



Waitaki
DISTRICT COUNCIL
TE KAUNIHERA Ā ROHE O WAITAKI



Mackenzie
DISTRICT COUNCIL



**Environment
Canterbury
Regional Council**

*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, 18 February 2022

Time: 9.30am

Location: [Zoom Link](#)

AGENDA

Upper Waitaki Zone Water Management Committee Meeting

18 February 2022

Note: This meeting will be digitally recorded by the minute-taker and uploaded to YouTube after the meeting.

Upper Waitaki Zone Water Management Committee Membership:

Simon Cameron (Chair)
Matthew Bayliss
Richard Subtil
John Sunckell
Joy Paterson
Kieran Whyte
Stuart Barwood
Michael McMillan
Rynnee de Garnham

Upper Waitaki Zone Committee Meeting Friday 18 February 9.30am Online			
Time		Item	Lead
9.30am		Opening Karakia	
		Welcome Welcome to Waihao Runanga representative - Rynnee de Garnham Moment of reflection - Ross McRobbie	Chair
		Standing Items Apologies, Minutes, Conflicts of Interest, Matters arising	Chair
9.40am		Toitū Te Whenua / LINZ report on aquatic and terrestrial weed control programme	Shaun Thomason and Tracey Burton
10.00am		Report on Cyanobacteria – Twizel River	Shirley Hayward
10.15am		Confirmation of action plan budget projects	Facilitator
10.30am		Zone Facilitator's Report	Facilitator
10.45am		General Business	All
11.00am		Closing Karakia	

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1 REPORTS

1.1 MINUTES OF UPPER WAITAKI ZONE WATER MANAGEMENT COMMITTEE MEETING - 17 SEPTEMBER 2021

Author: Arlene Goss, Governance Advisor

Authoriser:

Attachments: 1. Minutes of Upper Waitaki Zone Water Management Committee Meeting - 17 September 2021

RECOMMENDATION

That the Minutes of the Upper Waitaki Zone Water Management Committee Meeting held on Friday 17 September 2021 be received and confirmed as an accurate record of the meeting.



Mackenzie

DISTRICT COUNCIL

Unconfirmed MINUTES

**Upper Waitaki Zone Water Management
Committee Meeting**

17 September 2021

**MINUTES OF MACKENZIE DISTRICT COUNCIL
UPPER WAITAKI ZONE WATER MANAGEMENT COMMITTEE MEETING
HELD ONLINE ON ZOOM
ON FRIDAY, 17 SEPTEMBER 2021 AT 9.30AM**

PRESENT: Chairperson Simon Cameron, Matthew Bayliss, Richard Subtil, Cr John Sunckell, Joy Paterson, Kieran Whyte, Cr Ross McRobie, Michael McMillan

IN ATTENDANCE: Cr Elizabeth McKenzie (Ecan), Cr Miriam Morton (Waimate District Council), Janine Roux (Committee Facilitator, Ecan), Graeme Clark (Ecan), Kate Doran (Ecan), Arlene Goss (Governance Advisor), Rick Ramsay (Aquaculture Group), Chris Eccleston (Ecan), David Stone (Ohau resident), Emily O'Connell, John Benn (DOC), Arlene Goss (committee administrator).

1 OPENING

The chairman welcomed everyone and asked those present to introduce themselves. This was followed by a karakia from member Kieran Whyte.

2 APOLOGIES

COMMITTEE RESOLUTION UPP/2021/93

Moved: Mr Richard Subtil

Seconded: Cr John Sunckell

That the apology received from Cr Stuart Barwood be accepted and leave of absence granted.

CARRIED

3 REPORTS

3.1 MINUTES OF UPPER WAITAKI ZONE WATER MANAGEMENT COMMITTEE MEETING - 20 AUGUST 2021

COMMITTEE RESOLUTION UPP/2021/94

Moved: Cr Ross McRobie

Seconded: Cr John Sunckell

That the Minutes of the Upper Waitaki Zone Water Management Committee Meeting held on Friday 20 August 2021 be received and confirmed as an accurate record of the meeting.

CARRIED

3.2 INTERESTS REGISTER

This information was noted.

5.3 LOVE OUR LAKES CAMPAIGN PLANNING

This report was from Kate Doran, Senior Communications & Engagement Advisor, Environment Canterbury. It was to inform the Zone Committee on the background for 'Love Our Lakes' as well as planning for the upcoming summer and future Love Our Lakes campaigns.

Kate Doran went through the main features of the upcoming campaign. She asked members of the committee to share information in local social media groups. Member Richard Subtil asked for consistency in messaging across the districts.

The chairman asked to follow up on the suggestion that water testing for recreation be expanded to include Loch Cameron. Graeme Clark from Ecan would follow up on this.

Keiran Whyte raised the communication message of not being able to gather food from a lake that was poor quality, as well as not being able to swim in it. Kate Doran would note this as an idea for future discussion. Graeme Clark said raising the issue and making the public aware would be valuable.

The committee agreed to go ahead with the Love Our Lakes plans for this coming season, in addition to the Lake Ruataniwha responsible toilet use campaign.

5.4 REQUEST TO SPEAK ABOUT LAKE MIDDLETON

Lake Ohau resident David Stone asked to speak to the committee as a member of the public, about Lake Middleton.

He said a fish survey done last year was disappointing. He wanted to get the non-native fish out of Lake Middleton and restore the water and surrounds. He asked about a Maori name for Lake Middleton.

John Benn from DOC spoke about current work at Lake Middleton reserve. He said there would be consultation with Runanga and the Ohau Conservation Trust. DOC has engaged a landscape consultant who was familiar with the area. The boundary was now well marked and defined. Road and access works had been done.

Reports going back to 1895 showed eels/tuna had never been recorded in the lake in 120 years. There were six fish species in the lake. All in small numbers.

Discussion took place on why tuna were not present in Lake Middleton, the status of the reserve and the connection of Lake Middleton with Lake Ohau. John Benn offered to send out a report he had prepared on Lake Middleton to those present.

A question was asked about the state of the public toilets at Lake Middleton. Cr Ross McRobie offered to follow up on the status of these toilets with the Waitaki District Council.

5.4 ZONE FACILITATOR'S REPORT

This report was from Janine Roux, Zone Facilitator, Environment Canterbury, and provided information that may be of interest to the Zone Committee, that was not covered elsewhere in the agenda.

CWMS progress report – This report was noted by the chairman who said the zone committee had achieved some wins and was communicating them to the public. Changes had been made to focus on the outcomes of zone committees rather than the actions.

CWMS action plan fund – Janine Roux would like to workshop what the zone committee would use its money for this financial year.

October/November meetings – October would be a workshop to plan for the next year. Would the group like to hold a hangi this year? Discussion took place. The committee agreed that these were worthwhile community events. They agreed that a hangi would be held at Richard Subtil's property in November. Janine Roux will organise a date.

5.5 GENERAL BUSINESS

Member Mat Bayliss said he has spoken to Cr Emily Bradbury of Mackenzie District Council regarding plans for the Twizel River and received a positive response. Discussion was ongoing and a report would come back to the committee in October.

The Meeting closed with a karakia from Kieran Whyte at 10.39am.

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

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CHAIRPERSON

1.2 INTERESTS REGISTER

Author: Staff Report, Environment Canterbury

Authoriser:

Attachments: Nil

STAFF RECOMMENDATIONS

That the information be noted.

DECLARATION OF INTERESTS REGISTER – AS OF 8 FEBRUARY 2022

Keeping a Zone Committee Members' declarations of interest register allows Zone Committees to identify and manage a conflict of interest when it arises.

The Office of the Auditor General notes a conflict of interest can arise when: "A member's or official's duties or responsibilities to a public entity could be affected by some other interest or duty that the member or official may have."¹

If a member is in any doubt as to whether or not they have a conflict of interest, then the Member should seek guidance from Catherine Schache (General Counsel, Environment Canterbury), the Zone Facilitator and/or refer to the following guidance: <https://oag.parliament.nz/2020/lamia>

Types of Interest to be documented in the register:

- Employment, trade or profession carried on by the Member or the Member's spouse for profit or gain
- Company, trust, partnership etc for which the Member or their spouse is a director, partner or trustee, or a shareholder of more than 10% shares
- Address of any land in which the Member has a beneficial interest and which is in the area of the Zone Committee
- The address of any land where the landlord is Environment Canterbury, Mackenzie District Council or Waitaki District Council and:
 - The Member or their spouse is a tenant;
Or
 - the land is tenanted by a firm in which the Member or spouse is a partner, a company of which the Member or spouse is a director, or a Trust of which the Member or spouse is a Trustee.
- Any other matters which the public might reasonably regard as likely to influence the Member's actions during the course of their duties as a Member.

¹ Office of the Auditor General Good Practice Guide – Managing Conflicts of Interest: Guidance for public entities

- Any contracts held between the Member or the Member's spouse and Environment Canterbury, Mackenzie District Council or Waitaki District Council. Including contracts in which the Member or their spouse is a partner, a company of which the spouse is a director and/or holds more than 10% in shares, or a Trust of which the Member or their spouse is a trustee (noting that no committee member should be a party to a contract with Environment Canterbury or the relevant TLA if that value is more than \$25,000 per annum)

Zone Committee members are to ensure that the information contained in this register is accurate and complete.

Name	Committee Member Interests
Stuart Barwood	Mackenzie District Council Councillor, Chairman Assets and Services committee MDC, trustee of Helwood Trust.
Mat Bayliss	Chairs the Meridian Energy Waitaki Community Fund. Asset Maintenance Manager for Meridian Energy in Twizel. Shareholder of Meridian Energy. Consents held CRC142283
Simon Cameron	Local Merino sheep farmer. Trustee of Ben Ohau Farming Trust. Trustee Cameron Investment Trust. Trustee of Mackenzie Wilding Trees Trust. Trustee Aoraki Mount Cook Museum Trust. Resource consents CRC952244, CRC952245, CRC952267, CRC952268, CRC952269, CRC100234,
Joy Paterson	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. Committee member of Omarama Airfield. Resource consents CRC010693.1, CRC010694, CRC010727.2, CRC110202, CRC122382, CRC174573, CRC194088, CRC194520, CRC203348.
John Sunckell	Environment Canterbury Councillor, Register of interest held by Environment Canterbury
Keiran Whyte	Te Rūnanga o Moeraki, Employee of Tuna Trap and Transfer Team.
Michael McMillan	Te Rūnanga o Arowhenua.
Rynee de Garnham	Te Rūnanga o Waihao

1.3 LINZ REPORT

Author: Staff Report, Environment Canterbury

Authoriser:

Attachments: Nil

STAFF RECOMMENDATIONS

That the information be noted.

BACKGROUND

This verbal report is from Shaun Thomason and Tracey Burton, Toitū Te Whenua Land Information New Zealand.

This report provides information on the aquatic and terrestrial pest control activities Toitū Te Whenua Land Information New Zealand (LINZ) are currently undertaking in the Upper Waitaki area.

1.4 BENTHIC CYANOBACTERIA IN THE WHAKATIPU/TWIZEL RIVER

Author: Staff Report, Environment Canterbury

Authoriser:

Attachments: Nil

STAFF RECOMMENDATIONS

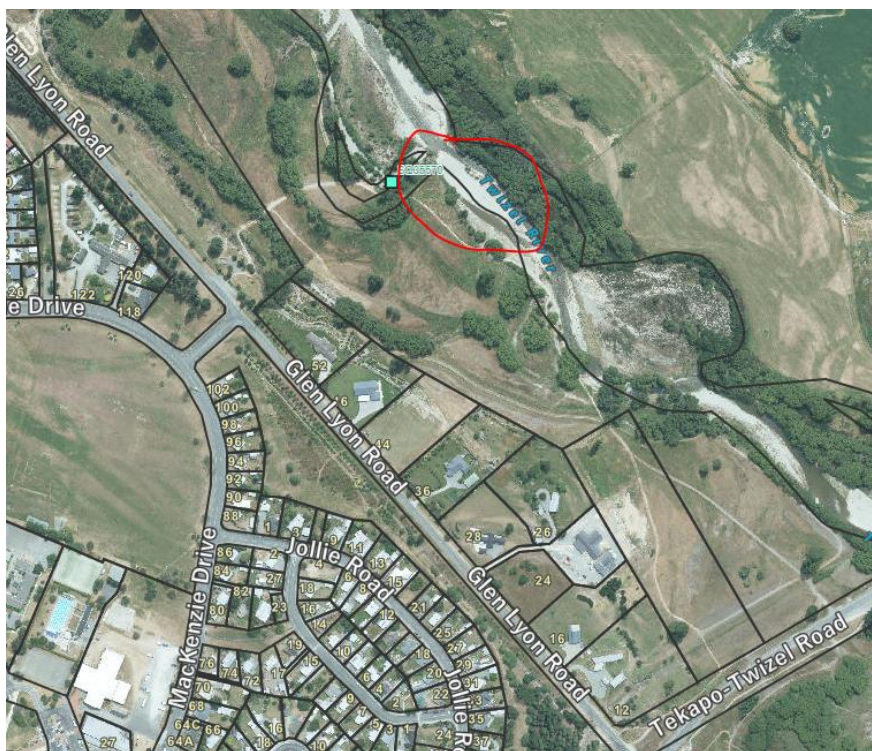
That the information be noted.

PURPOSE OF REPORT

This report is from Shirley Hayward, Science Team Leader - Water Quality and Ecology, Environment Canterbury. It is to inform the Zone Committee on the background and possible causes of potentially toxic algae (benthic cyanobacteria) in the Whakatipu/Twizel River.

BACKGROUND

Following an inspection in Whakatipu/Twizel River at the picnic area in early January (upstream of SH8, rough location below), 24% cover of Cyanobacteria with the presence of detaching mats was found. This meant the site falls into Red/Action threshold, in accordance with guidelines and resulted in Community and Public Health issuing a health warning for the area.



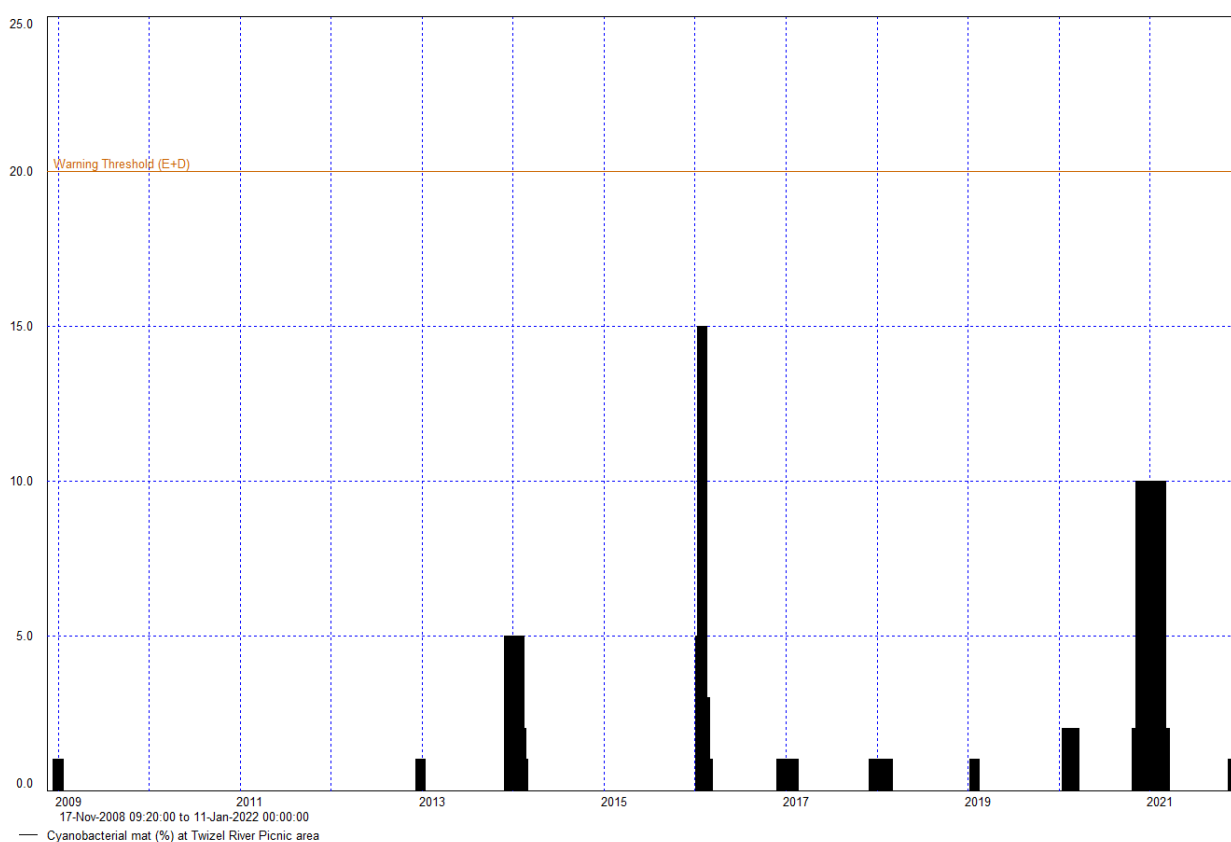
1. Has it happened at this site before?

While observations of low cover of benthic cyanobacteria have been found in past summers at the Twizel River site, this is the first time in over 10 years of summertime monitoring that the amount has reached levels of human health concern.

2. What details are available about the history and testing regime?

We have been monitoring the Twizel River at the picnic area since November 2008. This sampling happens weekly between November and March, with a minimum of 15 routine samples/inspections.

Below is a screenshot of the Twizel River at the picnic area's cyanobacteria cover over time (y-axis is % cover of benthic cyanobacteria):



3. What causes these algal blooms and what can be done about them?

In our rivers, cyanobacterial blooms form over rocks on the bottom (benthic blooms). Benthic blooms in rivers, particularly those producing toxins, is a relatively new problem that has emerged both in New Zealand and internationally over the past two decades. A recent review of current understanding of benthic cyanobacteria in New Zealand rivers led by Cawthron scientist Dr Susie Wood (Wood et al., 2020) is summarised as follows:

- Toxic proliferations of benthic cyanobacteria have been reported in 19 countries. Reports of toxin-producing species and associated animal poisoning have increased over the past 2 decades globally and in New Zealand.

- b. Studies exploring benthic cyanobacterial blooms identify a hierarchy of importance in environmental and biological factors that regulate blooms such as a river flow, fine sediment deposition, nutrients, associated microbes and grazing pressure.
- c. While benthic cyanobacterial blooms are becoming more commonly reported globally, we currently lack standardised approaches to detect, monitor, and manage this emerging health issue.

The most common bloom-forming and toxin-producing benthic cyanobacteria in New Zealand is *Phormidium/Microcoleus*². This is the taxa that is present in Whakatipu/Twizel River. We know that *Phormidium/Microcoleus* can form blooms in waters with variable nutrient status. Nitrogen availability can play a role in promoting early development of *Phormidium/Microcoleus* mats on riverbeds. Once mats are established, entrapment of fine sediment provides an ongoing source of phosphorus. Other micro-organisms that grow within established mats can supply nitrogen to support further mat growth and bloom development.

Removal of blooms is primarily driven by flood events. In cooler months, re-establishment of mats after flooding is slow. However, once a habitat has been colonised by *Phormidium/Microcoleus*, it appears to have a greater propensity for subsequent proliferations.

It will be incredibly concerning to the community that a health warning has been put in place for Whakatipu/Twizel River. It is one of the few rivers of its kind in Canterbury that was previously considered safe for swimming and dogs over summer. Of concern is also the deterioration in the swimming grade for this site (based on faecal indicator bacteria – *E. coli*), such that the river is graded as Fair for the last two seasons, whereas it was previously graded as Good. We need to look further into whether there has been a change in land use/nutrients/faecal inputs in the Twizel catchment and whether this is a contributor to deterioration along with considering climatic factors.

4. How do test results get through to LAWA so that it is regularly updated for people who might be checking water quality before they swim?

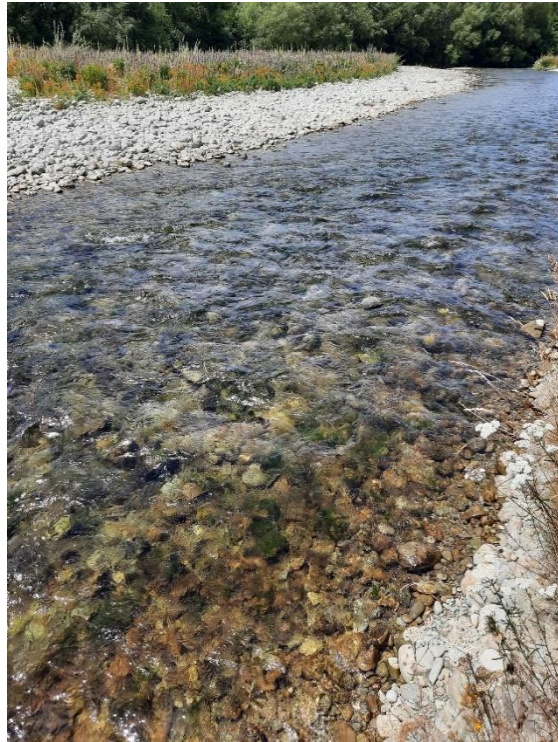
Results for *E. coli* should be instantly updated on LAWA once results are received by Hill Labs (a process that takes approximately 24hr from the sample). Cyanobacteria results should be updated as soon as our staff get back from the field, so the same day an observation is made if the site status has changed. If the cyanobacteria result has not changed the health risk then within a few days of sampling is typical. Generally, all data should be on LAWA within 24-48 hours of sampling. Health warnings are a bit more of a process, with CPH/CDHB needing to approve the health warning and issue it before we action information on LAWA. Unfortunately, the issuing of the media release was not sent to ECan staff on this occasion, and we only became aware of the information through the media. We have requested direct notification from CPH/CDHB once they have issued a health warning.

² the common toxin producing genus benthic cyanobacteria has recently had a name change from *Phormidium* to *Microcoleus*

5. Examples of *Phormidium*/*Microcoleus* blooms in Canterbury rivers



Opihi River (2017)



Twizel River (2022)

6. Current cyanobacterial river warnings in Canterbury





- Twizel River at picnic area (upstream of SH8)
- Ashley River/Rakahuri at Rangiora-Loburn Bridge (Cones Road)
- Selwyn River/Waikirikiri from Whitecliffs Domain to past Glentunnel camping ground.

1.5 CWMS ACTION PLAN BUDGET

Author: Staff Report, Environment Canterbury

Authoriser:

Attachments:

1. Action Plan Budget [↓](#) 
2. Fund Application Omarama Stream Water Users Group [↓](#) 
3. MOU Omarama Stream Water Users Group [↓](#) 
4. Fund Application Lake Middleton Willow Control [↓](#) 

PURPOSE OF REPORT

This report is by Janine Roux, Environment Canterbury and follows on from Zone Committee workshops held in October. It provides recommendations on the allocation of the CWMS Action Plan Budget for the 2021/2022 financial year. This report outlines projects to the sum of \$50,000.

STAFF RECOMMENDATIONS

1. That the report be received.
2. That the Upper Waitaki Zone Committee recommends to Environment Canterbury that the CWMS Action Plan budget is allocated to the following two projects:
Omarama Stream Water User Group Irrigation project for \$21,000 excl GST
Ōhau Conservation Trust, Lake Middleton willow control for \$11,000 exl GST
3. That the Upper Waitaki Zone Committee recommends to Environment Canterbury that the remainder of the budget is allocated to the remaining three projects listed in the Upper Waitaki CWMS Action Plan Budget 2021/22.
4. That the Upper Waitaki Zone committee agrees that if any of the projects cannot go ahead before the end of the financial year, the committee will make further recommendations to reallocate that budget to other projects in April 2022.

BACKGROUND

The CWMS Action Plan Budget was launched in 2021 with the purpose of the funding to allow Zone Committees to focus on implementing their action plan and leverage other funding opportunities to achieve the CWMS priorities.

Each of the ten water zones in Canterbury has \$50,000 to recommend on projects that relate to their Zone Committee Action Plan 2021 - 2024. The budget is administered, allocated, and monitored by Environment Canterbury.

PROPOSALS

1. Two proposals have been circulated to the committee for consideration:
 - a. Omarama Stream Water User Group Irrigation project for \$21,000 excl GST
 - b. Ōhau Conservation Trust, Lake Middleton willow control for \$11,000 exl GST

Upper Waitaki Zone Committee CWMN Action Plan Budget 2021/21 – unconfirmed

What	Action relating to Zone Committee Action Plan	Zone Committee Priority	Estimate budget EXCL GST
Supporting the Ahuriri catchment farmers with improved irrigation and farming practices. Focus on working smarter to improve impact on environment through better use of inputs. Engaging with industry, Irrigation NZ etc. to host both individual/on-farm and group sessions.	<ul style="list-style-type: none"> Exploring opportunities to partner with key community groups who are focused on waterways, such as the Ahuriri Catchment Community Group; 	support catchment groups taking collective action to reduce losses of contaminants, prioritised where they are addressing identified at-risk areas	\$25 000 Confirmed @ \$21,000 Proposal circulated
Support Lake Ohau planting project	<ul style="list-style-type: none"> Exploring opportunities to partner with key community groups who are focused on waterways; Recommending biodiversity funding with a priority focus on mahinga kai sites; 	We will communicate and engage with our communities	\$10 000 Confirmed @ \$11,000 Proposal circulated
Support conservation efforts around Lake Alexandrina	<ul style="list-style-type: none"> Exploring opportunities to partner with key community groups who are focused on waterways; Recommending biodiversity funding with a priority focus on mahinga kai sites; 	We will communicate and engage with our communities	\$4 000 To be confirmed
Youth engagement through Mōkihi workshop and additional hāngi in Twizel in early part of 2022.	<ul style="list-style-type: none"> Gaining insight into cultural values and areas of significance relating to mahinga kai; Engaging with schools and youth to illustrate the importance of mahinga kai and the local history; Hosting hāngi for stakeholders and local schools. 	We will commit to the enhancement of Nohoanga, improved health of key waterways for customary use and enhancement of mahinga kai opportunities	\$7 000 To be confirmed – consideration needed with current COVID restrictions

Host wananga with local runanga and install pou signifying importance of the area that the session is held (area to be confirmed)	<ul style="list-style-type: none">Gaining insight into cultural values and areas of significance relating to mahinga kai;	We will commit to the enhancement of Nohoanga, improved health of key waterways for customary use and enhancement of mahinga kai opportunities	\$4 000 To be confirmed – consideration needed with current COVID restrictions
Potential total			\$50,000

February 11, 2022

Simon Cameron
Chair UP Zone Committee
c/o Janine Roux
P O Box 345
Christchurch 8140



Dear Simon,

RE: Seeking funding for Omarama Stream Water Users Group Project: Soil Moisture Monitoring Pilot Project

On behalf of the Omarama Stream Water Users Group (OSWUG) I am seeking financial support from the Action Plan Budget for an Omarama Stream Water Users Group Project.

Background:

The Omarama Stream Water Users Group (OSWUG) is the culmination of landowners in the catchment recognizing and seeking to address ongoing water quality/quantity matters. The issues around water quality in the catchment were first raised a number of years ago, and the group has been working hard with the project management and facilitation support of Irricon Resource Solutions to make improvements to water quality in the catchment via on farm and catchment wide initiatives.

The group is bound by a Memorandum of Understanding (attached) that further outlines the purpose and commitments of the group. This MoU sets out agreed short and long term actions that reflect national and regional environmental planning legislation aspirations, particularly the purpose of the Upper Waitaki Zone Committee.

The group have all committed to contributing \$2/irrigated hectare to an Environmental Enhancement Fund to support projects such as this. Considering the applicability of the project outcomes to other catchments in the Upper Waitaki, it is considered a suitable project to seek funding from the Zone Committee.

A key project the group is looking to enact is a **"Soil Moisture Monitoring Pilot Project"** – this reflects one of the agreed actions of the group – that is **"to Investigate and implement technology that can improve nutrient loss management"**

The overall aim of the project is to:

- **Understand soil moisture**
- **Optimize the use of soil moisture monitoring technology**
- **Make good irrigation decisions with confidence**

All members of the group (listed in the MoU) have already individually installed soil moisture monitoring technology as part of previous work and have recently completed a "Soil Moisture Monitoring Workshop" led by Soil Moisture expert Jane Robb. As a result of this workshop, it was identified by the members that considerable gains and improvements could be made to overall effectiveness and use of this technology by collaborating to manage, understand and use this equipment, data and various software system in a catchment wide approach.



Findings and recommendations from the project would then be assimilated openly to other catchments in the Upper Waitaki Zone (or wider), in the interests of overall improvements to irrigation decision making – with a view to reduce nutrient losses and loads that contribute to TLI readings in the Ahuriri Arm.

Ecan staff have committed to supporting the OSWUG in this endeavour and have committed to progressing and assisting with this project, should funding be successful and the project can begin. Ongoing liaison with the Ecan team undertaking lysimeter readings from within the catchment (Ognjen Mojsilovic), collaboration with the Land Management Team (Ian Lyttle and Jenna Hughes-Games) is underway.

Project Outline:

The Omarama Catchment is located in the Upper Waitaki Zone – the Omarama Stream flows southwest of Omarama township and is a tributary of the Ahuriri River, which then flows into the Ahuriri Arm of Lake Benmore. The stream is classified as hill-fed and flows primarily through or is the direct catchment of the 7 properties in the OSWUG. (identified in the MoU).

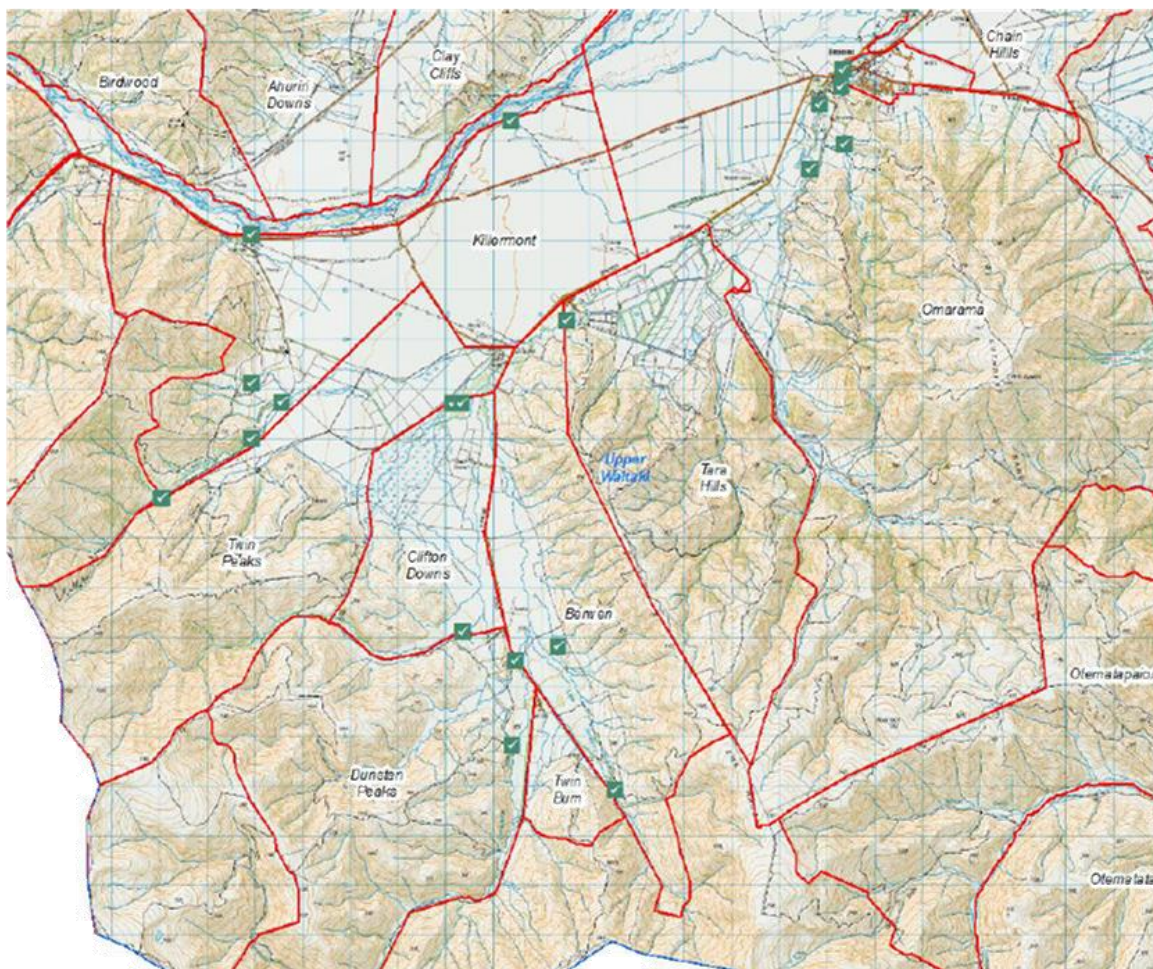


Figure 1: Omarama Catchment and property labels

Soil moisture knowledge is one of the most critical elements for successful plant growth and reducing nutrient losses through the soil profile. It is acknowledged by the group that it is a responsibility for landowners and managers to use water in the most efficient possible manner, ensuring no one is over irrigating and leaching nutrients and to use the available resources to full potential.

Various types of sensors and software have already been installed on the properties as part of group commitments to using technology and meeting GMP. Different systems are used because each property has specific needs depending on irrigation type, landuse, power type, cell or internet connectivity, soils, farm type and management structure.

In order to ensure each farm in the project is supported and upskilled in the best collective use of the technology the following Project Deliverables are proposed:

- Each current system is assessed for set up and precision, identification of errors/inaccuracies
- Existing soil moisture data is analysed
- Recommendations and actions undertaken for any necessary adjustments to full and stress points be made, calibration of sensors where possible, reinstallation where required)
- Assessment and discussion of soil types and suitable application rates for each system
- Training to ensure farm teams understand how best to use their particular hardware and software systems and data and how to make decisions from that
- Delivery of a summary report – this report would detail how to optimise the use of soil moisture monitoring data, key areas of errors or inaccuracy and how to resolve/ improve understanding of the gains made to irrigation efficiency (changes in water applied, particularly regarding the shoulder seasons, how to identify depth of root structures via the data, overall recommendations) and how these results may feed into other on farm technologies.
- Analysis of water quality results and determination of any improvements attributable to the best use of the technology.

The following table outlines the requested funding. The funding would not be allocated specifically to individual properties, as it is difficult to say where the most costs will be incurred. The majority of costs are for expert analysis and reporting. All information will be available to share.

To date approximately \$15,000 has been spent setting up this equipment on each property, total for the catchment is in the order of \$90,000 (excluding the existing lysimeter project).

Deliverable	Total requested funding to achieve project outcomes	Breakdown
Current system assessment	\$3,237	2.5hrs/property @ \$185/hr Irricon (seven properties)
Analysis of soil moisture data		
Recommendations and actions -are the sensors in the right place?		
Training and workshops	\$7,280	3hrs/per property + 1 hr workshop preparation @ \$185/hr + travel Irricon and external speakers as required
WQL analysis	\$3,700	20 hours for catchment @ \$185/hr – Irricon and/or Ryders Environmental
Project report	\$7,000	Estimate for expert report Tony Davoren (only required at end of project)
TOTAL funding requested	\$21 217	Total requested funding
Project Management and administration to be funded by OSWUG	\$5550	30hrs at \$185/hr (Irricon)

Funding sought: The OSWUG seeks funding support to cover the costs associated with the Project Deliverables including expert analysis and final reporting. Investment to date in this project is \$90,000 and total future project costs approximately \$27,000.

The requested funding equals approximately 18% of the total project costs, and 79% of remaining project costs. (OSWUG to fund remainder).

Please do not hesitate to contact me should you wish to discuss.

Yours Faithfully,

Bridget Zoe Pringle
Environmental Consultant
Irricon Ltd





For: Omarama Stream Water Users Group
Subject: OSWUG Memorandum of Understanding
Date: 31 January 2022
Prepared by: Bridget Zoe Pringle

A MEMORANDUM OF UNDERSTANDING (MOU) made this:

31st day of January 2022. Replaces July 2021 version.

1. The Parties

Twin Peaks Station Ltd -M & B Becker
Twinburn Ltd and Clifton Downs -W & R Parsons
Berwen Run - Mr S R & Mrs E N & Mrs P E Croft
Killermont Station Ltd – D & K Thomas
Tara Hills - Ellis-Lea Farms (2000) Ltd D & K Ellis
Omarama Station Ltd -R & A Subtil

2. Purpose of the OSWUG

To maintain and enhance values associated with water in the Omarama Catchment.

3. Actions

- Long Term: Ten Years. Agree to act in good faith, share knowledge and scientific data, expertise and to commit to agreed actions to collectively achieve the purpose.
- Short term: Five Years. Agree to work towards improving water quality in the catchment, by;



- implementing (where on the basis of expert advice) appropriate;
 - Fencing
 - Planting initiatives
 - Wetland management techniques
 - GMP
 - Investigate and implement technology that can improve nutrient loss management
 - Contributing financially to a joint Environment Enhancement Fund based on a nominal amount per hectare of irrigated land per property
 - Undertake catchment projects and if agreed share the knowledge /findings of any projects

4. Contributors

- Irricon as project manager and technical/resource management advice
- Ecan have a support role for the project
- Ryder Consulting/ NIWA will provide expert advice on water quality when requested.
- To qualify as a member of the group you must hold or represent the holder of a resource consent in the catchment.
- Any other contributions as agreed by the group including contributions to the Environmental Enhancement Fund at \$2/irrigated hectare annually from 2022

5. Commitment to Actions

On signing of the MOU all parties will:

- Parties will share relevant information.
- If WCO should ever change, all agree to amend this MOU accordingly.
- The parties will work together to proactively manage the implications of PC5 and consent conditions that have repercussions for other consent holders in the catchment.
- Aim toward equitable conditions for all.
- The parties may, at any time, investigate water sharing



- For transparency, management and compliance the telemetry for the take and discharge associated with the augmentation race shall be available to all parties shall be available on request.
- Losses and inefficient systems are the responsibility of the consent holder and must not adversely affect others. e.g. if there are race loses from the point of divert, it is the owners responsibility.
- If there are any changes to the consents list or new consents sought in replacement, appended to this MOU as Appendix A the applicant must notify the group first. If other consent holders are deemed to be affected as a result of this change, approval must be gained by this group
- All parties are bound by this agreement and any concerns/disputes must be directed to the Irricon address.
- All stockwater must be efficient
- All efforts to improve efficiency are made, this will involve irrigation efficiency investigations to reduce nutrient loss and ensure efficient application and use of water taken.
- FEP audits are completed and audits are transparent.

6. Priority

Neither party shall raise any issue of priority with respect to their applications to amend conditions or take water from the Omarama Catchment.

7. Code of Conduct

The Parties agree that in working together under the Memorandum of Understanding they will:

- Acknowledge the autonomy and independence of each other;
- Act in an honest and transparent way;
- Work together in good faith to identify options and initiate and achieve outcomes;
- Inform each other and share information, resources and expertise.
- Abide by terms of their consents, unless formal Regional Council exemptions are given.
- Make no detrimental public statements about the activities of the group or individuals in the group



8. Quorum and Voting

A quorum for the group has been set at 5 representatives from The Parties attending a meeting. (Consisting of one representative from each Party listed at Section 1 of this MoU).

Proxy votes will be accepted. The facilitator must be advised prior to voting that a proxy has been nominated.

Of the 7 members of the group at least 5 must agree for a decision to proceed.

9. Financial matters

Unless otherwise agreed, the parties will share the costs of experts and Irricon or any other agreed consultants or legal representatives for work related to achieving the purpose of this MOU. This sharing of costs is split equally for 50% of the costs and then per litres/second for the other 50%.

General consulting/project management will average 60 -80 hours/year.

If agreed by the group further opportunities around funding enabled by external agencies (Ecan) will be explored.

Any additional costs that arise over and above the general consulting fees must be agreed by the group before proceeding.

10. Term

The MOU applies to all parties and consents listed in Appendix 1 until the relevant consents expire.

In the event that the land associated with consents and parties listed in Appendix 1 comes under new ownership or is leased, best endeavours to include new owners or leasees of that land as signatories to this MoU will be undertaken. It is the responsibility of the vendor/leasee to advise the purchaser/leasee of this MoU and its commitments.

Each party shall be under an obligation to notify the group of any ownership/lease changes, including a material change in shareholding of the landowning or operating entity.



11. Variation

At any time any Party may give notice of a request for a variation to the MOU and all parties must agree to any variation to the MOU for the change to be made. Any request for a variation to the MOU will be referred to representatives of all the Parties which are listed at the beginning of this MoU.

12. Conflict Resolution

The parties agree that any dispute that arises under the MOU will be resolved as follows:

- Dispute details shall be referred to agreed group representatives for all the parties being Irricon.
- Disputes will be resolved through consensus of the parties.
- In the event consensus cannot be reached, the dispute will be resolved by arbitration under the Arbitration Act 1996.
- The arbitrator will be approved by all parties.

13. Communications

Written communications and documents relevant to the MOU are to be provided to all parties listed in this MOU. Correspondence is to be via email.

Signed:

Twin Peaks Station Ltd -M & B Becker

Twinburn Ltd and Clifton Downs -W & R Parsons

Wendy Parsons

Berwen Run - Mr S R & Mrs E N & Mrs P E Croft

Killermont Station Ltd – D & K Thomas



Tara Hills - Ellis-Lea Farms (2000) Ltd D & K Ellis

Dave Ellis

Omarama Station Ltd -R & A Subtil

Signature: WAParsons
WAParsons (Jan 31, 2022 14:47 GMT+13)
Email: wendlis@ruralinzone.net

Signature: Dave
Dave (Jan 31, 2022 19:34 GMT+13)
Email: dave@ellisleafarms.co.nz

Signature:
Email: berwen@xtra.co.nz

Signature:
Email: twinpeaks@netspeed.net.nz

Signature:
Email: dk.killermont@xtra.co.nz

Signature:
Email: subtil@omaramastation.co.nz

Lake Middleton control of willow spread project



The Ōhau Conservation Trust (the Trust) proposes the following project at Lake Middleton, in the Upper Waitaki Water Zone Committee's (Zone Committee) rohe. We wish to apply for funding from the Zone Committee for this project.

Project Location

The project is located at Lake Middleton, a small rain fed lake in the Ōhau basin. Lake Middleton is identified in the Waitaki Catchment Water Allocation Regional Plan in policy 2, as a high natural character water body. The lake has high natural character worthy of a high level of protection, because it is in a largely unmodified part of the catchment; and contains rare or important species and habitat or habitat assemblages.

There are reports outlining the cultural, environmental and social values of Lake Middleton that have been considered by the Zone Committee, so this application doesn't repeat this information.

Project Description

Lake Middleton has well established willows growing along the eastern and south-eastern margins of the lake. These willows are spreading around the lake, with small to medium new plants being found around the whole perimeter of the lake. Please see photos in Appendix 1.

This project is to undertake control of these willows to stop them establishing along the margins of the lake. (Removal of the long established willows is desirable but is a project for another time).

Please see the map in Appendix 2 showing the proposed control area. The control area covers a distance of approximately 1.25km around the margins of the lake. The lake and its margin are administered by the Department of Conservation (DOC) as a recreation reserve. The Trust has a management agreement with DOC to undertake conservation activities on public conservation land. The Trust has approval from DOC under this agreement to undertake this willow control project.

Project Method

Before the willow removal can occur, a survey of the biodiversity around the willows will need to be undertaken. The results of this survey will determine what control method will be used, i.e. the control method will be chosen so as to ensure no damage to ecosystems around the willows. Jenna Hughes-Games (Land Management Advisor – Southern, ECan) has advised that an ecologist from ECan could undertake this ecological survey along with a local rūnanga representative.

Control work can then be undertaken. The methods used are likely to be spraying of the willow plants or drill and fill techniques where spraying is not appropriate.

A contractor will be engaged to undertake the control work. Willow control is best undertaken in the late Dec to end of February period. This will mean the control will occur in late 2022 and early 2023.

The control work is likely to be undertaken during February 2023, after the busy period at the Lake Middleton camping ground. This will ensure reduced contact with the public by the contractors undertaking the work. The contractor will have health and safety plans in place, most likely including signage about the willow control being undertaken. Any requirements from DOC as the manager of the camping area will also be adhered to.

Total removal of all the spreading willows is unlikely to be achieved in one control operation. The Trust will monitor for regrowth and any new spread and put proposals to potential funding organisations, as the need arises.

If the funding is not all used on willow control, it is proposed the contractor use the chemicals on other plant pest species, such as broom, that is also found around the lake margins. The priority would be willow control but for efficient use of the contractor and funds, these other weeds could also be controlled.

Aims / Objectives

The project aims to ensure the high natural character of Lake Middleton is protected by removing spreading willows. This will mean willows are confined to the long established trees, primarily along the edge of the shingle barrier between Lakes Ōhau and Middleton.

The objectives are:

- ◆ To protect the mauri of Lake Middleton by ensuring the integrity of the ecosystem is not detrimentally effected by the spread of willows.
- ◆ To assist in preserving the high recreational values of Lake Middleton that provide for social and cultural wellbeing of people.

Funding breakdown

The control method to be used will not be determined until an ecological assessment of the control site has been undertaken. For the purposes of calculating the funding required for this project, ECan staff have supplied the Trust with recent charge out rates and the likely amount of effort required for willow removal.

Ground control is around \$120.00 per hour. It is not proposed to use helicopter control methods for control.

After walking the area, our estimate is within the 1.25 km to be controlled, there is on average a willow plant needing to be removed every 3 metres. Of these the majority (say 380 plants) will take on average 10 minutes to treat. A smaller number (say 20 plants) will take longer to treat, say up to 120 minutes to treat. At the ground control charge out rate, the total cost of this project is calculated to be **\$12,400.00 (including GST).**

This calculation allows for other costs, such as travel time as well.

As stated above, other woody weeds (consistent with ECan's ongoing weed control project for the Ōhau Basin) would be removed if all the funds were not needed for willows. If there is insufficient funds to remove all the willows, priority areas will be identified and the control work focussed to them.

How the project links to the Zone Committee Action Plan

As set out above, the relevant ECan regional plan identifies Lake Middleton as having a high natural character. The lake has high natural values, including in the water and on the margins of the lake.

The Draft Lake Middleton Catchment Report (DOC 2019) states:

Despite its small size, the catchment has numerous intrinsic values. The lake and its surrounds provide habitat for many indigenous species, with at least four fish, 27 birds, 26 plants (aquatic and terrestrial), 14 invertebrates (aquatic), lizards (individual species not identified), 66 algae/phytoplankton and four zooplankton species being recorded.

Of these species, two fish, nine birds, one aquatic invertebrate and two plants have a conservation status threat ranking of Threatened or At Risk. Lizard species (Threatened or At Risk) are presumed to be present. Introduced animals (predators) and plant species (weeds), along with human activities, have had major impacts on indigenous species in the catchment.

This project fits with the Zone Committee's plan to enhance Mahinga kai opportunities. Mahinga kai refers to Ngāi Tahu interests in traditional food and other natural resources and the places where those resources are obtained. By removing willows from around Lake Middleton, the natural environment will be enhanced and the natural resources of interest to Ngāi Tahu will be more likely to be able to flourish.

The project also fits with the Zone Committee's plan for the preservation of recreational values of Waitaki Lakes. Lake Middleton is a popular place for land and water based recreation. It is a small shallow lake suitable for active and passive recreation. The Trust has long championed the creation of a formed walkway around the lake, so more people can experience and learn about it. There is an informal path right around the lake now, since the boundary of the reserve and private property has been marked (a Trust project).

Removing willows will enhance the setting and experience from recreational activities on the water and around the lake margins.

The Trust appreciates the opportunity to put this proposal to the Zone Committee for funding. Since 2015, the Trust has successfully delivered a number of projects, funded by grants of around \$146,500.00, received from ECan, the DOC Community Fund and others. We look forward to undertaking another project that will help to protect the special natural values of the Ōhau Basin.

Viv Smith-Campbell
Chairperson, The Ōhau Conservation Trust
February 2022

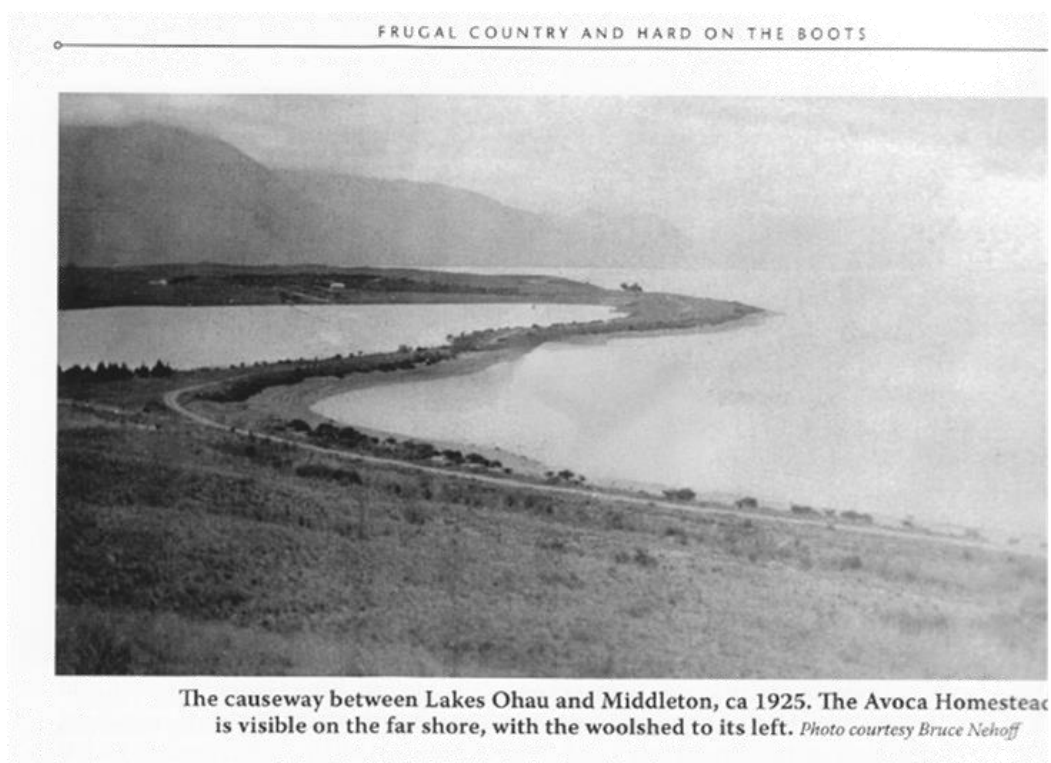
Appendix 1 – Photos of the willows at Lake Middleton

Photo 1: historical glimpse – before the willows around 1925.



Photo 2: Established willows on the south eastern and eastern sides of Lake Middleton



Photo 3: Willow spreading on eastern and northern sides of Lake Middleton



Photo 4: Proposed end of control area (gravel drive to lake) on southern side of Lake Middleton



Photo 5: Small willows found all around Lake Middleton



Photo 6: Broom and other woody weeds along the margins of Lake Middleton

Appendix 2 – Map of proposed willow spread control area

1.6 ZONE FACILITATOR'S REPORT

Author: Staff Report, Environment Canterbury

Authoriser:

Attachments: Nil

STAFF RECOMMENDATIONS

That the information be noted.

PURPOSE OF REPORT

This report is from Dave Moore, Zone Facilitator, Environment Canterbury. It provides information that may be of interest to the Zone Committee that is not covered elsewhere in the agenda.

1. Plan Change 7 – Canterbury Land & Water Regional Plan

The Council has made its decisions on Plan Change 7 (PC7) to the Canterbury Land & Water Regional Plan and Plan Change 2 (PC2) to the Waimakariri River Regional Plan. The Council's decisions adopt the independent hearing commissioners' recommendations on PC7 and PC2 in their entirety. The decisions were publicly notified on 20 November 2021 and the appeal period has now closed. There are five appeals on PC7, made by the following submitters:

- Synlait Milk Limited
- Rangitata South Irrigation Limited
- Mulligan, Kerse and Kingston
- Rayonier New Zealand Limited and Port Blakely Limited
- Te Rūnanga o Ngāi Tahu and Te Rūnanga o Arowhenua

Council staff are working through the content of the appeals on PC7 at the present time. At the moment if people want to see any appeal documents they must request them from the High Court.

2. Lake Ruataniwha update

- Portaloos have been installed at the campground over the summer holiday period and Mackenzie District Council plans to keep them there until after Easter.
- New permanent toilets should be installed by June in similar locations.
- Consultation on the reserve area is currently being undertaken by Xyst Ltd.

3. March meeting

Decision from the committee is needed on what the March / April meeting will be. Initial plan was to host another hangi or BBQ in Twizel – some consideration is needed due to COVID restrictions. Possible options are no meeting, online meeting, field trip to Twizel River and Lake Ruataniwha.

4. Updated Action List

The Action List below updates the committee on progress on items identified at previous zone committee meetings in 2020 and 2021. Items that have now been completed are not included in this list.

Upper Waitaki Zone Committee – Action list (updated from July 2021)

Meeting date	Action	Who	Status
18 June 2021	Progress the Twizel River Restoration initiative further with conversation with Mackenzie District Council and DOC.	Matt Bayliss and Joy Paterson	No further progress.
21 May 2021	Request presentation from Mark Adams from the Catchment Collective South Canterbury Society	Janine Roux	No further progress.
16 October 2020	Report back to Zone Committee on whether there is an increased risk of TLI limits for the Ahuriri Arm of Lake Benmore being exceeded after exploring any differences between the modelled assumption.	Graeme Clarke, Environment Canterbury	No further progress.
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, Environment Canterbury	No further progress.
19 March 2021	Environment Canterbury staff to investigate whether Loch Cameron can be added to the schedule of contact recreational water quality testing.	Shirley Hayward, Environment Canterbury	Completed