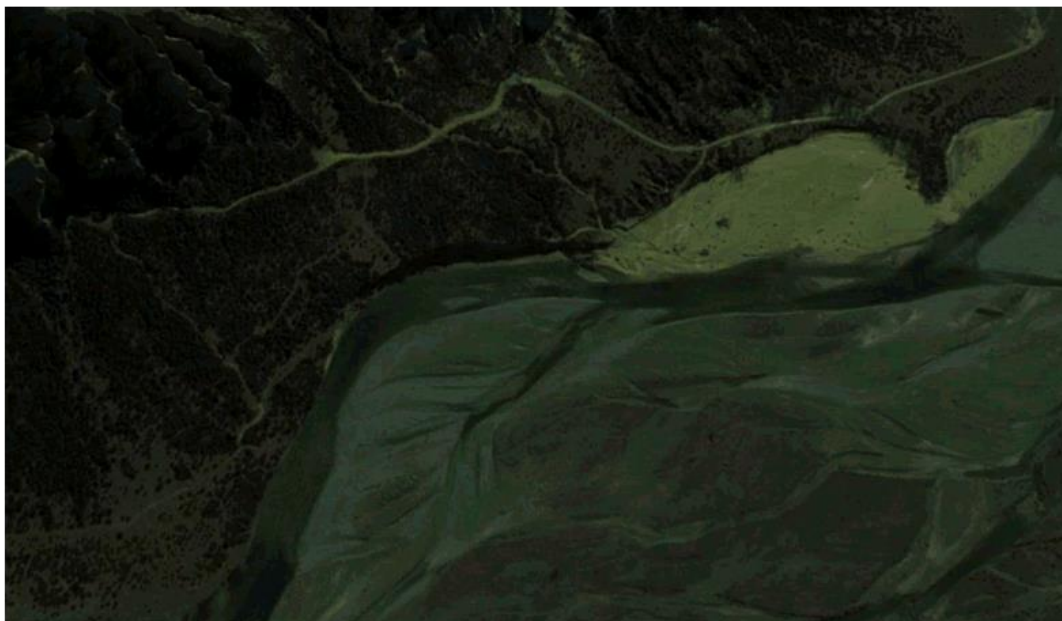
Aerial photos of the Clay Cliffs area over time



26/1/2018



3/4/2014



4/9/2011



4/8/2005

5.8 LAKE MIDDLETON

File Reference: na

Author: Andrea Adams, Governance Advisor (Temp)

Authoriser: Darren Brown, Information and Engagement Manager

Attachments: Nil

PURPOSE OF REPORT

This report is from Ian Whitehouse, Zone Facilitator, Environment Canterbury.

This report summarises the committee's visit to Lake Middleton to prompt discussion on what, if anything, the committee wishes to progress with regards to management of the lake.

STAFF RECOMMENDATIONS

1. That the report be received.
2. The committee recommends the current state of Lake Middleton be maintained and enhanced through actions to control willows, improve sewerage systems, and protect wetlands.
3. The committee asks DOC to:
 - upgrade the toilets at the campground to a fully-pumped effluent system so no nutrients are released to the lake;
 - control willows and other woody-weeds near the lake;
 - protect the wetland on the west side of the lake by establishing a board walk (by working with the Ohau Conservation Trust);
 - report to the committee, after the 2019/20 summer, on the management of the lake.
4. The committee asks Waitaki District Council to remove the long-drop toilet near the eastern margin of the lake.

BACKGROUND

The committee hosted a visit to Lake Middleton in May 2019. Notes are attached. The discussion was recorded in an article by Ruth Grundy, Omarama Gazette, also attached.

The discussion of the lake involved zone committee members, local community, staff from DOC, ECan, Waitaki District Council and Fish and Game. The conclusion was that the lake was in "good shape" with no significant management issues and to maintain the lake in this state and to manage visitor impacts it was important to control the willows and other woody weeds near the lake, protect the wetland on the west side of the lake and eliminate any risk of human effluent to the lake from the campground toilets and a long-drop toilet on the east of the lake.

ATTACHMENT:**Notes from Lake Middleton field trip – Upper Waitaki Zone Committee, 17 May 2019**

Participants: *Upper Waitaki Zone Committee members:* Simon Cameron, Mat Bayliss, John Wilkie, Sandy Hampstead-Tipene, Cr Craig Dawson, Cr John Sunckell, Lisa Anderson, Joy Patterson; *Department of Conservation:* John Benn, Ursula Paul; *Ohau Conservation Trust:* Grant Eames; *Ohau Village residents:* Jill and David Stow; *Lake margin land owner:* Chris Spiers; *Waitaki Boys High School:* Ray Boswell; *Waitaki District Council:* Anna McKenzie; *Fish and Game:* Jayde Couper; *Omarama Gazette:* Ruth Grundy; *High Country and Mt Cook Salmon:* Rick Ramsay, Josh Wyber; *Environment Canterbury:* Graeme Clarke, Chris Eccleston, Kate Doran, Alanna Holier, Ian Whitehouse

Field trip notes:

Background notes, compiled by the Zone Facilitator, were provided to participants prior to the meeting (available at <https://api.ecan.govt.nz/TrimPublicAPI/documents/download/3625433>) along with a report on the instream values of the lake by John Benn, Department of Conservation (available at <https://api.ecan.govt.nz/TrimPublicAPI/documents/download/3625428>). The notes below should be read alongside the two documents on the website.

Field trip programme:

Participants assembled near the northern end of the lake. Following people introducing themselves, Graeme Clarke (ECan Science Team Leader) provided an overview of lake water quality. This was followed by contributions from participants and then identification of what people thought the zone committee could consider in terms of improving the management of the lake and its margins or to maintain its good management.

Notes from discussion:

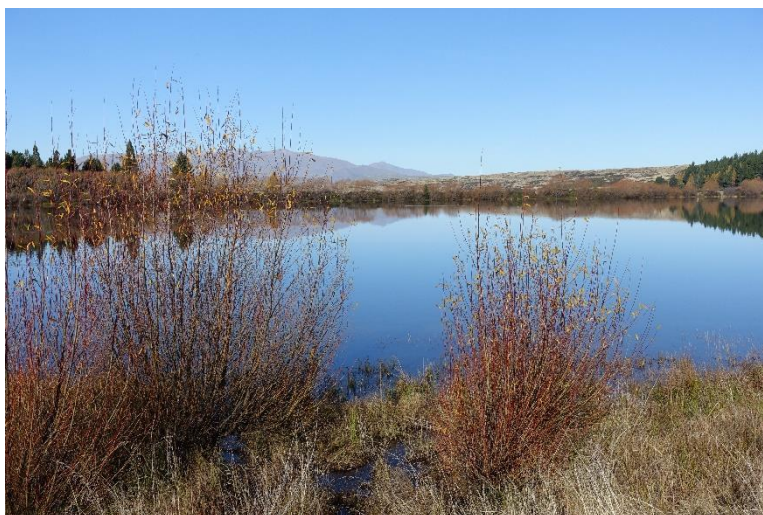
- Inflow to the lake is from a small stream, locally called “Firewood Creek”. Also inflows through wetland. Outflow is through the gravel bar (that the road goes along). Water level in Lake Middleton is closely linked to the level in Lake Ohau. A question was asked about whether willow tree roots restrict the outflow: the answer was “possibly”.

- The lake is shallow, with a maximum depth of about 4m.
- The lake is in relatively good health. In terms of level of enrichment, as measured by TLI (Trophic Lake Index), is about 3.4 (a small TLI reflects a low level of enrichment – such as in a glacial-fed lake; a high TLI reflects a high level of enrichment – such as Te Waihora/Lake Ellesmere). The Canterbury Land and Water Plan sets a TLI of 3.6 for Lake Middleton.
- Contact recreation (swimming) water quality is good and has improved over last decade. Buoys separate a swimming area from the rest of the lake to avoid conflicts with boats. However, the swimming area is shallow and has a lot of weeds which put people off swimming there.



- In the past before human arrival, what is now Lake Middleton was an embayment of Lake Ohau. The build up of a gravel bar led to the intermittent separation of the two lakes and, with the construction of the road, the separation became permanent.
- The lake has a high residence time making it a sensitive lake as nutrients entering are likely to remain in the lake. This concern led to the suggestion of connecting Lake Middleton to Lake Ohau by a weir or culvert. The two lakes are very different. For example, Lake Middleton has freshwater mussels, Lake Ohau doesn't. Reconnecting the lakes would change the nature of Lake Middleton. Also, reconnecting the lakes may be difficult given the gravel drift (that led to the creation of Lake Middleton in the first place).
- The lake and its margin are a recreation reserve. This was vested in Waitaki District Council who transferred it to DOC in 2015. DOC now manage the area including camping. Until last year, there were rubbish bins and these were emptied daily in the summer. The rubbish bins have been removed. This does not appear to have led to issues with litter. During summer a DOC ranger visits the lake daily. The camping area is very popular in the summer.
- There is a toilet block at the camping ground on the north end of the lake. This has a septic tank system which is emptied about twice a year. There is a long-drop toilet on the southeast side of the lake near the road. This is odorous in summer and people avoid using this toilet but defecate nearby.
- DOC plans to block all but one of the entry points from the road into the camping area at the north end of the lake (for road safety reasons) and to discourage people from camping at the southern end of the lake near the boat ramp.
- Waitaki Boys High School leases a lodge near the lake from DOC. This is used by Waitaki Boys and other schools as a base for outdoor education – including kayaking, swimming, orienteering and fishing.

- DOC has sprayed for woody weeds and blackberry. DOC plan to remove willows and pines near the road as these are a road-safety hazard, shading the road in winter. DOC is also hoping to remove willows from near the lake.
- The lake is very popular for a range of recreation activities. Twenty-three boats have been seen on the lake at the same time, however the maximum number is usually five or six (as its small size tends to regulate the maximum number of boats on the lake). Those boating are usually family groups camping at the lake. Jet skiers who are creating a nuisance will usually be spoken to by people camping and boating at the lake. The current hours when boating is allowed may be too long. There was a request to prohibit boating from earlier in the evening.
- People like to walk around the lake. Some parts of the lake margin are swampy and willows on the lake edge can make passage difficult. Locals are keen on upgrading the “track” around the lake including board walks through the swampy areas. There were differing views on the standard of track needed.
- Trout spawn in the lower reaches of Firewood Creek. The lake supports a trout fishery that provides easy-to-catch small fish and provides a good location for people learning to fly-fish. Rainbow trout are the most common species in the lake as brown trout spawn early and their eggs are overtopped by those from rainbow trout.
- Ohau Conservation Trust is involved in activities at the lake including wilding control and improving crested grebe breeding on the lake.
- When asked what the zone committee might be able to help with the responses included: the walkway around the lake; lake access; willow removal; encouraging agencies and organisation to have a joined-up approach.



Notes compiled by Ian Whitehouse and Alanna Holier

ATTACHMENT:**Article in Facebook edition of Omarama Gazette, June 2019 by Ruth Grundy****THE LONG READ ABOUT THE LAKE**

On the surface the science shows the state of the lake is about average.

Go a little deeper and some signs indicate problems could be brewing, with potential for trouble ahead if these are not identified and dealt to.

Plus, there are wish lists of changes that some feel would improve the small, popular and “unique” high country lake.

This was the heart of discussion at Environment Canterbury’s Upper Waitaki Water Zone Committee field trip to Lake Middleton, last week (Friday, May 17, 2019), where representatives of six groups with an interest in the lake were invited to give their views on its management and that of its margins.

The lake is an embayment of Lake Ohau and has long been popular with families for camping, swimming, boating and fishing because it is sheltered, shallow and warm.

The Alps 2 Ocean and Te Araroa trails pass the lake on its eastern side and more independent travellers are coming to the area.

The lakeside camping area has been managed by the Department of Conservation since 2015. Prior to that it was under Waitaki District Council management. Under its District Plan, which is at present under review, the council have responsibility for the ‘surface of the lake’.

Ohau Conservation Trust volunteers have set out their objectives for its management as a special project within its strategic plan.

Lake Ohau Alpine Village, with a small population of permanent residents, sits on a rise above the lake.

The lakeside is home to a high-country sheep station, an outdoor education facility in the old Avoca Station homestead, and a family-owned boutique bed and breakfast.

Fish and Game have long-valued the lake for its trout fishery.

It is ECan that manages water quality and regulates boating activities on the lake. At present the lake’s water quality was about average – it’s trophic level index (TLI) measures “about 3 to 4”, ECan water quality and ecology team leader Graeme Clarke said.

TLI measures four water quality indicators – including nitrogen levels - to give a rating of between 1 and 7 – the lower the number the better the quality. Lake Middleton was rated 3.5 in 2012 and 3.4 in 2018.

It was unsuitable for swimming for five out of seven years between 2005 and 2012 but has “improved since then”, Mr Clarke said.

But there was a lack of “historical data” and this meant it was not known if recent quality “deviates from a natural reference state”. Although there is nothing significant to indicate the health of the lake was “degrading”, it was “at risk” because of low inflow and no clear outflow of water.

One creek – Firewood Creek – and a wetland flow into the lake, and there is some movement of water between it and Lake Ohau along the causeway between the two bodies of water. Further work needed to be done to determine what contribution the wetland made, he said.

“If things go pear-shaped then there is an option to put in a culvert to flush the lake.” However, “there were a range of considerations” before any “intervention” could be made because of the “distinct ecosystem”, he said.

DOC water management coordinator John Benn, who has just produced a report on the values of, and risks to, the ecology of the Lake Middleton catchment, said Ohau Conservation Trust chairperson Viv Smith-Campbell, who is a DOC management planner in Christchurch, made a “considerable” contribution to the report.

The report says threats are posed by predators, weeds and human activity.

Based on a LakeSPI assessment Lake Middleton's rating of “high” health in 2012 has fallen to “moderate” in 2017. LakeSPI is a tool that uses ‘Submerged Plant Indicators’ to assess ecological condition.

The lake is home to about 50 bird species - 27 natives, and nine at risk species, including the Crested Grebe, and six fish species – four native and two introduced – brown and rainbow trout, Mr Benn said.

Regarding human activity, DOC recorded about 1800 visited its campsite at peak “before and after Christmas”. A ranger visits the campsite regularly through the season but there is no rubbish collection.

DOC has asked the Mackenzie District Council to adjust the Twizel dump hours to better suit campers, he said.

The flush toilets use a septic tank system which is emptied “twice a season”. There is a long-drop toilet just outside the DOC-administered area which Mr Benn assumes is maintained by the Waitaki District Council.

Because DOC is responsible for “visitor safety and well-being” it wants to designate specific areas for vehicles and boating.

It is also making changes to encourage people to camp at Middleton, rather than in the various laybys along the road, he said.

Residents at the event reported they have seen many more freedom camping – not self-contained - “right to the top of the lake”, and more rubbish left by vans and cyclists.

Although the Conservation Trust, Fish and Game, Waitaki Boys' High School who lease Avoca Lodge, and residents would like access around the lake, DOC is hesitant to fund and build a walkway close to the edge because it would be prone to damage from fluctuating lake levels, Mr Benn said.

At present, DOC is waiting to hear about a funding request to government for the removal of pine and willow.

Ohau Conservation Trust trustee Grant Eames said the lake is a "gem" and "unique" because of its combined recreation and ecological values. Weed control is a priority for the trust, as is continuing to support the diversity of wildlife, particularly the Crested Grebe. To improve flow, he would prefer to see the crack willow removed from the causeway first, before a culvert was tried.

The trust does have concerns about the impact of motor boats on wildlife. It wants to see a reduction in the hours boating is allowed on the lake, a suggestion supported by WBHS head of outdoor education Ray Boswell and residents.

These groups also want to see a reduction in the road speed limit to 30kph because of the increasing numbers of pedestrians and cyclists using the road. The Waitaki District Council is at present reviewing the speed limit but is likely to move it up from the 70kph temporary limit to 80kph to line up with New Zealand Transport Agency guidelines, Cr Craig Dawson says.

Mr Eames also urged those present to plan for more visitors because when more of the A2O trail was moved off-road it was likely new trails would pass directly by lake.

Shelton Downs Station manager Alastair Ensor was unable to be present, but his comments were read to the group. Stock are effectively blocked from entering the creek by fencing or the terrain, he says. More fencing would be unlikely to keep the "odd deer or possums out of the creek". He is concerned about the "noticeable oil slick around the lake by the end of summer". And he questions the "integrity of the effluent systems that have to cope with all those people over summer".

Lake Middleton resident Chris Spiers, whose links date back to 1947, said he can remember when there were "far fewer trees" and water "bursting through" from Lake Ohau when it was in flood. It has always been popular with families and, as such, boaties tend to be self-policing and courteous, he said.

Mr Boswell said Avoca Lodge is used by about 15 to 20 pupils at a time from different schools throughout the year, who kayak, swim and fish. The septic system at the lodge had been built to three times the capacity required and was pumped every second year. The rushes have disappeared from the lake and with them the leeches, he said.

Zone committee chairperson Simon Cameron, whose family has farmed nearby Ben Ohau Station for generations, also spent time at the lake as a child and remembers it once hosted a population of eels – tuna. He expressed concern at the significant spread of crack willow and its probable effect on the health of the lake. He, also, is concerned about the impact of the increasing numbers of visitors.

Central South Island Fish and Game officer Jayde Couper says the lake is “good fishing”. Brown trout are dominant because they spawn ahead of the rainbow trout. He says he is unaware of a bed of eels. In response to a question from committee member Sandra Hampstead-Tipene, Mr Couper said he did know of some sites where attempts had been made to exclude all but native species, but it had not always been successful.

Mrs Hampstead-Tipene said she would like to see the willows cleared, and the wetlands and native species given more protection.

Mt Cook Alpine Salmon general manager Rick Ramsay said he believes it is important a baseline be set before changes are considered. “At what point in time are we looking at to say, this is how we would like it to be?” It was also important to “isolate the N”, he said, to determine if excess nitrogen was coming from “waste and discharge”. And he wants the wetlands studied further.

Lake Ohau Alpine Village resident and Ohau Conservation Trust member David Stone says Lake Middleton could be an “exemplar” of how statutory authorities can work together to create “a really special place” - a balance between ecology and recreation. He wants to see the “willows go” and natives restored. A jetty, which would direct boating traffic, could be a “gem project” for ECan, he said.

Committee member Mat Bayliss queried whether Doc is undertaking any kind of “process of engagement” with its “community of interest”. DOC has an agreement with the Conservation Trust but “no formal management plan at the moment”, Mr Benn said. A “joined-up planning process”, which shows what could be achieved when the agencies and volunteers “pooled resources”, was something he would like to see, Mr Bayliss said.

Lake Middleton will be included in the Mackenzie Basin Agency Alignment tourism strategy, Mr Benn said.

ECan councilor and committee member John Sunckell said it appeared the priority was “more about protecting what we have, rather than fixing anything”.

“There is potentially a problem here if we don’t look after it,” committee chairperson Simon Cameron said.

5.9 MACKENZIE DRYLAND HERITAGE AREA**File Reference:** na**Author:** Andrea Adams, Governance Advisor (Temp)**Authoriser:** Darren Brown, Information and Engagement Manager**Attachments:** Nil**PURPOSE OF REPORT**

Jeremey Severinsen, Department of Conservation will provide a verbal update on the Mackenzie Dryland Heritage Area.

STAFF RECOMMENDATIONS

That the information be noted.

5.10 ZONE FACILITATOR'S REPORT**File Reference:** na**Author:** Andrea Adams, Governance Advisor (Temp)**Authoriser:** Darren Brown, Information and Engagement Manager**Attachments:**
1. Attachment 1 - Community Snapshot [!\[\]\(8d0f0e0fe25b320c33272c52aec1fbca_img.jpg\)](#) 
2. Attachment 2 Environment Canterbury Upper Waitaki Consents in Process [!\[\]\(8823fcf8e90563a144be0b7cea058423_img.jpg\)](#) **PURPOSE OF REPORT**

This report is from Tami Woods, Zone Facilitator, Environment Canterbury.

This report provides information that may be of interest to the Zone Committee that is not covered elsewhere in the agenda.

STAFF RECOMMENDATIONS

That the report be received.

BACKGROUND**Cancellation of Zone Committee Meeting in October**

The October Committee meeting has been cancelled due to the elections.

Action for Healthy Waterways

On Thursday 5 September the Government released its Action for Healthy Waterways.

What the Government says it wants to do through the Action for Healthy Waterways is:

- Raise the bar on ecosystem health, including protecting wetlands and streams (a new National Policy Statement for Freshwater)
- Set higher standards for summer swimming spots
- Introduce interim controls on land intensification until councils have plans in place (2025) through a new National Environmental Standard (Freshwater NES)
- Design an accelerated planning process that will enable better, faster and more consistent freshwater management plans by regional councils (through the RMA amendment bill)
- Support the delivery of safe drinking water and improved management of stormwater and wastewater through an amended Drinking Water National Environment Standard and proposed Wastewater NES.
- Improve risky farm practices where needed including ensuring farmers and growers understand and manage environmental risks through farm plans (Freshwater NES)

Canterbury is well-placed or ahead of the game in many areas of the proposals, and some of the proposals model what has already been done in Canterbury.

Public consultation will take place during September.

Further information can be found at <https://www.mfe.govt.nz/consultation/action-for-healthy-waterways>

CWMS Targets Report 2019

The 2019 CWMS Targets Progress Report is now available on Environment Canterbury's website. A hard copy of the Report was also sent to the Chair.

<https://www.ecan.govt.nz/your-region/your-environment/water/measuring-progress>

Environment Canterbury Consents in Process

Attached to this paper is a list of resource consents in process with Environment Canterbury. This has been included for the Committee's and community reference only. This information is also publicly available on Environment Canterbury's website.

Communications Update

Community posters

- Final draft for review sent to committee – thank you to those that commented.
- A little delayed in terms of original timeline seeking approval for inclusion of logos

Community snapshot (attached)

- Focus on Fork Stream for July

Media coverage:

Immediate Steps biodiversity projects funded

Ecan web: <https://ecan.govt.nz/get-involved/news-and-events/zone-news/upper-waitaki/major-weed-control-project-in-dobson-and-hopkins-valleys-gets-go-ahead/>

Timaru Herald: <https://www.stuff.co.nz/timaru-herald/news/114419450/bid-to-protect-40000ha-of-south-island-high-country-from-invasive-weeds>

Timaru Courier: <https://www.timarucourier.co.nz/news/weed-control-funded/>

Twizel Update: page 8

TLI levels at Lake Benmore

Twizel Update: covered July meeting

Ecan web story <https://ecan.govt.nz/get-involved/news-and-events/zone-news/upper-waitaki/environment-canterbury-takes-action-on-ahuriri-arm-water-quality/>

Timaru Herald: <https://www.stuff.co.nz/timaru-herald/news/114295701/high-nutrient-levels-trigger-ecan-water-quality-investigation-in-benmore-area>

Omarama Gazette: covered August meeting [https://mailchi.mp/6f3263e8e1d1/the-september-issue-3585781?e=\[UNIQID\]](https://mailchi.mp/6f3263e8e1d1/the-september-issue-3585781?e=[UNIQID])

Attachment 1: Community Snapshot**Upper Waitaki Water Zone Committee****Trip downstream for trout improves odds for tiny native species**

Tiny native fish that live in remote streams in the Mackenzie Basin were given better odds for survival recently thanks to a three-day joint operation to relocate their major predators – hungry trout.

More than 500 rainbow and brown trout were safely caught and moved downstream below special fish barriers during a multi-agency effort in the tributaries leading to Fork Stream. This gives the vulnerable galaxiid species – which rarely grow bigger than 80mm in length – a safer habitat to thrive within.

The Upper Waitaki Water Zone Committee is a community led committee supported by Environment Canterbury, Waitaki District Council, Mackenzie District Council and Waimate District Council.

 [fb.com/canterburywater](https://www.facebook.com/canterburywater)

A team from Environment Canterbury, Department of Conservation and the NZ Defence Force worked together to carefully net the trout and move them further downstream, away from bignose and longjaw Waitaki galaxias – which are only found in the Mackenzie Basin.

The Upper Waitaki Water Zone Committee has supported many projects to protect native fish in the Mackenzie Basin, including \$12,000 of funding towards fish barriers at Fork Stream.



Waitaki
DISTRICT COUNCIL
Te Kaitiaki o Waitaki



**Environment
Canterbury**
Regional Council
Kaitiaki Take Kōwhiri



Attachment 2: Environment Canterbury Upper Waitaki Consents in Process

Record No	Holder Name	Type	Description	Record Status
Multiple/Bundled Consents				
CRC170898	The Cairn Station Limited	Water Permit (s14) - Change in Conditions	to change conditions of CRC921927A; to take water from the Ohau-Benmore Canal, above Ohau 'B' Power Station via the Tomahawk Lagoon, at or about map reference H38:795-524, for borderdyke irrigation of up to 476 hectares	Application on Hold
CRC170899	The Cairn Station Limited	Water Permit (s14) - Change in Conditions	to change conditions of CRC921927B; to take water from the Ohau-Benmore Canal, between Ohau "B" and "C" Power Stations, at or about map reference H38:832-501, for borderdyke irrigation of up to 476 hectares	Application on Hold
CRC170897	The Cairn Station Limited	Land Use Consent (s9) - New Consent	to use land for a farming activity within the sensitive Lake Nutrient Allocation Zone	Application on Hold
CRC195068	Killermont Station 2012 Limited	Water Permit (s14) - New Consent	to take, dam & store water for irrigation purposes	Application on Hold
CRC195069	Killermont Station 2012 Limited	Land Use Consent (s9) - New Consent	to use land for excavation	Application on Hold
CRC194819	Mt Cook Station Limited	Land Use Consent (s13) - New Consent	to disturb the bed of the Tasman River	In Process
CRC194820	Mt Cook Station Limited	Discharge Permit (s15) - New Consent	to discharge sediment associated with works in the bed of the Tasman River	In Process
CRC200745	Mt Cook Station Limited	Land Use Consent (s13) - New Consent	to disturb the bed of the Jollie River	In Process
CRC200747	Mt Cook Station Limited	Discharge Permit (s15) - New Consent	to discharge sediment associated with works in the bed of the Jollie River	In Process

Record No	Holder Name	Type	Description	Record Status
CRC194553	Tekapo Landco Limited	Land Use Consent (s9) - New Consent	to use land for earthworks	In Process
CRC194554	Tekapo Landco Limited	Discharge Permit (s15) - New Consent	to discharge construction phase stormwater	In Process
CRC194555	Tekapo Landco Limited	Discharge Permit (s15) - New Consent	To discharge operational phase stormwater	In Process
Water				
CRC186077	Bendrose Farm 2014 Limited	Water Permit (s14) - Change in Conditions	to change conditions of CRC155442 - to take and use surface water	Application on Hold
CRC061155	Five Rivers Limited	Water Permit (s14) - New Consent	To take and use groundwaer at a combined maximum rate not exceeding 950 litres per second with a combined annual volume not exceeding 9,000,000 cubic metres, from proposed bores H38/0187, H39/0069, H39/0071, H39/0072 and H39/0073, all 300 millimetres diameter and 100 metres deep, at or about map references NZMS 260 H38:6812-5008, H39:6740-4986, H39:6677-4949, H39:6597-4909, H39:6650-4870 and H39:6303-4845, for spray irrigation of 1,500 hectares of crops and pasture for stock excluding dairy cows, adjoining Lake Ohau Road at Ohau Downs Station between Lake Ohau and the Twizel Omarama Road. The maximum rate and annual volume of water proposed to be taken under this application will be a combined volume taken under CRC061154 and CRC061155. A duration until 2025 is sought.	Application on Hold
CRC195159	New Zealand Defence Force	Water Permit (s14) - New Consent	to take & use surface water	Application on Hold

Record No	Holder Name	Type	Description	Record Status
CRC168976	Tussock Dairy Grazing Limited	Water Permit (s14) - New Consent	to use surface water for irrigation, stock drinking water, dairy shed use, and domestic purposes with a maximum annual volume not exceeding 4, 394, 320 cubic metres	Application on Hold
CRC194496	University of Canterbury	Water Permit (s14) - New Consent	To take and use groundwater	In Process
CRC020364.1	Messrs W H & A J Sutherland	Water Permit (s14) - Notice of Review	To review CRC020364 - to take and use water -	Application on Hold
CRC200372	Ben Ohau Golf Club Incorporated	Water Permit (s14) - New Consent	To take and use groundwater	Granted
CRC182951	Benmore Irrigation Company Limited	Water Permit (s14) - New Consent	to divert and/or to take water from the Ohau, for spray and border dyke irrigation	Granted
CRC194150	Waitaki District Council	Water Permit (s14) - New Consent	To divert water	Granted
CRC121813	Douglas Robert McIntyre	Water Permit (s14) - New Consent	to take up to 45,990 cubic metres of groundwater per year	Application on Hold
CRC176019	Mr D R McIntyre & Waitaki Trustees (Golden Acres) Limited	Water Permit (s14) - New Consent	to take water from the Pukaki Canal	Application on Hold
Farming Land Use Consents				
CRC181378	Glenbrook Station Limited	Land Use Consent (s9) - New Consent	To use land for farming activity	Application In Process
CRC172835	Kidd Partnership	Land Use Consent (s9) - New Consent	land use consent to farm	Application In Process
CRC168850	McIntyre Williamson Partnership	Land Use Consent (s9) - New Consent	to use land for a farming activity within the sensitive Lake Nutrient Allocation Zone	Application In Process
CRC173260	Mr D R McIntyre & Waitaki Trustees (Golden Acres) Limited	Land Use Consent (s9) - New Consent	to use land for a farming activity	Application In Process
CRC176018	Mr D R McIntyre & Waitaki Trustees (Golden Acres) Limited	Land Use Consent (s9) - New Consent	to use land for a farming activity	Application on Hold

Record No	Holder Name	Type	Description	Record Status
CRC200827	Mr S R & Mrs E N & Mrs P E Croft	Land Use Consent (s9) - New Consent	to use land for farming purposes	Application In Process
CRC168987	Mr W H & Mr A J Sutherland	Land Use Consent (s9) - New Consent	to use land for a farming activity within the sensitive Lake Nutrient Allocation Zone	Application In Process
CRC171946	The Ohau Company Trust	Land Use Consent (s9) - New Consent	to use land for a farming activity within the sensitive Lake Nutrient Allocation Zone	Application In Process
CRC184159	Barrhill Chertsey Irrigation Limited	Discharge Permit (s15) - New Consent	to discharge nutrients onto or into land	Application on Hold
Land Use				
CRC181776	Douglas Robert McIntyre	Land Use Consent (s13) - New Consent	to work in or on the beds of Lakes & rivers	In Process
CRC195399	McKeown Group Limited	Land Use Consent (s9) - New Consent	to use land to store a hazardous material	Withdrawn
CRC100143	Waitangi Station Limited	Land Use Consent (s13) - New Consent	to construct use and maintain an intake structure between map references NZMS 260 I40:0034-1369 and I40:0031-1368 to facilitate the abstraction of water from Lake Aviemore	Withdrawn
CRC194149	Waitaki District Council	Land Use Consent (s13) - New Consent	to use land for works in waterways	Granted
Discharge Consents				
CRC141897	Hutton Salmon Limited	Discharge Permit (s15) - Change in Conditions	to change conditions of CRC032103; to discharge contaminants and water to water and to discharge contaminants and water to land from fish farm operations.	Application on Hold
CRC140758	Waitaki District Council	Discharge Permit (s15) - Change in Conditions	To discharge contaminants to land	Application on Hold
CRC200986	Mackenzie Properties Limited	Discharge Permit (s15) - New Consent	to discharge construction phase stormwater	Returned under s88

Record No	Holder Name	Type	Description	Record Status
CRC200987	Mackenzie Properties Limited	Discharge Permit (s15) - New Consent	To discharge operational phase stormwater	Returned under s88
CRC201075	Mr P A Jamieson and Ms K S Harvey	Discharge Permit (s15) - New Consent	To discharge onsite wastewater to land	In Process
CRC186252	Waitaki District Council	Discharge Permit (s15) - New Consent	To discharge contaminants to land and water	Application on Hold
CRC194505	Blue Lake Investment (NZ) Limited	Discharge Permit (s15) - New Consent	to discharge operational phase stormwater	Granted
CRC194506	Blue Lake Investment (NZ) Limited	Discharge Permit (s15) - New Consent	To discharge onsite wastewater to land	Granted
CRC195300	Earth and Sky GP Limited	Discharge Permit (s15) - New Consent	To discharge onsite wastewater to land	Granted
CRC194151	Waitaki District Council	Discharge Permit (s15) - New Consent	To discharge sediment laden water to water	Granted
CRC200183	Waitaki District Council	Discharge Permit (s15) - Change in Conditions	to change conditions of CRC082826 - to discharge contaminants into land	Granted

