Environmental Implementation Committee
8 November 2023

Meeting will be held in the Council Chamber at Level 2, Philip Laing House
144 Rattray Street, Dunedin
ORC Official YouTube Livestream

Members:
Cr Bryan Scott (Chair)
Cr Kate Wilson (Chair)
Cr Alexa Forbes
Cr Gary Kelliher
Cr Lloyd McCall
Cr Michael Laws
Cr Kevin Malcolm
Cr Tim Mepham
Cr Andrew Noone
Cr Gretchen Robertson
Cr Alan Somerville
Cr Elliot Weir

Senior Officer: Richard Saunders, Chief Executive

Meeting Support: Kylie Darragh, Governance Support Officer

08 November 2023 09:00 AM

Agenda Topic — Page

Agenda 1

1. WELCOME

2. APOLOGIES

No apologies were received prior to publication of the agenda.

3. PUBLIC FORUM

Andrew Innes- Ecological Health of Tomahawk Lagoon (Ecotago)

4. CONFIRMATION OF AGENDA

Note: Any additions must be approved by resolution with an explanation

5. DECLARATION OF INTERESTS

Members are reminded of the need to stand aside from decision-making when a conflict arises between their role as an elected representative and any private or other external interest they might have. Councillor Declarations of Interests are published to the ORC website.

6. PRESENTATIONS 4

6.1 Annual Report Presentation: Otago Catchment Community Annual Report 4

6.1.1 2022 &2023 Project Data Report 22

6.1.2 Annual Report Appendix 2 Performance Report 58

6.2 Predator Free Dunedin Annual Report

Copy of Draft Annual Report is in the Resource Center for 2023.11.08 Environmental Implementation Committee

6.3 Central Otago Wilding Conifer Control Group Annual Report 75

6.4 Whakatipu Wilding Control Group Annual Report 86

7. CONFIRMATION OF MINUTES 92

7.1 Minutes of the 9 August 2023 meeting 92

8. OPEN ACTIONS FROM RESOLUTIONS OF THE COMMITTEE

Nothing to report for this Committee

9. MATTERS FOR CONSIDERATION 96

9.1 Regional Wilding Conifer Cost Benefit Analysis and Business Case 96

To present the 'Benefits and Costs of Additional Investment in Wilding Conifer Control in the Otago Region' (cost benefit analysis) prepared by Boffa Miskell on behalf of Otago Regional Council.

9.1.1 Otago Regional Wilding Conifer Strategy 103

9.1.2 Benefits and Cost Additional Investment in Wilding Conifer Control 110

9.2 State of Pests Including Rabbit Night Counts 165

This report provides the results of the state of pest management in Otago, and an update on the state of pests in Otago for 2023 (attachment one).

9.2.1 Biosecurity State of Pest Management in Otago 2023 168

9.3 Freshwater Restoration and Improvement Update and Opportunities 212

This report provides an update on the three ORC priority water quality projects: Tomahawk Lagoon, Lake Tuakitoto, and Lake Hayes. It also provides an update on the Toitū Te Hakapupu project (funded by the Ministry for Environment (MfE).

9.4 Large Funding Requests 231

To seek endorsement of the criteria for a fund to be set up to support funding requests for large scale biodiversity projects in 2023/24.

9.4.1 Large Funding Request (14 September 2022) 236

9.4.2 ECO Fund Eligibility Criteria 245

9.4.3 Assessment Criteria 2023 247

9.5 Future of the ICM Working Group 250

To seek a pathway forward for the continued oversight of the Integrated Catchment Management (ICM) Programme now that the work of the Integrated Catchment Management Working Group (ICMWG) is complete, the pilot Catchment Action Plan (CAP) is underway, and the ICM programme is moving into a new area.

9.5.1 Otago Integrated Management WG ToR 255

10. NOTICES OF MOTION

11. CLOSURE

OTAGO CATCHMENT COMMUNITY INC

Annual Report

31 July 2023

2022 – 2023 ANNUAL REPORT

PREPARED FOR OTAGO REGIONAL COUNCIL AND MINISTRY FOR PRIMARY INDUSTRIES

Executive Summary

The OCC's Annual Report for 2022 - 2023 showcases the organization's unwavering commitment to supporting Catchment Groups and addressing environmental issues throughout the Otago region. It reflects the dedicated work carried out in administrative, governance, connections, and catchment group support workstreams.

Key Highlights:

1. Financial Transparency and Sustainable Impact: The Annual Financial Report exemplifies OCC's financial transparency, revealing revenue streams and fiscal strategies. This will be validated by the Independent Auditor's Report, it symbolizes OCC's dedication to a sustainable future in Otago.
2. Administrative Efficiency: Notable accomplishments in the administrative workstream include enhanced operational efficiency, comprehensive health and safety reviews, and securing comprehensive insurance coverage and implementing OCC procedures for effective project management.
3. Governance Adherence: The governance workstream ensured compliance with rules, constitution, and regular reporting to the Steering Committee and funders. Engagement with the Otago Regional Council (ORC) and Ministry for Primary Industries (MPI) was actively pursued to meet funding contract milestones.
4. Strong Engagement: The connections workstream prioritized engagement with catchment groups and stakeholders, maintained a comprehensive directory, and actively collaborated with Iwi, local councils, and national catchment group events.
5. Catchment Group Support: The OCC provided ongoing support and funding to catchment groups, fostering collaboration through the establishment of a Regional Catchment Group Leaders Forum and catchment group events.
6. Robust Network: OCC's network includes 17 memberships and 28 sub-groups, supporting 25 catchment groups with approximately 275 meetings and events, reinforcing community connections.
7. Overcoming Funding Challenges: Strategic changes streamlined the funding process, resulting in a surge of applications in the last quarter of 2022-2023.

The OCC's 2023 Annual Report encapsulates the organization's proactive efforts in advancing environmental conservation and water quality improvements in Otago. By focusing on key workstreams, OCC achieved remarkable milestones in administrative efficiency, financial transparency, governance adherence, and robust stakeholder engagement.

Financial transparency remains a cornerstone of OCC's principles, with the Annual Financial Report demonstrating a clear insight into revenue streams and fiscal strategies. The validation from the Independent Auditor's Report will further solidify OCC's commitment to creating a sustainable future for Otago, aligning every decision with lasting environmental change.

The connections workstream's emphasis on stakeholder engagement has strengthened OCC's ties with catchment groups, Iwi, local councils, and the broader community. This inclusive approach facilitated the exchange of knowledge, ideas, and positive news stories, fostering collaboration in various environmental conservation initiatives.

By providing ongoing support and funding to catchment groups, OCC reinforced its commitment to empowering local communities to drive environmental change. The continuation of the Regional Catchment Group Leaders Forum and catchment group events encouraged collaboration, knowledge-sharing, and collective efforts in achieving common goals.

Despite challenges in the beginning of the year, OCC's adaptability and strategic approach led to a surge of funding applications in the last quarter of 2022-2023. By changing our Seed and Small Project Fund's into one "Catchment Group Fund" removed barriers to groups applying to this fund.

Looking ahead, OCC's future directions involve building meaningful relationships with Iwi, leveraging cutting-edge technology, promoting education and citizen science, and scaling up community engagement. Through these proactive measures and continued dedication, OCC endeavours to create a sustainable and ecologically responsible future for Otago, making significant contributions to water quality improvement and environmental conservation in the region.

Table of Contents

Executive Summary *1*

OCC Vision and Objectives *4*

Introduction *4*

1. Draft Financial Performance Report *5*

2. 2021 -2022 Work Plan Outputs *6*

1. Administrative 6

2. Governance 6

3. Connections (Awareness/Connectivity) 7

4. Catchment Group Support 8

2. Project Data Report *12*

3. OCC Funding and Operational Issues *13*

4. OCC future opportunities or directions *14*

5. Assessment of contribution to improving water quality and improvement in environmental domains *16*

Summary *17*

OTAGO CATCHMENT COMMUNITY ANNUAL REPORT 2022-2023

OCC Vision and Objectives

"To create and support an Otago wide network of Catchment Groups that are addressing environmental issues now and for generations to come".

Otago Catchment Community Inc vision is backed by its objectives; these are as following:

- ***Assisting with the formation and direction setting of all Catchment Groups***
- ***Establishing sustainable funding pipeline to support changing needs.***
- ***Catchment Groups effectively communicate their stories***
- ***Facilitate collaboration between Catchment Group's, Government, Iwi, Regional Authorities and Stakeholders***
- ***Facilitating access to experts, information, technology and education***
- ***Better connected with each other and actively sharing ideas, resources & inspiration.***

Introduction

The year 2022-2023 has been a resounding success for the Otago Catchment Community Inc (OCC) as it continues its relentless efforts in addressing environmental issues throughout the region. As an organization driven by a visionary mission, OCC has worked hand in hand with Catchment Groups, stakeholders, and industry leaders to build momentum and support various groups in achieving their environmental goals. This annual report paired with the Project Data Report (Appendix 1) encapsulates OCC's remarkable journey over the past year, showcasing the progress made in administrative efficiency, governance, stakeholder engagement, and most importantly, catchment group support.

The Executive Summary of this annual report presents a comprehensive overview of OCC's achievements throughout the year. It highlights the organization's unwavering commitment to supporting Catchment Groups and driving impactful environmental initiatives. The report delves into key workstreams, including administrative efficiency, governance adherence, stakeholder engagement, and catchment group support.

The OCC Annual Report 2022-2023 stands as a testament to the organization's dedication and success in addressing environmental challenges in Otago. Through collaborative efforts, strategic initiatives, and unwavering commitment, OCC continues to make a positive impact on water quality improvement and environmental conservation. As we look to the future, OCC remains steadfast in its mission to create a thriving network of Catchment Groups and preserve Otago's natural resources for generations to come.

1. Draft Financial Performance Report

The Annual Financial Report of OCC is a significant milestone that showcases the organization's commitment to financial transparency and sustainable impact. The Draft report encompasses key elements, including the Statement of Financial Performance, revealing OCC's revenue streams, expenditure patterns, and fiscal strategies that drive growth. The Statement of Financial Position provides insight into the organization's assets, liabilities, and net worth, reflecting a robust fiscal governance approach. The Cash Flow Statement illustrates efficient cash management, empowering OCC to respond to challenges and seize opportunities effectively. Detailed accounting policies underscore OCC's principled approach to financial reporting. The report's credibility will be affirmed by the Independent Auditor's Report, validating the accuracy and transparency of financial statements. This Independent auditor report is scheduled for completion Sep 2023.

Beyond financial figures, the report symbolizes OCC's dedication to fostering lasting environmental change in Otago, aligning every financial decision with the vision of a sustainable future.

Please refer to Appendix 2. ‘Draft OCC Performance Report’ for this performance report prepared by OCC Accountants with input from OCC Contractors. Please note this report is in draft and is set to be finalised September 2023 with a verified Independent Auditors report attached.

2. 2021 -2022 Work Plan Outputs

1. Administrative

In the administrative workstream, OCC is focused on enhancing operational efficiency and effectiveness. This includes annual reviews of policies and procedures, managing databases for up-to-date records, ensuring comprehensive insurance coverage, managing databases for up-to-date records, and creating and maintaining OCC policies and procedures for effective project management.

1.1. Health and Safety Review (December 2022)
Deliverable: Conduct a comprehensive review of health and safety procedures and confirm contractors are working within health and safety requirements.
Output: Fully compliant Health and Safety plan, ensuring the safety of OCC contractors and stakeholders.

1.2. Insurance (September 2022)
Deliverable: Acquire comprehensive insurance coverage for OCC to ensure adequate protection.
Output: OCC is fully insured, safeguarding the organization's operations, governance and contractors with their own insurance.

1.3. Database Management (Ongoing)
Deliverable: Ensure all registers are kept up to date on a quarterly basis, and all OCC documents are saved in the shared document storage system.
Output: Up-to-date registers and efficient document management in SharePoint, enhancing collaboration among team members.

1.5. OCC Procedures (Ongoing)
Deliverable: Develop and maintain OCC Procedures for contractors and committee members to provide clear guidelines and processes.
Output: OCC Financial policy and process, event management process, communications plan, Procedures and policies in place for effective project management and overall organizational efficiency. More to be developed and reviewed in 2023-2024.

2. Governance

The governance workstream aims to ensure smooth operations by adhering to rules, constitution, and standing orders. Monthly reporting by Regional Coordinators keeps the Steering Committee and funders informed. OCC is committed to meeting the milestone delivery dates for ORC's funding contract and inviting the ORC appointed representative to participate in committee decision-making processes. MPI's funding contract milestone delivery dates are also monitored closely. Regular monitoring, evaluation, and communication with Catchment Groups are carried out through baseline pulse check surveys.

2.1. Rules, Constitution, and Standing Orders (Ongoing - Review in June 2023)
Deliverable: Ensure OCC is operating under the established constitution and standing orders, adhering to governance principles.
Output: Efficient governance practices aligned with OCC's values and objectives.

2.2. OCC Reporting (Monthly)
Deliverable: Provide monthly Regional Coordinators Reports to the Steering Committee, keeping them informed of progress and activities.

Output: 11 reports produced monthly excluding January that update the Steering Committee on OCC's ongoing efforts and achievements.

2.3. ORC Reporting (*Appendix 1. ORC Milestones*)
Deliverable: Meet the milestone delivery dates for ORC's funding contract and actively involve the ORC appointed representative in committee decision-making processes.
Output: Successful completion of ORC funding milestones and active engagement with the ORC representative.

2.4. MPI Reporting (*Appendix 2. MPI Milestones*)
Deliverable: Meet the milestone delivery dates for MPI's funding contract to maintain funding support from the Ministry.
Output: Successful completion of MPI funding milestones.

2.5. Monitoring Catchment Group Progress (Every 6 Months)
Deliverable: Monitor, evaluate, and communicate with Catchment Groups to assess their progress and challenges.
Output: Baseline survey developed and completed for 2022-2023. Quarterly report being developed.

3. Connections (Awareness/Connectivity)

The connections workstream focuses on establishing and maintaining strong relationships with stakeholders, creating a stakeholders' directory, updating a calendar of events, and sharing positive news stories through various platforms. OCC is committed to ongoing engagement with Iwi and working collaboratively with Councillors and ORC staff. The organization actively participates in the National Catchments Event, representing Otago and enabling Catchment Groups to attend.

3.1. Stakeholder Engagement (Monthly Reporting)
Deliverable: Regularly meet and connect with Otago stakeholders to foster strong relationships and collaboration.
Output: 3 Newsletters updating Stakeholders of activities and invites to OCC events where applicable; stakeholders are actively encouraged to attend the annual CG forum.

3.2. Stakeholders Directory (Ongoing)
Deliverable: Create and maintain a comprehensive directory of stakeholders in Otago for Catchment Groups and landholders to access.
Output: It was noted that this needs to be an internal list as OCC does not have the ability to hold a whole and comprehensive up to date list. Therefore, in future this deliverable will be an internal list that is accessible to groups through an OCC Contractor.

3.3. Calendar of Events (Ongoing)
Deliverable: Regularly update OCC's calendar of events for groups and individuals to utilize.
Output: Up-to-date digital Calendar of Events on the website, ensuring easy access to relevant activities.

3.4. News Stories (Ongoing)
Deliverable: Share positive news stories and events through OCC's website, social media, and local/national media.
Output: OCC delivered 3 Newsletters and regularly updated social media platforms informing groups off good news stories and events.

3.5. Iwi Engagement (Ongoing)

Deliverable: Work with Iwi to develop a plan of engagement that reflects the best ways to involve them with Catchment Groups and OCC.
Output: Increased involvement of Iwi in Catchment Groups' activities, fostering collaboration and cultural sensitivity. Initial developments of engagement plan have developed with Aukaha.

3.6. Council Engagement (Ongoing)
Deliverable: Regularly update Council on OCC's progress, successes, and challenges through Council meetings and the ORC representative.
Output: Engaged Councillors and ORC staff, ensuring continued support and awareness of OCC's efforts.

3.7. National Catchment Group Event (Ongoing)
Deliverable: Attend the National Catchment Group Event with Contractors, Committee, and enable Catchment Groups to participate.
Output: 5 Otago CG Members funded to attended the E Tipu Boma World Conference 2023 alongside coordinators Anna and Sam.

4. Catchment Group Support

Under the catchment group support workstream, OCC provides support and funding to existing and emerging Catchment Groups. The funding includes the Seed Fund, Small Project Fund, and Direct Group Fund to maintain momentum and achieve their visions and goals. Contractors and coordinators work together to ensure successful implementation, and mileage reimbursement and accommodation support are provided as needed.

4.1. CG Support (Ongoing)
Deliverable: Provide ongoing support to existing and emerging Catchment Groups to achieve their visions and goals.
Output: 11 Consensus method Workshops completed with Catchment Groups. OCC Coordinators Supported 108 CG Activities. Please reference Appendix 2. “Project Data Report” “Evidence of Contractors Work”

4.2. CG Funding (Ongoing)
Deliverable: Allocate funding through the Seed Fund, Small Project Fund, and Direct Group Fund to maintain momentum and support Catchment Group initiatives.
Output: Financial support to Catchment Groups, enabling them to pursue their projects and activities. A total of $201,559 has been approved to fund Catchment Groups Directly and for their projects. For breakdown reference Table 1. “2021 -2023 Group Funding Table”

Table 1, 2022 – 2023 Group Funding

GROUP	Project Fund $	Fund Approved	Purpose	FMU	Committed/ Uplifted
Teviot WCG	$2000	June 22	Community Planting Event and Road Signs	Roxburgh	Uplifted
Ophiro	$2000		Initiation day and planting	Dunedin	Uplifted
Tomahawk	$400	Oct 22	Opening event costs	Dunedin	Uplifted
E. Otago CG	$5000	Nov 22	Inch Vly Wetland Community Planting Day	N. Otago	Uplifted
Maungawera	$2000	Dec 22	Re-igniting group through pest management plan	Upper Lakes	Committed
Cardrona Gr.	$2000	Dec 22	Re-ignite through reflection and planning session	Upper Lakes	Uplifted
Awamoko	$2000	Mar 23	Aquavan visit (combined application)	N. Otago	Uplifted
Friston	$2000	Mar 23	Aquavan visit (combined application)	N. Otago	Uplifted
Oamaru Creek	$2000	Mar 23	Aquavan visit (combined application)	N. Otago	Uplifted
Battersby	$2000	Mar 23	Aquavan visit (combined application)	N. Otago	Uplifted
Kakanui	$2000	Mar 23	Aquavan visit (combined application)	N. Otago	Uplifted
East Otago	$1406	Jun 23	2x SHMAK kits for E. Otago	N. Otago	Committed
Heriot Burn	$5040	Jun 23	8x surface w.q. samples, 6x e-DNA kits and analysis and results meeting	Lwr Clutha	Committed
Taumata	$4592	Jun 23	16x surface w.q. tests, analysis	Lwr Clutha	Committed

			and results meeting		
Spylaw Burn	$5462	Jun 23	16x surface w.q. tests, 3x e-DNA kits and analysis and results meeting	Lwr Clutha	Committed
Wairuna	$11582	Ju 23	Installing sediment trap, 16x w.q. samples to test effectiveness during IWG period	Lwr Clutha	Committed
Popotunoa	$4592	Jun 23	16x surface w.q. tests, analysis and results meeting	Lwr Clutha	Committed
Moeraki	$5000	Mar 23	Database generation and establishment meeting	N. Otago	Uplifted
Mid-Taieri	$5000	Mar 23	WQ report completion and establishing actions	Taieri	Committed
Tiaki Maniototo	$5000	Oct 22	Aquavan incl stream health component with schools/farmers	Taieri	Uplifted
Otago South	$2400	Mar 23	Propagation workshop	Lwr Clutha	Committed
East Otago	$6850	Jun 23	Planting Project with Signage	N.Otago	Committed
GROUP	**Direct Group Fund $**	**Fund Approved**	**Purpose**	**Rohe**	**Committed/ Uplifted**
Wānaka CG	$6540	Dec 22	Admin, Comms support. Group workshop, plus community workshop	Upper Lakes	Uplifted
Cardrona	$10000	Dec 22	Admin, coordinator support. Group workshops	Upper Lakes	Committed
Friends of Bullock Creek	$9620	Dec 22	Admin, communications support. Volunteer &	Upper Lakes	Uplifted

			community awareness		
Ida Valley CG	$8000	Dec 22	Admin and comms support. Coordination.	Manuherekia	Uplifted
Openvue	$9965	Dec 22	Admin and coordination support	Dunedin	Uplifted
East Otago CG	$15000	Jun 23	Coordinator and admin support	N. Otago	Committed
Glenorchy	$7000	Jun 23	Coordinator and group support	Upper Lakes	Committed
Pomahaka	$15000	Jun 23	Coordinator and communications time	Lwr. Clutha	Committed
NOSLaM	$18000	Jun 23	Coordination and group sessions support	N. Otago	Committed
Teviot Valley	$10000	Jun 23	Coordination role, comms work.	Roxburgh	Committed
Aroha Kaikorai Valley	$10900	Jun 23	Coordination, Admin, Comms	Dunedin	Committed
Lindis CG	$10000	Jun 23	Coordinator and admin support	Upper Lakes	Committed
Mid Taieri Wai	$5000	Jun 23	Admin and Social Media	Taieri	Committed

4.3. Regional CG Leaders Forum (July 2023)
Deliverable: Host a Regional Forum for Otago's Catchment Group Leaders to network with each other and stakeholders.
Output: Regional CG Leaders Forum Co-hosted with NZ Landcare Trust fostering collaboration and knowledge sharing among Catchment Group Leaders hosted 26 July Naseby.

4.4. Catchment Group Events (November 2022)
Deliverable: Host events and learning opportunities for Catchment Groups, with one per Fresh Management Unit (FMU) per annum.
Output: 6 Dr David Norton Events Hosted in five ORC FMU's, 6 Hamiora Gibson Events covering 4 ORC FMU's.

These deliverables showcase OCC's dedication to fostering effective governance, enhancing connections, and providing essential support to Catchment Groups throughout Otago.

2. Project Data Report

For the full report please refer to Appendix 1. “2022-2023 OCC Project Data Report”

Membership Growth: The Otago Catchment Community continues to thrive, with a total of 17 memberships comprising 28 sub-groups. Notably, we have welcomed four new memberships, including five dynamic sub-groups since our last annual report. This surge in participation showcases the growing commitment to preserving Otago's natural resources and fostering community collaboration.

Supporting Catchment Groups: With a dedicated focus on empowering catchment groups, OCC actively supports 24 groups throughout Otago. We are thrilled to have welcomed one new group into our network, reinforcing our efforts to expand our positive influence across the region. In the spirit of fostering connections and knowledge-sharing, OCC facilitated approximately 275 group meetings and events, further solidifying the sense of community among catchment groups.

Expanding Operations: The Otago Catchment Community's initiatives span diverse locations, encompassing various catchments across the region. For specific details and GPS locations of activities undertaken, please refer to point 3 in our comprehensive report.

Contractors Delivering on Objectives: OCC's contractors have demonstrated unwavering dedication to our core objectives and values. Engaging storytelling, compelling photographs, and tangible evidence are featured in the report, providing a vivid picture of activities carried out by contractors. These efforts are intrinsically linked to specific catchment groups, underscoring our collaborative approach in driving positive change.

Focused on Water Quality Improvement: As an organization passionately committed to safeguarding water quality, OCC has undertaken numerous activities and projects that aim to enhance Otago's water resources. For an in-depth overview of these impactful initiatives, please refer to point 5 in our detailed report.

The Otago Catchment Community Project Data Report stands as a testament to our collective journey towards a sustainable and environmentally responsible future. Through transparency and collaboration, we celebrate the strides made and the promising future ahead in preserving the beauty and vitality of Otago's natural landscapes.

3. OCC Funding and Operational Issues

There has been a underspend in funding from Otago Regional Council, primarily attributed to Catchment Groups' limited utilization of OCC Funding Streams. However, in the 22-23 financial year, a positive shift occurred as OCC made a strategic decision to transform the Seed and Small Project Fund lines into the Catchment Group Fund. This crucial alteration enabled groups to submit multiple applications, with each group having the potential to access up to $15,000 per year. As a result, during the final quarter of the previous year, there was a remarkable surge in the number of applications received. This change has effectively reduced barriers for groups seeking funding and has fostered a more inclusive and accessible environment for applicants within the community.

In addition to the changes in funding streams, it is crucial to highlight that the Otago Catchment Community (OCC) has been actively collaborating with various groups to implement projects aimed at enhancing the environment and addressing water quality issues. The focus remains on fostering sustainable initiatives that have a positive impact on the local ecosystems and water resources. By working closely with these groups, OCC is striving to help facilitate the delivery of projects that align with their overarching goals and vision for a healthier and more resilient environment. The collective effort between OCC and the community groups underscores the commitment to environmental stewardship and highlights the importance of safeguarding precious natural resources for future generations.

Moreover, OCC Coordinators have taken further steps to optimize the organization's operations. By consolidating the necessary reporting into Microsoft Power BI, double handling of data will be reduced significantly, enhancing data accuracy and saving valuable time and resources. This integration of reporting systems will allow OCC to operate more smoothly and efficiently, enabling us to better serve Catchment Groups and focus on our core mission of preserving Otago's natural resources and advancing water quality initiatives.

4. OCC future opportunities or directions

The Otago Catchment Community (OCC) has played a pivotal role in fostering environmental stewardship and community engagement throughout the Otago region. As OCC looks towards the future, it is poised to embrace exciting opportunities and directions that will further enhance its impact on water quality improvement and conservation efforts. This section outlines how OCC can take to build upon its existing successes and shape a sustainable and ecologically responsible future for Otago.

1. **Connecting Iwi with Groups:** OCC recognizes the paramount importance of fostering meaningful relationships with Iwi (Aukaha) in acknowledging the principles of the Treaty of Waitangi. In a significant partnership, OCC has collaborated with Iwi to deliver specialized Treaty of Waitangi training to catchment group leaders across Otago. This training aims to enhance leaders' awareness and understanding of the treaty's historical significance, its principles, and their implications for water quality initiatives. By fostering cultural competency and inclusivity, OCC strives to create a platform where diverse perspectives can coalesce, leading to more effective and equitable approaches in preserving Otago's natural environment for the benefit of all
2. **Leveraging Technological Advancements:** The rapid advancements in technology offer OCC new tools to enhance its operations and outreach. The integration of modern data analytics tools like Microsoft Power BI has already started to streamline OCC's reporting processes, providing valuable insights into catchment activities and resource allocations. In the future, OCC is looking to leverage emerging technologies like artificial intelligence and remote sensing to monitor and assess water quality and environmental changes to bring to Catchment Groups. These tools will enable more data-driven decision-making and proactive interventions, ensuring that resources are directed efficiently to areas of greatest need.
3. **Strengthening Partnerships and Collaborations:** Collaboration lies at the heart of OCC's success, and the organization can continue to strengthen partnerships with various stakeholders, including government agencies, research institutions, NGOs, and local communities. By fostering a network of like-minded organizations, OCC can leverage shared expertise and resources to tackle complex environmental challenges collaboratively. Engaging with diverse stakeholders not only enables OCC Coordinators to connect groups with but, will also bring new perspectives, innovative ideas, and financial support, ensuring the longevity and sustainability of OCC's initiatives.
4. **Promoting Education and Awareness:** As OCC expands its reach, it must continue to prioritize public education and awareness initiatives. Increasing the understanding of water quality issues, the importance of biodiversity, and sustainable land use practices will empower individuals and communities to actively participate in environmental conservation. OCC can conduct workshops, seminars, and outreach programs that target schools, farmers, and the wider public, fostering a culture of environmental consciousness and responsible water management. Currently OCC is in Discussions with NIWA's Wetland Expert Chris Tanner to bring a constructed wetland roadshow to Otago.
5. **Encouraging Citizen Science:** Incorporating citizen science initiatives into OCC's projects can significantly augment data collection and monitoring capabilities. By involving local communities in data gathering and monitoring efforts, OCC can expand its knowledge base and instil a sense of ownership and pride in protecting Otago's natural resources. Citizen science programs can also encourage active community participation and help OCC and regional authorities identify emerging issues in real-time.
6. **Scaling Up Community Engagement:** Community engagement has always been at the core of OCC's activities. To scale up this impact, OCC can explore the establishment of community-led conservation projects and participatory decision-making processes. By

empowering local communities to take the lead in designing and implementing water quality improvement initiatives, OCC can ensure that solutions are tailored to the unique needs of each catchment. This approach will not only lead to more sustainable outcomes but also foster a sense of shared responsibility for the well-being of Otago's natural environment.

7. **Building Resilience and Adaptation:** With the increasing uncertainties brought about by climate change, OCC can adopt a proactive approach to build resilience and adaptation strategies. This involves integrating climate science into water quality management plans, promoting climate-smart agriculture practices, and encouraging catchment groups to develop long-term resilience strategies. By preparing for future challenges, OCC can ensure that Otago's water resources remain protected and sustainable for generations to come.

The future of the Otago Catchment Community is rife with opportunities to advance water quality improvement, environmental conservation, and community collaboration. Leveraging technological advancements, nurturing partnerships, promoting education, and embracing citizen science will empower OCC to thrive in its mission. By engaging communities, scaling up community-led initiatives, and building resilience, OCC can play a pivotal role in creating a sustainable and ecologically responsible future for the Otago region. As OCC continues its journey, its dedication to safeguarding the environment and empowering local communities will undoubtedly leave a lasting legacy for generations to come.

5. Assessment of contribution to improving water quality and improvement in environmental domains

Otago Catchment Community (OCC) has demonstrated a commendable commitment to improving water quality and the environmental domains in the region through a comprehensive range of initiatives and collaborative efforts. The following assessment highlights OCC's significant contributions:

Catchment Group Support: OCC actively supports 25 catchment groups throughout Otago, providing them with financial resources and valuable resourcing. This support enables these groups to undertake various projects aimed at enhancing water quality, biodiversity conservation, and environmental restoration.

1. **Empowering Catchment Groups:** By streamlining funding processes, OCC merged the Seed and Small Project Fund Lines into the Catchment Group Fund. This consolidation allows catchment groups to submit multiple applications, with each group eligible for funding of up to 15k per year. This inclusive approach removes barriers to apply and empowers groups to drive impactful projects tailored to their specific needs.
2. **Direct Group Fund:** OCC's Direct Group Fund has been instrumental in enabling catchment groups to contract or employ their coordinators and personnel associated with catchment group activities. This funding has strengthened the capacity and capability of these groups, allowing them to maintain consistent efforts in improving water quality and ecological health.
3. **Biodiversity Initiatives:** OCC has been actively collaborating with experts, organizations like NZ Landcare Trust, Beef and Lamb NZ, and Prof. David Norton, to increase biodiversity awareness within the region. Through educational events and field visits, OCC has raised awareness about the vital role of biodiversity in enhancing water quality and ecological balance on agricultural land.
4. **Collaboration with Iwi (Aukaha):** OCC recognizes the significance of fostering meaningful relationships with Iwi and has worked in partnership with Aukaha to develop a Treaty of Waitangi training for catchment group leaders. This initiative aims to enhance leaders' understanding of treaty principles and promote cultural competency in environmental initiatives.
5. **Engaging the Community:** OCC actively engages with the community through various workshops, events, and educational programs like the "Sam the Trap man" roadshow. These initiatives create awareness about water quality issues, encourage community participation, and foster a sense of ownership and responsibility towards Otago's natural resources.
6. **Data Reporting and Monitoring:** OCC's Project Data Report provides transparent insights into the organization's activities and the impact of contractors' efforts. This robust reporting system enables evidence-based decision-making and continuous improvement in water quality initiatives.
7. **Funding of Groups:** During 2022-2023 OCC Directly funded 12 groups focused on improving Water quality and their local environment approx. $137,000 towards their groups personnel. Alongside this OCC funded approx. $77,000 towards projects and events aimed at improving water quality and the environment through the Catchment Group Fund.

OCC's contributions to improving water quality and the environmental domains in Otago are evident through their multi-faceted approach, collaborative partnerships, and a focus on empowering catchment groups and the community. Their dedication and strategic efforts are

laying the foundation for a sustainable and environmentally responsible future for Otago's natural landscapes.

Summary

The Annual Report of the Otago Catchment Community (OCC) highlights the organization's commitment to financial transparency and environmental conservation. The report includes key financial elements, such as the Statement of Financial Performance and Statement of Financial Position, reflecting OCC's revenue streams, fiscal strategies, and assets. The report also emphasizes OCC's dedication to fostering lasting environmental change in Otago, aligning financial decisions with the vision of a sustainable future. It outlines the organization's work plan outputs, focusing on administrative efficiency, strong stakeholder relationships, support for Catchment Groups, and effective governance. The OCC Project Data Report showcases the organization's significant contributions to improving water quality and environmental domains in the region. This report addresses funding and operational challenges, detailing strategic changes made to enhance accessibility and efficiency. Looking ahead, OCC envisions opportunities for partnership, leveraging technology, promoting education, and scaling up community engagement to achieve its mission of preserving Otago's natural resources.

Overall, the report demonstrates OCC's dedication to financial transparency, environmental stewardship, and community collaboration, making strides towards a sustainable and ecologically responsible future for Otago.

OTAGO CATCHMENT COMMUNITY INC

Project Data Report

July 2023

PROJECT DATA ANNUAL REPORT FOR 2022 - 2023

PREPARED FOR OTAGO REGIONAL COUNCIL AND MINISTRY OF PRIMARY INDISTRIES

Executive Summary

The Otago Catchment Community Inc (OCC) has demonstrated significant progress in its mission to support and empower catchment and water care groups throughout Otago during the 2022-2023 financial year. With a strengthened team and secured funding, OCC has become a trusted provider of support, funding, and expertise for these groups, facilitating meaningful actions toward understanding and improvements for waterway care and community collaboration.

Key Achievements:

- Membership Growth: OCC's membership has grown from 12 to 17 members, with an additional five sub-groups established, totalling 28 sub-groups. The total number of members across all groups has increased to 1,869 members.
- Group Support: OCC coordinators actively supported 25 catchment groups during the year, including facilitating workshops, strategy reviews, and connecting groups to experts, regional council staff, and external support. Additionally, OCC's funding program provided financial assistance to numerous groups, allowing them to undertake impactful projects, tailored to their own catchment.
- Catchment Group Locations: OCC has compiled a list of GPS locations of group activities, enabling a better understanding of the geographical distribution of these groups' efforts.
- Contractor Impact: OCC's contractors have been instrumental in delivering on OCC's objectives and values by working closely with groups and their leaders, facilitating workshops, supporting activities, and assisting with funding applications. Contractors efforts have been evidenced through stories, photos, and other project-related materials in this report.
- Projects and Activities: OCC has undertaken various projects and activities focused on improving water quality in Otago. These initiatives include the David Norton Road Show, Biodiversity events, and the Otago Catchment Group Leaders Forum, which fostered collaboration and information exchange among leaders of catchment groups and stakeholders.

The 2022-2023 Financial Year has been marked by substantial growth and accomplishments for Otago Catchment Community Inc. With increased membership, expanded group support, and successful project implementation, OCC has further solidified its position as a trusted and valued resource for water care groups across Otago. Through effective coordination, funding, and facilitation, OCC continues to play a pivotal role in enhancing waterway care and fostering community empowerment throughout the region.

Table of Contents

Executive Summary *1*

OCC Vision and Objectives *3*

Introduction *3*

ORC Milestone reporting – 4. Project Data *5*

1. Number of Members **6**
Table1. Otago Catchment Community Inc. Members 7

2. Number of groups supported **8**
Table 2. Group Support Table 9

3. List of Group Location with GPS location of activities. **10**
Table 3. GPS Locations of CG Activity 10

4. Evidence of Contractors delivering on OCC's objectives and Values **11**

5. Projects and Activities undertaken **11**
David Norton Road Show 11
Sam The Trap Man 12
Otago Catchment Group Leaders Forum 13
Workshops Facilitated by OCC 13
Catchment Group Funding 14
Direct Catchment Group Funding 14

6. Summary of Joint Initiatives or Projects between ORC and OCC: ***15***
Catchment Group Support Program: 15
Funding Collaboration: 15
Biodiversity and Water Quality Awareness Campaigns: 15
Otago Catchment Group Leaders Forum: 16
Stream Health Days 16
Ida Valley AGM 16

Appendices ***17***

Appendix 1. Evidence of Contractors work ***17***

Appendix 2. David Norton Roadshow – Introduction to Biodiversity ***28***

Appendix 3. Sam The Trap Man tours Otago ***29***

Appendix 4. NOSLaM Review ***30***

Appendix 5. Teviot Valley Water Care ***31***

Appendix 6. Pomahaka Catchment Group Review ***32***

Appendix 7. Catchment Group Leaders Forum ***33***

Appendix 8. Otago CG Map ***34***

Appendix 9. Map showing distribution of OCC Funding ***35***

OTAGO CATCHMENT COMMUNITY INC, PROJECT DATA REPORT FOR 2022-2023

OCC Vision and Objectives

"To create and support an Otago wide network of Catchment Groups that are addressing environmental issues now and for generations to come".

Otago Catchment Community Inc vision is backed by its objectives; these are as following:

- ***Assisting with the formation and direction setting of all Catchment Groups***
- ***Establishing sustainable funding pipeline to support changing needs.***
- ***Catchment Groups effectively communicate their stories***
- ***Facilitate collaboration between Catchment Group's, Government, Iwi, Regional Authorities and Stakeholders***
- ***Facilitating access to experts, information, technology and education***
- ***Better connected with each other and actively sharing ideas, resources & inspiration.***

Introduction

The 2022 - 2023 Financial year saw Otago Catchment Community Inc strengthen their support for groups as numbers increased as well as momentum in Otago's Catchment and Water Care groups grew.

Our part time administrator and .8fte coordinator working alongside our fulltime regional coordinator has secured OCC's position across Otago as a trusted and capable provider of support, funding and connection to expertise and advice. OCC works alongside groups providing support on how to develop and implement successful actions toward improved care of waterways and empowering communities to work together.

Securing MPI's funding for three years to cover the costs of OCC contractors has enabled ORC's funding to cover OCC's operational costs and funds OCC's multi-faceted funding for groups. OCC reviewed their funding model this financial year to expand the availability of project funding for groups, removing the 'seed' and 'small project' fund lines and creating one fund for projects simply called 'OCC catchment project fund'. The use of the fund continues to grow as groups establish their needs and actions and undertake meaningful work in their catchments. With 20 successful applications this financial year. Direct Group Funding, designed to enable group coordination, admin and contractors associated with running groups, has successfully provided 12 groups with this fund, enabling groups to alleviate volunteer burden, elevate workplans to the next level and provided strong and consistent work for the groups receiving this fund. It has enabled groups to develop new funding relationships, co-funding being a feature of numerous groups across Otago. Now into its third round, this fund is open twice each year in May and November. More information is on our website under the funding tab. www.otagocatchments.co.nz

Our website is a hub for information on what OCC provides but also serves as a point of contact to groups across Otago. The aim is to showcase group activities, stories on workshops and projects so the learning and inspiration can filtrate across our large region. Work is underway with NZ Landcare Trust to develop a map of catchment groups in Otago and this feature will enable further details for

each group to be shared, such as websites, project reports and other useful information. This is just one way that OCC works to connect groups across Otago with one another.

OCC coordinators continue to progress Otago's groups, supporting and facilitating numerous meetings ranging from Vision & Values to action planning and strategy reviews. Some groups in Otago are well established and are at the point where their workplans and strategy require review to stay relevant and to reflect the succession within the groups. Alongside this work, the opportunity to create connections between groups and to share resources continues and is gratefully received.

Through MPI's funding we have worked with Scarlatti who helped develop reporting procedures that are beneficial for both OCC and our funders. Scarlatti were integral in supporting the annual catchment survey which was utilised late in 2022. Their great service they offer helps OCC elevate their understanding on the impact of their services. It will be sad to finish this work with them as they pull back from PSLU funded project for MPI at the end of July 2023.

To keep up to date with our activities, and groups across Otago, head to OCC's Facebook page
If you haven't done so already, sign up to the quarterly newsletter, to read more on group activities, and learn about what is coming up next in the catchments space.
Sign up here (scroll to the bottom to add your details).

ORC Milestone reporting – 4. Project Data

Performance Deliverable	Measure	Data/Reference
1. Number of Memberships in the Otago Catchment Community	#Of Members #Of new Members since previous annual report	17 with 28 Sub-groups 4 with 5 new sub groups
2. Number of catchment Groups actively supported (financially or with resourcing)	#Of groups #Of new groups since previous annual report #Of group meetings or events held	24 1 275 (approx.)
3. Locations of group operations	List of catchments (with GPS location where activities were undertaken)	Please refer to point 3 in this report.
4. Evidence of contractors delivering on OCC objectives and values.	Stories, photos, and other evidence showing activities carried out. Evidence should be linked to a specific group/catchment.	Please refer to point 4 in this report and the appendix for evidence.
5. Outline of activities and projects undertaken whose main aim is to improve water quality in Otago.		Please refer to point 5 in this report.

1. Number of Members

In a remarkable demonstration of growing awareness and commitment to water quality improvement, the membership of the Otago Catchment Community Inc. (OCC) has experienced significant growth since the last annual report. The organization's membership has expanded from 12 members to an impressive 17 members, reflecting a burgeoning interest in environmental stewardship and collective action. Furthermore, this growth has catalysed the establishment of five additional sub-groups, elevating the total number of supported sub-groups to 28, each dedicated to addressing water quality issues in their respective regions.

The dedication and engagement of OCC members have been pivotal in fostering this positive momentum. As table 1 “Otago Catchment Community Inc Members” showcasing current members and their represented groups illustrates, diverse stakeholders from various Catchment Groups are actively contributing to the mission of water quality enhancement. Collaborative efforts are bringing together farmers, environmental enthusiasts, community leaders, and industry representatives, all united by the common goal of safeguarding Otago's water resources.

With the collective strength of its members, OCC has witnessed an impressive surge in total membership, growing by 272 individuals to an impressive 1846 members. This upswing underscores the growing awareness of the crucial role that every individual plays in maintaining water quality. As more people recognize the significance of their involvement, OCC's influence and capacity to effect positive change continue to expand.

The remarkable growth in OCC membership and the establishment of new sub-groups stand as testament to the increasing prominence of water quality as a priority in Otago. Through the collaborative efforts of OCC and its members, the region is fortifying its position as a leader in environmental stewardship and fostering a stronger sense of community in the collective endeavour to protect and preserve Otago's precious water resources.

Table1. Otago Catchment Community Inc. Members

Otago Catchment Community Inc. Members, July 2022			
#	Member Name	Umbrella Org Represented	# Group Members
1	Otago South River Care	Lake Tuakitoto Lower Clutha Owaka Tokomairiro Waitahuna Waiwera Rocklands Tahakopa	137
2	Pomahaka CG	Heriot Burn Trib (New) Popotunoa Trib (New) Spylaw Burn Trib (New) Taumata Trib (New) Wairuna Trib (New)	185
3	East Otago CG		90
4	NOSLAM	Awamoko Kakanui Upper Kakanui Lower Kakanui Estuary Kakanui Irrigators Lower Waitaki Irrigators Waiareka Friston Battersby Moeraki (New)	370+
5	Upper Taieri Wai		60
6	WAI Wānaka	Luggate Lake Hāwea Maungawera Valley Cardrona Hāwea Flat Wakatipu	85
7	Lindis CG		22
8	Thomson's Creek CG		28
9	Ida Valley CG		18
10	Manuherekia CG		600+
11	Wānaka CG		14
12	Glenorchy CG		7
13	Friends of Bullock Creek		80
14	Open Vue		100
15	Aroha Kaikorai Valley		50
16	Mid Taiari Wai		55
17	Teviot Valley Water Care Group		23

Totals		
OCC Members	Represented Groups	Group Members
17	28	1869

2. Number of groups supported

OCC coordinators support groups to achieve their goals, delivering group consensus workshops to develop and review these goals and to set direction through action plans. Our coordinators also support groups with connections to experts, connection to regional council staff, other catchment groups and opportunities that will benefit the group. OCC have also been able to offer a number of tickets to national events (National Catchments Forum 2022, and BOMA conference 2023) which provides further inspiration and connection to experts, fellow catchment group members and external support and agencies. Alongside directional support OCC coordinators provide governance and admin support to groups to help them become efficient operators at a committee and executive level.

In addition to the coordinators work on the ground, OCC has a multi-faceted funding programme with two funds available to groups:

1. Direct Group Fund – Available once per financial year with a guideline amount of $10,000
2. OCC Catchment Group Fund – Multiple applications allowed up to $15,000 in total per annum.

The number of groups supported is larger than the OCC members due to the number of non-member groups that the coordinators are working with to establish these Groups. In the appendices, *Appendix 1. (Evidence of Contractors Work)* describes the work our Coordinators have been doing with Otago's Catchment Groups and the outcomes from this work.

Please refer to Appendix 9 to visualize OCC's funding spatially displayed on a detailed map of Otago, showcasing OCC's support to various Catchment Groups and their conservation initiatives across the region.

- A total of 25 Catchment Groups are listed in the table, each with their respective number of group meetings or events held, events supported by OCC and OCC's Financial Support.
- Out of these 25 groups, 108 group meetings/events are supported by OCC, demonstrating the company's commitment to actively engage with and assist the Catchment Groups in their initiatives.
- The total financial support provided by OCC to these Catchment Groups amounts to $201,559, reflecting the significant investment made by OCC to foster conservation and water management projects in the region.
- Notably, some Catchment Groups received higher levels of financial support, such as NOSLAM with $30,000, Pomahaka with $46,268, and East Otago with $23,256, indicating the magnitude of their projects and the importance attributed to their initiatives by OCC.
- Additionally, there are a few Catchment Groups that did not receive financial support from OCC, indicating potential differences in the scale or focus of their activities.

Table 2. (Group Support Table) The table provides a summary of group meetings and financial support from OCC for various Catchment Groups in the Otago region. Overall, the table showcases OCC's active involvement in supporting Catchment Groups and their respective projects, contributing to the overall conservation efforts and environmental well-being of the Otago region.

Table 2. Group Support Table

Group Meetings Table				
#	**Catchment group name**	**Number of Group Meetings/Events**	**Group meetings supported by OCC**	**Total Financial Support from OCC**
1	Coal Creek	1	1	
2	East Otago	20	12	$23,256
3	NOSLAM	80	6	$30,000
4	Lake Hayes	8	3	
5	Wānaka	5	3	$6,540
6	Lindis	12	8	$10,000
7	Otago South	25	6	$12,000
8	Pomahaka	16	4	$46,268
9	Thomsons Creek	6	3	
10	Upper Taieri Wai	20	8	$5,000
11	WAI Wānaka	20	4	$14,000
12	Otago Peninsula	2	3	
13	Lake Wakatipu	2	0	
14	Teviot Valley	5	5	$12,000
15	Lower Taieri	1	0	
16	Glenorchy	7	5	$9,000
17	Manuherekia	10	8	
18	Ida Valley	10	8	$8,000
19	Tomahawk	1	4	$400
20	Mid Taiari Wai	7	7	$7,250
21	Owhiro	1	1	$2,000
22	Open Vue	10	1	$9,965
23	Aroha Kaikorai Valley	2	1	
24	Friends of Bullock Creek	8	4	$9,995
25	Lowburn	3	3	
	Total: 25	282	108	$201,559

3. List of Group Location with GPS location of activities.

The following table 3. (GPS Locations of CG Activity) is a list of all the know Groups in Otago with their GPS locations adjacent to their group name alongside their corresponding ORC Rohe.

The OCC Coordinators are collaborating closely with the South Island Team Lead at NZ Landcare Trust to create the Otago Catchment Group Map, a valuable resource that will be made accessible to our funders, ORC (Otago Regional Council) and MPI (Ministry for Primary Industries). This collaborative effort aims to develop a comprehensive and informative map that highlights the locations and details of various Catchment Groups operating within the Otago region. The map will serve as an essential tool for visualizing the distribution and scope of conservation and water management initiatives undertaken by these groups. As a work in progress, the current draft of the Otago Catchment Group Map is provided in Appendix 8, demonstrating the commitment of OCC and its partners to transparently showcase the ongoing efforts and contributions of these Catchment Groups toward environmental preservation and sustainability in Otago.

Table 3. GPS Locations of CG Activity

#	Catchment group name	GPS Location of Activities	Rohe of Group
1	Coal Creek	-45.502809, 169.288480	Roxburgh
2	East Otago	-45.595788, 170.668667	North Otago
3	NOSLAM	-45.093084, 170.973477	North Otago
4	Lake Hayes	-44.967872, 168.814270	Dunstan
5	Wanaka	-44.606337, 168.985549	Upper Lakes
6	Lindis	-44.749113, 169.511333	Dunstan
7	Otago South	-46.238053, 169.748882	Lower Clutha and Catlins
8	Pomahaka	-45.943581, 169.259180	Lower Clutha
9	Thomsons Creek	-45.110942, 169.557458	Lower Clutha
10	Upper Taieri	-45.114727, 170.090215	Taiari
11	Open Vue	-45.847199, 170.499078	Dunedin and Coast
12	WAI Wanaka	-44.700414, 169.147059	Dunstan
13	Otago Peninsula	-45.854092, 170.630832	Dunedin and Coasr
14	Lake Wakitipu	-45.118485, 168.463931	Upper Lakes
15	Teviot Valley	-45.570555, 169.395217	Roxburgh
16	Lower Taieri	-45.871026, 170.276999	Taiari
17	Glenorchy	-44.843206, 168.394416	Upper Lakes
18	Manuherekia	-45.210390, 169.441550	Manuherekia
19	Ida Valley	-45.045760, 169.860269	Manuherekia
20	Tomahawk	-45.898001, 170.544704	Dunedin and Coast
21	Mid Taieri Wai	-45.5333375, 170.1163243	Taiari
22	Owhiro	-45.896427, 170.315623	Taiari
23	Aroha Kaikouri Valley	-45.882670, 170.466673	Dunedin and Coast
24	Friends of Bullock Ck	-44.7049025, 169.1302973	Dunstan
25	Lowburn	-45.008012, 169.199248	Dunstan

4. Evidence of Contractors delivering on OCC's objectives and Values

Over the past year, OCC Contractors have been actively engaged in a wide range of activities and initiatives aimed at enhancing water quality in Otago and fostering stronger connections with Catchment Groups. These dedicated contractors have been diligently working to strengthen existing relationships with Otago's groups, providing valuable facilitation of workshops, and offering essential support to group activities. From assisting with funding applications to supplying access to experts, the contractors have played a pivotal role in empowering Catchment Groups to pursue their water quality improvement goals.

One of the significant contributions of OCC Contractors has been their support for new and emerging groups. By helping these groups establish themselves, the contractors have not only expanded OCC's network but also facilitated meaningful connections between the new groups and the existing ones. This collaborative approach has enabled knowledge sharing, best practices, and cross-pollination of ideas, enriching the collective efforts to improve water quality in the region.

For a comprehensive overview of the contractors' impactful work with Catchment Groups, readers can refer to Appendix 1 (Evidence of Contractors Work), which provides detailed documentation of the activities and projects undertaken. These initiatives exemplify OCC's commitment to its aim of water quality improvement across Otago, and they serve as a testament to the dedication and expertise of the OCC Coordinators in delivering on the organization's objectives and values.

Continuing to showcase the tangible outcomes of their endeavours, Appendices 2-7 present compelling stories and photo evidence from OCC's website. These narratives capture the essence of Otago's diverse groups and highlight the positive impacts of OCC Contractors' interventions. By sharing these stories and images, OCC aims to celebrate the achievements of Catchment Groups and the collaborative work with OCC Coordinators, inspiring others to join the cause and contribute to the region's collective water quality improvement efforts.

In summary, the relentless efforts of OCC Contractors and Coordinators in supporting Catchment Groups and delivering impactful projects underscore the organization's mission to improve water quality in Otago. Through fostering connections, providing resources, and facilitating collaboration, OCC continues to be a driving force in cultivating a sustainable and resilient future for Otago's precious water resources.

5. Projects and Activities undertaken

The Otago Catchment Community Inc. (OCC) has been actively working on numerous initiatives to improve water quality and biodiversity in the Otago region. Collaborating with various organizations and experts, OCC has implemented a range of projects, workshops, and funding opportunities aimed at fostering sustainable environmental practices and community engagement. Through these efforts, OCC has demonstrated its commitment to safeguarding Otago's water resources and enhancing the well-being of both its communities and natural ecosystems.

David Norton Road Show

The collaboration between NZ Landcare Trust, Beef and Lamb NZ, and Prof. David Norton has led to a significant effort in increasing biodiversity awareness within the Otago region, with a specific focus on improving water quality. Through a series of educational events, this partnership has organized a tour covering six Otago Groups. During each stop, attendees had the opportunity to engage in an enriching experience that aimed to raise awareness about the importance of biodiversity on farms.

Prof. David Norton played a crucial role in these events, delivering informative presentations on Biodiversity on Farm during lunch sessions. His expertise shed light on the significance of

maintaining diverse ecosystems on agricultural land. Particularly, Prof. David emphasized how biodiversity positively impacts water quality, leading to environmental benefits and enhanced overall well-being.

The field visits conducted as part of the events were especially valuable, allowing attendees to witness and learn about typical native biodiversity first hand. These visits provided an opportunity for participants to ask site-specific and catchment-specific questions, fostering a deeper understanding of the practical implementation of biodiversity conservation on farms.

One of the key outcomes of these initiatives was the heightened awareness of the vital role that biodiversity plays in maintaining water quality and ecological balance. Participants gained insights into how incorporating biodiversity into Farm Environment Plans can lead to sustainable and environmentally responsible farming practices. As this awareness spreads throughout the Otago region, it is expected to drive positive changes in farming practices, benefitting both the agricultural sector and the natural environment. Overall, this collaborative effort serves as a significant step towards achieving a more ecologically conscious and biodiversity-rich Otago.

Sam The Trap Man

Building on the biodiversity theme, OCC's collaboration with "Sam the Trap Man" brought forth three impactful Biodiversity events in East Otago, Hawea, and Beaumont, all with a strong focus on predator and browser control resulting in water quality improvement. Participants in these events had the unique opportunity to engage with an expert on biodiversity, catchment-scale predator control, and environmental and community linkages, allowing them to ask pertinent questions relevant to their local areas.

During the evening sessions with Hamiora (Sam), attendees were captivated by his story of restorative works following Cyclone Gabrielle. These sessions highlighted the crucial role of Catchment Groups and the power of collective efforts in overcoming adverse events and challenges. Sam's narrative skilfully linked the struggles of adverse events to the vital role of Catchment Groups in providing government and council entities with valuable tools, data, and information necessary to enhance the region's water quality.

The East Otago Catchment Group took the initiative to secure the expertise of "Sam the Trap Man" for their local event, recognizing the significance of biodiversity and water quality in their region. Impressed by the success and impact of Sam's involvement, OCC collaborated with the Catchment Group and extended the opportunity to secure him for additional events across the Otago region in 2023. This joint effort between the East Otago Catchment Group and OCC demonstrates their shared commitment to raising awareness about biodiversity and water quality, with the goal of fostering sustainable environmental practices and positive outcomes for Otago's natural ecosystems.

The success of these events was evident in the diverse array of participants they attracted, including catchment groups, service and extension providers, and urban dwellers, all united by a common interest in safeguarding water quality and biodiversity. The positive outcomes of bringing together such diverse groups sparked the initiation of follow-on work by OCC, demonstrating a clear commitment to furthering the cause of water quality improvement.

As a result of these events, several existing groups have expressed a strong desire to strengthen their connections with the community, while others are inspired to establish their own groups to contribute to the shared goal of preserving water quality in the region. OCC's continued efforts in this area are now focused on supporting and nurturing these burgeoning initiatives, ensuring that

the momentum for water quality improvement is sustained and leads to lasting positive impacts throughout Otago.

Otago Catchment Group Leaders Forum

The Contractors and Steering Committee of the Otago Catchment Community have been diligently preparing for the upcoming Otago Catchment Group Leaders Forum and AGM, which holds the primary objective of fostering connections among Catchment Group leaders. Recognizing the significance of water quality in their respective regions, the forum aims to inspire fresh ideas and learnings by facilitating interactions between groups with similar goals. By providing a platform for leaders to engage with industry experts and stakeholders, the forum seeks to empower Catchment Groups to make informed and high-quality decisions when executing their individual actions.

The event, scheduled for the 25th of July in Naseby, promises to be both informative and enjoyable. Collaborating with NZ Landcare Trust, OCC coordinators, and NZLT regional coordinator Nicole Foote have curated an action-packed agenda. The day's program includes introductions to encourage networking and camaraderie, the OCC Annual General Meeting to keep participants updated, and an exciting surprise – an afternoon of curling, offering a unique opportunity to continue meaningful conversations and acquire a new skill in a relaxed setting.

Through meticulous planning and a thoughtful agenda, the Otago Catchment Group Leaders Forum embodies the spirit of collaboration and knowledge-sharing. By bringing together leaders from diverse Catchment Groups, the event not only strengthens community ties but also propels collective efforts towards advancing water quality initiatives in the Otago region.

Workshops Facilitated by OCC

OCC Coordinators have been actively engaging with various Catchment Groups through a series of impactful workshops in the 2022 – 2023 Financial Year. These workshops have focused on key aspects, including formulating Vision statements, setting goals, action planning, and conducting strategy reviews. The outcomes of these collaborative efforts have been remarkable and are poised to drive positive change in the region.

Notable achievements include the successful action planning workshop held for the East Otago Catchment Group, where strategies were devised to advance their groups objectives. Similarly, the Pomahaka Catchment Group underwent a comprehensive strategy review to enhance their approach towards water quality management. The NOSLaM committee and the East Otago Catchment Group also underwent strategy reviews to identify opportunities for furthering their water quality initiatives.

In addition to these efforts, OCC provided valuable support to various other Catchment Groups in refining their approaches to water quality improvement. Noteworthy examples include the Cardrona Catchment Group, which received assistance with action planning and reviews to strengthen their efforts. The Ida Valley, Lindis, Lowburn, Teviot Valley, and Tiaki Maniototo Catchment Groups were also actively involved in action planning workshops, where they honed their strategies to positively impact water quality in their respective regions.

Moreover, the OCC Coordinators collaborated with the Manuherekia Catchment Group on developing a Vision and Values statement as part of the Living Manuherekia Project, underlining their commitment to water quality enhancement. The Lindis Group and relevant stakeholders, as well as the Ida Valley Catchment Group, also received support in defining their strategic direction, aligning their actions towards the common goal of water quality preservation.

Through these workshops, OCC has proven to be a crucial partner in empowering Catchment Groups to develop robust plans and strategies, fostering a collective effort towards enhancing water quality throughout Otago. The dedication of OCC Coordinators and the active engagement of Catchment Groups exemplify the region's commitment to safeguarding its water resources for the well-being of both its communities and the environment. The following is a list of workshops completed in 2022-2023, These are also recorded in Appendix 1 “Evidence of Contractors work”

- Action planning - East Otago Catchment Group
- Strategy Review - Pomahaka
- Strategy review – NOSLaM committee
- Strategy review – Eact Otago Catchment Group
- Action Planning & Review – Cardrona
- Action Planning – Ida Valley
- Action Planning – Lindis
- Action Planning – Lowburn
- Vision and Values (Living Manuherekia Project) – MCG
- Strategic direction – Lindis group & Stakeholders
- Strategic direction – Ida Valley
- Action planning support – Tiaki Maniototo
- Action planning – Teviot Valley

Catchment Group Funding

Otago Catchment Community Inc. (OCC) demonstrated its strong commitment to supporting catchment groups throughout Otago by allocating approx. $77,000 to multiple projects. These initiatives include environmental restoration through plantings, increased visibility through signage for catchment groups, educational programs like the "Aqua Van," and community events focusing on mental health and engagement. OCC's generous funding approach allows for multiple applications from various groups, fostering a collaborative effort to improve water quality and community well-being across the region. This inclusive support reflects OCC's dedication to empowering diverse catchment groups and promoting a sustainable future for Otago's water resources.

Recognizing the importance of facilitating impactful projects and streamlining the funding process, Otago Catchment Community Inc. (OCC) took a significant step in enhancing its support to catchment groups. In the 2022-2023 Financial Year, OCC merged the Seed and Small Project Fund Lines into a single Catchment Group Fund. This strategic decision allowed catchment groups to submit multiple applications, providing them with greater flexibility to pursue various projects tailored to their specific needs. With a maximum funding limit of $15,000 per year, OCC effectively removed some barriers to apply, enabling groups to access vital financial resources and empowering them to drive meaningful initiatives aimed at improving water quality and fostering community engagement. This integrated approach highlights OCC's commitment to promoting collaborative and impactful projects that address water care challenges across Otago.

Direct Catchment Group Funding

The Direct Group Fund offered by Otago Catchment Community Inc. (OCC) has proven to be a vital resource for catchment groups in Otago during the last financial year. With approximately $137,000

allocated to 12 groups, this fund has enabled groups to contract or employ their own coordinators, administrators, or personnel associated with the smooth functioning and effective operation of their catchment groups. The financial support provided by the Direct Group Fund has allowed these groups to alleviate the burden on volunteers, elevate their workplans to a more professional level, and maintain consistent and impactful efforts in their respective catchments. By empowering groups to engage dedicated personnel, OCC's Direct Group Fund has been instrumental in strengthening the capacity and capability of catchment groups, facilitating cohesive and sustained actions aimed at improving water quality and enhancing community collaboration throughout the Otago region.

In conclusion, the Otago Catchment Community Inc. (OCC) has undertaken a range of collaborative initiatives, workshops, and funding opportunities to improve water quality and biodiversity in the Otago region. Through partnerships with various organizations and experts, OCC has demonstrated a strong commitment to fostering sustainable environmental practices and community engagement. By empowering catchment groups and supporting impactful projects, OCC is driving positive change and promoting a more ecologically conscious and biodiversity-rich Otago.

6. Summary of Joint Initiatives or Projects between ORC and OCC:

The Otago Regional Council (ORC) and the Otago Catchment Community Inc (OCC) have collaborated on several impactful initiatives and projects aimed at improving water quality and promoting sustainable environmental practices in the Otago region. This collaborative partnership between the two organizations has played a crucial role in fostering community empowerment and collective action for waterway care. The following is a summary of some of the joint initiatives undertaken by ORC and OCC:

Catchment Group Support Program:

ORC and OCC have jointly established a Catchment Group Support Program to provide assistance, expertise, and resources to catchment and water care groups throughout Otago. Through this program, OCC's coordinators actively work with the groups, facilitating workshops, strategy reviews, and providing governance and administrative support. ORC complements these efforts by connecting groups with regional council staff, experts, and external support and supply technical expertise. The support program has been instrumental in strengthening the capacity of catchment groups and enhancing their effectiveness in water quality improvement initiatives.

Funding Collaboration:

ORC and OCC have worked together to secure funding for various water quality improvement projects in Otago. OCC's multi-faceted funding program, supported by MPI funding, aligns with ORC's goals of sustainable water management. The funding collaboration ensures that catchment groups receive financial support for their projects, allowing them to undertake meaningful actions tailored to their specific catchment needs. This joint effort has resulted in a significant increase in successful applications and impactful projects across the region.

Biodiversity and Water Quality Awareness Campaigns:

ORC and OCC have joined forces to organize educational events and campaigns focused on biodiversity and its positive impact on water quality. Collaborations with external partners, such as Beef and Lamb NZ and Prof. David Norton, have led to initiatives like the David Norton Road Show. These campaigns aim to raise awareness among farmers and communities about the significance of maintaining diverse ecosystems on agricultural land for better water quality. ORC staff supported this event by helping with the locations and local understanding of readiness for uptake. ORC's

expertise in environmental management complements OCC's community engagement efforts, resulting in more effective awareness and education initiatives.

Otago Catchment Group Leaders Forum:

OCC have collaboratively organized the Otago Catchment Group Leaders Forum and Annual General Meeting. This event serves as a platform for catchment group leaders to connect, share experiences, and learn from industry experts. The forum fosters collaboration and knowledge-sharing among leaders, empowering them to make informed decisions and drive positive change in water quality initiatives across Otago. ORC staff are included in this forum to increase the chances of connection to Catchment Groups. ORC's support of the forum ensures its success and meaningful impact on the catchment groups.

Stream Health Days

ORC and OCC have collaboratively worked together to organize Stream Health Days in various catchments, including Mid Taiari Wai, Tiaki Maniototo, and Thomsons Creek. These events are dedicated to assessing and monitoring the health of streams and waterways in these regions, with the aim of identifying potential issues and implementing remedial actions. During these Stream Health Days, experts and volunteers from both ORC and OCC come together to teach locals how to conduct assessments of water quality, habitat conditions, and biological indicators in the streams. The data collected during these assessments provides valuable insights into the overall health of the waterways and helps in identifying locals with their waterways.

Ida Valley AGM

Otago Catchment Community Inc. and Otago Regional Council demonstrated their strong collaboration by jointly supporting the Ida Valley Catchment Group's Annual General Meeting (AGM). At this event, OCC and ORC worked hand-in-hand to provide valuable assistance and resources to the Ida Valley community. A panel of esteemed ORC staff members was invited as guest speakers, sharing their expertise and insights on water quality improvement initiatives, enhancing the knowledge and awareness of attendees. This collaborative effort exemplifies the collective commitment of OCC and ORC to empowering local communities and fostering a sustainable and resilient water management approach in the Ida Valley catchment.

In conclusion, the joint initiatives and projects between ORC and OCC have been instrumental in advancing water quality improvement efforts and community collaboration in Otago. Their complementary expertise, resources, and commitment to environmental stewardship have strengthened catchment groups and empowered communities to work together toward a sustainable and resilient future for Otago's water resources. The ongoing partnership between ORC and OCC exemplifies the power of collaboration in achieving positive environmental outcomes and fostering collective responsibility for waterway care.

Appendices

Appendix 1. Evidence of Contractors work

Group	Type of activity	Date	Topic	Pax	Length	Delivery mode
Aroha Kaikorai Valley	Meeting	Apr	Intro To Group with 3 ORC Councillors, Group to apply to DGF and OCC membership	6	3	In-Person
Bannockburn	Meeting	Sep	Meeting to discuss OCC help in setting up a group	1	2	In-person
Biodiversity Event	Meeting	Aug	Landcare Trust planning for biodiversity roadshow	2	2	Online
Cardrona CG	Meeting	Nov	Meeting to support direction of group	5	3	In-Person
	Meeting	Oct	Meetings surrounding Direct Group Funding and Group Structure	4	4	In-Person
	Meeting	Aug	Cardrona AGM - first meet and intro of OCC to group	7	1.5	In-person
	One-on-one consultation	Mar	Supporting group to finalise 12-month plan to receive funding	2	3	In-Person
	Workshop	May	Co-Facilitated with Nic McGrouther, Annual Plan for group	10	4	In-person

CG Leaders Forum	Forum	July	Catchment Leaders Forum	40	6	In-person
Coal Creek	Meeting	Sep	Update that Coal Creek is in a space to think outside of Water Quantity	1	1	In-person
DOC Nga Awa	Meeting	Sep	Stock-take exercise	2	2	Online
East Otago CG	Field day	Oct	Opening Day of Te Hakapupu	45	2	In-Person
	Meeting	Oct	Committee meeting and OCC Survey	9	2	In-Person
	Workshop	Nov	Dr David Norton	24	5	In-Person
	Field day	Nov	Trip to Otago South	20	4	In-Person
	Meeting	Jan	Planning for workshop	2	1	In-Person
	Workshop	Feb	Strat Review workshop and action plan	10	2	In-Person
	Field day	Sep	Planning for David Norton on-site	3	3	In-person
	Catchment group project	July	East Otago AGM	20	2	In-person
	One-on-one consultation	Apr	Connection to 'Sam the Trap Man' secured Sam for 6 more Otago events	1	1	Phone
	One-on-one consultation	May	Planning for 2/3 CG Fund applications	1	1	Phone
	Workshop	June	Sam the Trap Man Afternoon Session	?	4	In-person
	Workshop	June	Sam the Trap Man Evening Session	?	4	In-person
Friends of Bullock Ck	Meeting	Nov	Introduction, membership and DGF applications	2	3	In-Person
	Meeting	Feb	Meeting with group and support in finalising	2	3	In-person

			employment of admin support role			
	Meeting	Mar	AGM, Meeting wider group of members	20	3	In-person
	Meeting	May	Meeting and intro to new admin person	2	1	In-person
Glenorchy CG	Meeting	Jan	Planning meeting for annual events	2	2	In-Person
	Meeting	May	Connection to Southern Lakes Sanctuary, looking for strategy and actions to complete together	11	4	In-person
	Meeting	May	Follow up discussion re SLS and group funding from OCC for project work	1	1	In-person
Hāwea CG (WAI Wānaka)	Meeting	May	Connection to Sam the Trap Man events	2	1	In-person
	Workshop	June	Sam the Trap Man Afternoon Session	40	4	In-person
	Workshop	June	Sam the Trap Man Evening Session	35	4	In-person
Hokonui Rūnanga	Meeting	Oct	Meeting as a catch-up	2	1	In-Person
Ida Valley CG	Meeting	Nov	Meeting around a DGF application	8	4	In-Person
	Meeting	Nov	Meeting to complete survey and group support	8	2	In-Person
	Meeting	Jan	Follow up on provisional DGF outcome	5	3	In-Person
	Meeting	Sep	General Meeting, Biodiversity workshop, OCC Funding	6	2	In-person
	One-on-one consultation	June	Ida Group, AGM planning	1	1	In-person

	Meeting		July	Ida Group, AGM planning	7	1	Online
	Forum		July	Ida Group AGM, Mike Pole guest speaker	35	3	In-person
	One on One		Dec	Ida Committee meeting to complete workplan for DGF	6	2	In person
	One on one		Mar	Ida chair – catch up and discussion of job description for admin role	1	1.5	In person
	One on one	Apr	Write up story for local newsletter (Oturehua post) on group activities	2	3	On line	
	One-on-one consultation		Apr	Supported group to reinstate water testing regime	2	2	In-person
	Workshop		June	Action Planning Workshop	12	4	In-person
Kaihiku and Kuriwao (Otago South)	One-on-one consultation		Mar	Support developing small project app and developing event idea. Propagation 201	1	2	Online
Kyeburn CG	One-on-one consultation		Apr	Met with Farmer lead to discuss wilding pine issue,and next steps	1	3	In-person
Lake Hayes (& Mana Tāhuna)	Workshop		June	Sam the Trap Man Afternoon Session planning	4	1.5	In-person
	Workshop		June	Sam the Trap Man Evening Session planning	4	1.5	In-person
Lindis CG	Meeting		Sep	Meeting with Lindis and ORC for Willow management plan	1	2	In-person
	Field day		June	Lindis site tour for ORC councillors and staff (& CODC)	20	3	In-person
	Catchment group project		June	Lindis AGM	12	2	In-person
	One-on-one consultation		July	Support to Lindis to develop thinking around willow control	1	1	Other

	Catchment group project	Feb	Connection to ORC for Willow removal project next steps.	3	4	In-person
	Catchment group project	Feb	MPI ICP Fund app support	3	3	In-person
	Field day	Mar	Supporting group with stakeholder/partnership meeting	10	3	In-Person
	Meeting	Apr	Stakeholder engagement for Pest Plant Mgmt	14	3	In-Person
	Workshop	May	Facilitated meeting for CG and Stakeholders, outcome of actions shared across attendees	14	4	In-person
Lowburn CG	Meeting	Aug	Lowburn first meeting	4	2	In-person
	One-on-one consultation	Mar	Supporting group with connection to ORC/DOC for biodiversity survey of catchment	2	2	In-Person
	Workshop	June	Action Planning Workshop, with ORC staff connected to group and presenting on areas of expertise (& codc)	10	3	In-person
	Meeting	Jan	Group check in and planning for scientist visit from ORC	1	1	In-Person
	Meeting	July	Met Lowburn resident to plan first meeting for possible group	1	2	In-person
Luggate CG	Meeting	May	Met lead to discuss willow issues and make connections to ORC	3	2	In-person
	Workshop	Oct	Prof David Norton	22	5	In-Person

Manuherekia CG	Meeting	Oct	Meeting surrounding Mfe Funds and supporting project team #1 (Living Manuherekia)	4	2	In-Person
	Meeting	Oct	Meeting surrounding Mfe Funds and supporting project team #2 (LM)	4	2	In-Person
	Meeting	Oct	Meeting surrounding Mfe Funds and supporting project team #3 (LM)	4	2	In-Person
	Meeting	Dec	Meeting to discuss OCC involvement in MfE project	3	2	In-Person
	Meeting	Feb	Exemplar Catchment Meeting, OCC updated on engagement	10	3	In-person
	Workshop	June	Vision and Values Workshop for Exemplar Project (LM)		4	In-person
	Meeting	Sep	Meeting to discuss trib groups	1	2	In-person
Mid Taieri Wai	Funding	Jan	Small Project Fund application	2	1	Phone
	Field day	May	WQ Field day, Westpac funded	34	5	In-person
	Meeting	May	Planning session for DGF	2	2	In-person
	Field day	Sep	Stream Health days and Planting day	30	6	In-person
	Workshop	June	Mid Taiari vision and goals	12	3	In-person
	Meeting	July	Mid Taiari planning for follow up to workshop	1	1	Other
Moeraki CG (NOSLaM)	One-on-one consultation	Feb	Support in developing small project application, admin support of new group.	2	3	In-Person
National Catchments Forum	Conference	Oct	National Catchments Forum funded 9 Otago people plus OCC Coordinators	9	20	In-Person
	Meeting Nov		Stocktake meeting conducted by Nga Awa team 2	4	Blended	

Nga Awa Taiari	Workshop	May	Whakawhanaungatanga at Ōtākau Marae	80	6	In-Person
NOSLaM	Workshop	Oct	Strat Review workshop #2	12	4	In-Person
	Workshop	Nov	Prof David Norton	8	5	In-Person
	Meeting	Nov	Planning meeting around multiple seed fund applications	2	2	Phone
	Meeting	May	Monthly meeting, clarified OCC funding process	10	4	In-person
	Workshop	May	Seed fund to 5 groups, brought Aqua Van to Oamaru	200	8	In-person
OCC AGM	Forum	July	OCC AGM	25	1	Blended
Open Vue	Meeting	Oct	OCC Membership and Direct Group Funding	2	2	In-Person
Otago South RC	Meeting	Oct	Stakeholders workshop	15	4	In-Person
	Workshop	Nov	Prof David Norton	18	5	In-Person
	Field day	Nov	Host East Otago CG and tour around projects	20	4	In-Person
	Workshop	June	Sam the Trap Man Evening Session		4	In-person
	One-on-one consultation	Aug	Tuapeka - support to seek funding	1	2	Other
	One-on-one consultation	Aug	Catch-up with coordinator and discussion around GMP's	1	1	Other
	One-on-one consultation	Sep	Catch up and discuss options for expert access	1	2	In-person
	Meeting	June	Owaka OSPRI exit strategy meeting	43	2	In-person
Ōtākou	One-on-one consultation	Aug	Invite to beginning of Tomahawk Lagoon CG events	1	1	Other

Pomahaka WCG	Meeting	Oct	Meeting attendance and OCC Survey	12	3	In-Person
	Workshop	Nov	Prof David Norton	22	5	In-Person
	Workshop	Dec	Strategy review part 1	12	4	In-Person
	Workshop	Feb	Strat Review workshop #2	11	4	In-Person
	Forum	Sep	Stakeholders meeting	12	3	In-person
	Catchment group project	June	Pomahaka AGM	30	2.5	In-person
	One-on-one consultation	Mar	Support on mapping component of MPI Milestone, Connection passed to Beef and Lamb for tech support	1	1	Online
	One-on-one consultation	Mar	Drafting of Trib Group Terms of Reference	1	1.5	Online
	One-on-one consultation	May	Planning for five CG Fund applications	1	1	Phone
Te Nukuroa Ō Matamata	meeting	May	Meeting for potential lower Taiari group	3	3	In-person
Teviot CG	One on one	Oct	Seed Propagation workshop planning (OCC Seed Fund)	3	4	In-Person
	Field day	Nov	Seed Funded Propagation day	16	6	In-Person
	Meeting	Jan	Meeting with Scientist (Otago Uni) who is conducting water testing for the group	1	2	In-Person
	Field day	Aug	Teviot community planting day and signage reveal	30	2	In-person
	One on one Aug		Story write up for newspaper (CO News) 2	3	Phone	
	One-on-one consultation	June	Teviot support for seed funding	2	3	Blended
	Meeting June		Discussion on planning for community day 6	2	In-person	

	Meeting	Mar	Supporting to finalise PSP application, plus taking their WQ results further	4	3	In-Person
	Meeting	May	Success with PSP, so next steps of PSP funding – implementing plan with group and scientist	3	3	In-person
Thomsons Creek CG	Field day	Oct	Community day for Thomsons creek including Aqua van visits	50	8	In-Person
	One on one	Mar	Discussion on fencing support for project	2	1.5	Online
	Meeting	Mar	Setting Direction for Wetland Event with Chris Tanner	2	2	In-person
	One on One	April	Meeting with contractor to discuss Gold Pine support for project	1	1	In person
Thriving Southland	Forum	Aug	Attendance of TS South Island Forum of Catchment Groups	16	2	Online
Tomahawk Lagoon CG	Meeting	Oct	Seed Funding For Launch Date	12	2	Other
	Meeting	Oct	Planning meetings x2 for launch	5	4	In-Person
	Feild day	Nov	Opening Day of Tomahawk lagoon opening day	10	2	Other
	Meeting	Nov	Intro to the new ORC project manager and the TLCG team	5	1	Online
	Meeting	Aug	Landholders meeting and planning of community event	5	2	In-person
	Meeting	June	Tomahawk Lagoon CG planning meeting	5	2	In-person
	Field day	May	Science day, crawthrawn report explained	31	4	In-person

Upper Taieri Wai	Field day /Funding	Oct	Aqua van visit and community event, including OCC small project funding	50	8	In-Person
	Workshop	Nov	Prof David Norton	27	5	In-Person
	Meeting	Feb	ID gaps and possible support OCC can Offer	5	3	In-person
	One on one	Mar	Planning for stream health day	6	2	On-line
	Field day	Apr	Tiaki Maniatoto Stream Health Day with schools	90	10	In-Person
	One on one	Apr	Met new comms person for Tiaki	1	1	On line
	Field day	Sep	Community Planting Day with schools	40	6	In-person
	Meeting	Apr	Met fencing manager, Proj Manager, and chair with Gold Pine rep to discuss options to support fencing project through business	5	3	In person
	One-on-one consultation	Sep	Small Project Fund Planning for Aqua Van	1	2	In-person
	Forum	June	Tiaki Maniatoto women's event	50	2	In-person
	One-on-one consultation	July	Planning for Aquavan to Maniototo	4	1.5	Online
WAI Wānaka	Meeting	Sep	Meeting new Facilitator	1	2	In-person
	Workshop	June	Comm of Practice led by WAI	20	3	In-person
	One-on-one consultation	July	Support to WAI for funding application on behalf of Hāwea CG	1	1	Other
	Meeting	Feb	Meeting to discuss community and integrated catchment	5	2	In-person

			Plan, WAI's plan with ES and Southland Groups			
Waihola Waipouri	One-on-one consultation	Mar	Contact to pest removal group with potential to evolve to a CG	1	1	Phone
Wānaka CG	Meeting	Oct	OCC Survey and group meeting	5	2	In-Person
	Meeting	May	AGM, Meeting wider group of members and facilitate succession discussion for group	17	3	In-person
	ONe on one	May	Meeting project lead to discuss AGM planning and facilitation of session	1	1.5	On line
	meeting	Apr				
Womens in catchments	Forum	Aug	Women in Catchments session	6	1.5	Online
	Forum	Sep	Women in catchments session with expert Janet Gregory	5	2	Online

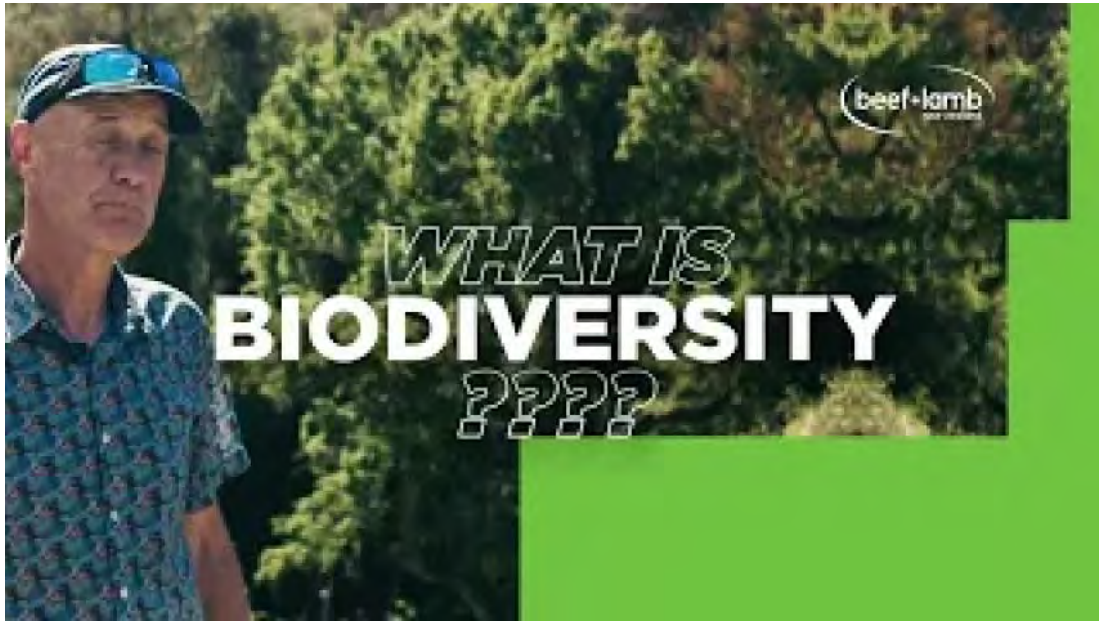
Appendix 2. David Norton Roadshow – Introduction to Biodiversity

link

Following a successful 6 stops around Otago with Prof David Norton a series of videos have been created for landholders as part of the Biodiversity Road Show last year which OCC, Beef & Lamb and NZ Landcare Trust.

Professor David Norton talks about the following topics:
- Where to start from when you have no existing biodiversity on your farm
- The importance of Biodiversity.
- What is Biodiversity and why it is important

He also explains how to plan for Biodiversity in a farm planning context including understanding regulations and why it's important to work with others in your catchment.



CHECK THEM OUT BELOW!

Planning for Biodiversity on your farm

What if I have no biodiversity?

Why Native Biodiversity is important to farmers

Why farmers should think about Native Biodiversity

On Farm Biodiversity Planning

How to manage native Biodiversity weeds

A special thanks to our host farmers, host catchment groups, and Prof. Norton.
Beef + Lamb New Zealand NZ Landcare Trust

Appendix 3. Sam The Trap Man tours Otago

Jun
*HA*MIORA GIBSON, 'SAM THE TRAP MAN'

Sneaking in at the end of June were 7 events across Otago featuring Hamiora Gibson. Hamiora is a skilled bushman and an educator who is bringing communities together through his popular online presence and work in the East Coast Catchments. Hamiora works at NZ Landcare Trust, where he is designing and implementing biodiversity strategies.

Alongside his biodiversity skills Gibson helped lead the recovery work following Cyclone Gabrielle, where farmers and growers were supported to get their operations up and running before government funding was made available for such work.

Afternoon sessions focused on community biodiversity trapping programmes, with simple 'where to place the trap' hints and more strategic ideas where shared.

Evening sessions on Gibson's tour focused on community preparedness for adverse events and how groups can use their skills to implement changes that benefit them.

A resource on step by step 'response and recovery' learnings can be found on OCC website. This is based on learnings from Hamiora's cyclone response work with Catchment Groups.

Appendix 4. NOSLaM Review

28 Mar
OCC facilitators were asked recently to support this well-known and established group to review their strategy. Below are a few pics from the work undertaken with NOSLaM - North Otago Sustainable Land Management at their workshop session in Oamaru.

These guys make our job easy - they are motivated, understand the process and what they are looking to achieve from one of these workshops.

The outcome is a revised strategy, a number of points removed that are either no longer fit for purpose and/or have been achieved, plus some new points added - these are both brand new as well as a refinement of what was originally in the high level strategy.

Thank you NOSLaM, it is a pleasure to support you.

Appendix 5. Teviot Valley Water Care

3 Oct

Teviot Valley Water Care Group recently received funding from OCC to support their group to share an event with the community and gain some interest through signage and hosting a planting day.
The group supported the great mahi of the Millers Flat school and added to the planting already done by students at their local creek. 75 plants were donated by Fish & Game and planted before everyone took some time to enjoy a barbecue together. Teviot Valley group are keen to continue to build their group and ideas to promote sustainable environmental stewardship.

Newspaper link

Southern Rural Life article

Appendix 6. Pomahaka Catchment Group Review

4 Jan

Sam holding space at the Pomahaka strategy review, Dec 2022

Pomahaka Watercare group are synonymous with action in the water care space, and have been for quite some time. Recently the group asked OCC for some facilitation support to conduct a review of their strategy. This happens as a 2 part session which helps structure thinking and strategy in a space where work done is acknowledged, strengths and weaknesses are brought to the table and challenges and opportunities discussed in an open and honest space.

What a great group of people to get involved with for this session! Thoughtful, caring and above all else wanting to do the best for their home, water ways and environment. OCC coordinators are looking forward to bringing all of your thinking together in the second part early 2023!

facebook post

Appendix 7. Catchment Group Leaders Forum

22 Jul 2022

The Second combined Catchment Leaders forum was held by OCC with NZ Landcare Trust in Alexandra July 2023

40 industry people and catchment leaders came together from across the region in the second of these forums since OCC was officially formed in 2021. With a grand guest speaker travelling from Pourakino David Diprose inspired other group leaders with the story of his groups journey and his own personal learning journey.

The first part of the day was spent with general introductions – from industry people, who they represented and what their industry body was currently doing in the catchment space. This was followed by the Catchment Groups themselves who gave a summary of what their group is currently doing.

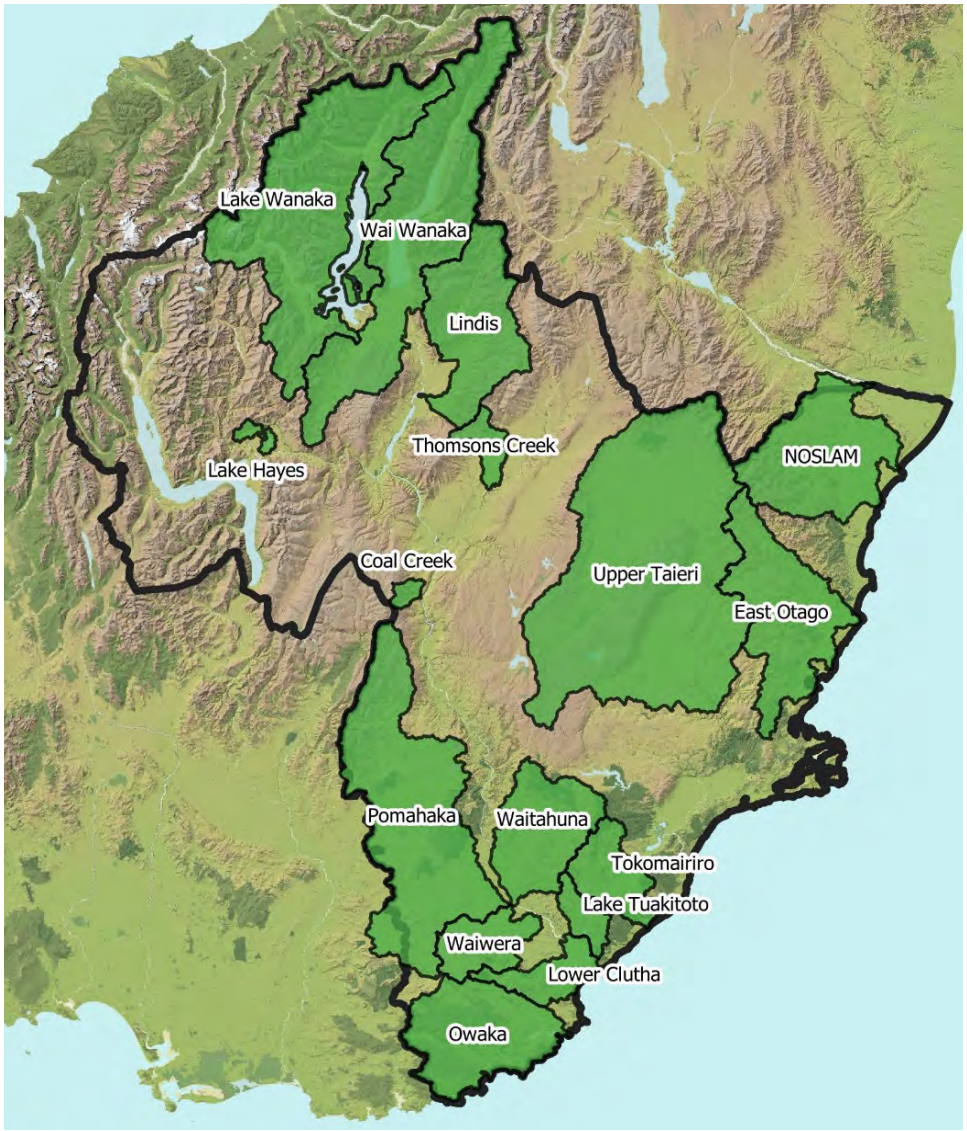
There were some familiar faces in the crowd – Catchment Groups which have been active for a few years – NOSLaM and Pomahaka as examples. It was encouraging to see the newer groups, some who are in the very beginning phases of establishing their groups, come together amongst the established groups and hearing from, learning and chatting with one another.

The feedback received from all groups – new and established, was how valuable this kind of forum is to enable one another to hear first-hand, the stories and the actions taken, including challenges and issues which groups encounter and overcome, within their particular focuses and projects.

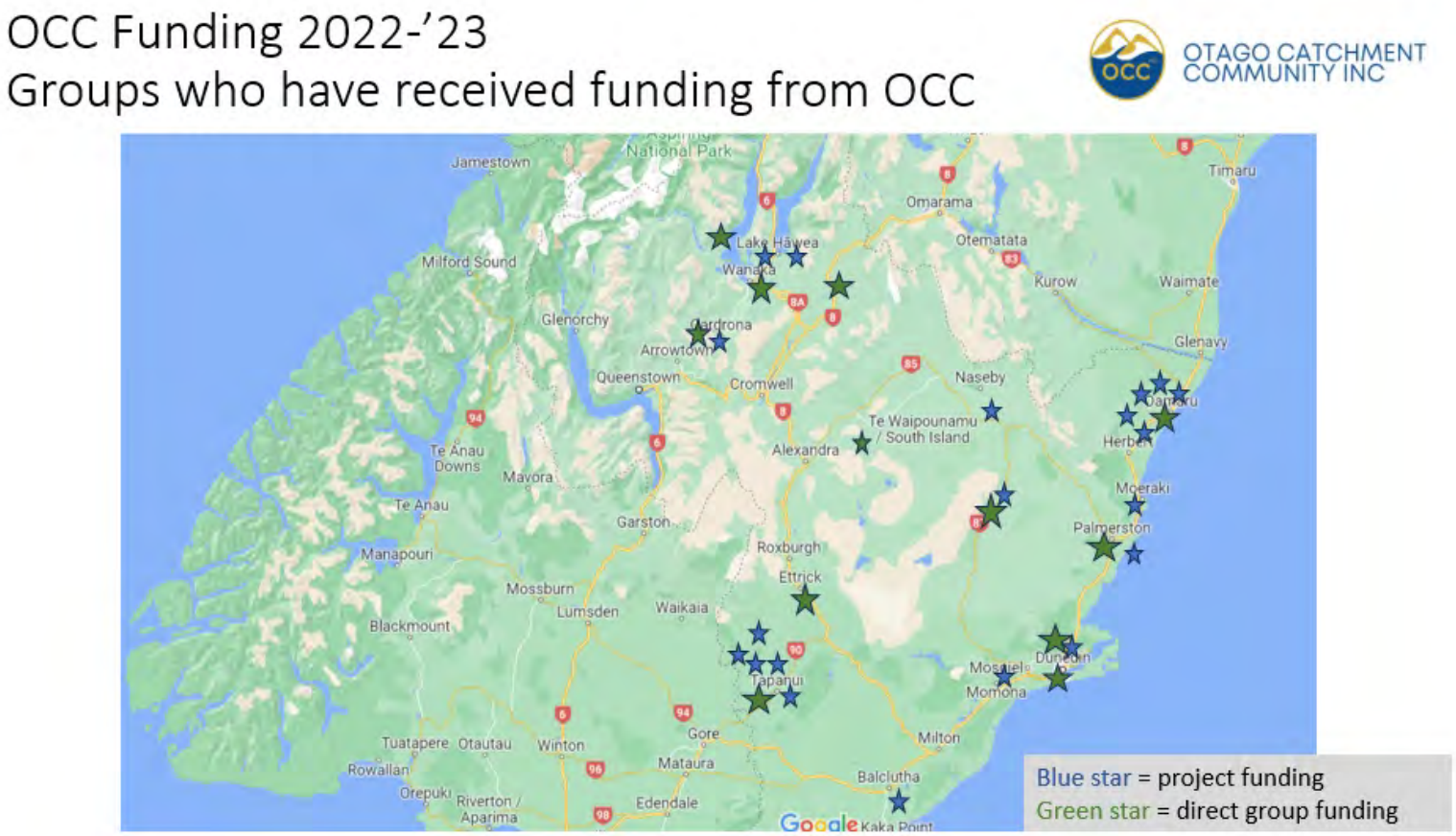
Follow Up

OCC and NZ Landcare Trust are hosting the annual forum on the 25th of July in Naseby. Instead of a guest speaker this year, groups and industry can continue conversations over a game of curling in the afternoon.

Appendix 8. Otago CG Map



Appendix 9. Map showing distribution of OCC Funding



Performance Report

Otago Catchment Community Incorporated
For the year ended 30 June 2023

Prepared by PKF Dunedin Ltd

Contents

3 Compilation Report

4 Entity Information

6 Approval of Financial Report

7 Statement of Service Performance

8 ORC Milestones (Last Year)

9 ORC Milestones (Last Year)

10 MPI Milestones (Last Year)

11 Statement of Financial Performance

12 Statement of Financial Position

13 Statement of Cash Flows

14 Statement of Accounting Policies

15 Notes to the Performance Report

17 Independent Auditor's Report

Compilation Report

Otago Catchment Community Incorporated
For the year ended 30 June 2023

Compilation Report to the Members of the Committee of Otago Catchment Community Incorporated.

Scope

On the basis of information provided and in accordance with Service Engagement Standard 2 Compilation of Financial Information, we have compiled the financial statements of Otago Catchment Community Incorporated for the year ended 30 June 2023.

These statements have been prepared in accordance with the accounting policies described in the Notes to these financial statements.

Responsibilities

The Trustees are solely responsible for the information contained in this financial report and have determined that the accounting policies used are appropriate to meet your needs and for the purpose that the financial statements were prepared.

The financial statements were prepared exclusively for your benefit. We do not accept responsibility to any other person for the contents of the financial statements.

No Audit or Review Engagement Undertaken by us

Our procedures use accounting expertise to undertake the compilation of the financial statements from information you provided. Our procedures do not include verification or validation procedures. No audit or review engagement has been performed by us and accordingly no assurance is expressed.

Independence

We have no involvement with Otago Catchment Community Incorporated other than for the preparation of financial statements and management reports and offering advice based on the financial information provided.

Disclaimer

We have compiled these financial statements based on information provided which has not been subject to an audit or review engagement. Accordingly, we do not accept any responsibility for the reliability, accuracy or completeness of the compiled financial information contained in the financial statements. Nor do we accept any liability of any kind whatsoever, including liability by reason of negligence, to any person for losses incurred as a result of placing reliance on this financial report.

PKF Dunedin Limited

Dunedin

Dated: 12 July 2023

Entity Information

Otago Catchment Community Incorporated
For the year ended 30 June 2023

'Who are we?', 'Why do we exist?'

Legal Name of Entity

Otago Catchment Community Incorporated

Entity Type and Legal Basis

Incorporated Society

Registration Number

50054808

Entity's Purpose or Mission

To create and support an Otago wide network of Catchment Groups that are addressing environmental issues now and for generations to come.

Entity Structure

Governance Committee consisting of Representatives from the four Otago regions and Co-opted committee members to fill knowledge or skill gaps. Work programme delivered by the contracted Regional Coordinator and Coordinator.

Main Sources of Entity's Cash and Resources

Funding from Otago Regional Council.

Main Methods Used by Entity to Raise Funds

Funding Applications.

Entity's Reliance on Volunteers and Donated Goods or Services

Nine Governance Committee members are all volunteers.

Additional Information

In kind time supplied by local industry, council and NGO reps to develop Otago Catchment Commmunity.

Physical Address

3945 Wānaka-Mount Aspiring Road,
Wānaka 9382

Postal Address

3945 Wānaka-Mount Aspiring Road,
Wānaka 9382

Accountants

PKF Dunedin Ltd
Chartered Accountants
Level 7, ASB House
248 Cumberland Street
Dunedin 9054

Bankers

ASB Bank Limited

IRD Number

133-653-058

Officer Details

Hanna Stalker (Chair)

Katie Barns (Treasurer)

Approval of Financial Report

Otago Catchment Community Incorporated
For the year ended 30 June 2023

The Committee are pleased to present the approved financial report including the historical financial statements of Otago Catchment Community Incorporated for year ended 30 June 2023.

APPROVED

_____

Hannah Stalker

Chair

Date .....

_____

Katie Barns

Treasurer

Date .....

Statement of Service Performance

Otago Catchment Community Incorporated
For the year ended 30 June 2023

'What did we do?', 'When did we do it?'

Description of Entity's Outcomes

Facilitate improved environmental, social and wellbeing outcomes in rural areas in the Otago region.
Outcomes and Milestones - refer following pages

ORC Milestones (Last Year)

Otago Catchment Community Incorporated
For the year ended 30 June 2023

#	Deliverable	Output	How it will be achieved	Due Date
1	Agreed work programmes delivered.	Final Work Plan submitted for Approval by OCC	For input and approval, provide ORC with a work plan and detailed budget outlining how the ORC grant will be allocated, KPIs, outcomes sought and the rationale for the allocation.	30 June Proceeding each Funding year.
2	Accountability and Governance achieved	One Annual Report per funding year. ORC Staff and governance representative invited to attend all committee meetings and participate in decision-making processes (Governance rep only).	Provide annual report to council The report is to highlight: • The work undertaken as prescribed in the work plan • The project Data as outlined in [4] below • Any funding and operational issues • Any future opportunities or directions • Assessment of contribution to improving water quality and/or improvement in environmental domains. Formal membership of ORC on Otago Catchment Community Committee.	Report – 31 July of each funding year ORC Representation - Ongoing
3	Community connections made Building Catchment Capabilities	Quarterly meetings with Team Leader Environmental Implementation to discuss connections/ issues/ opportunities and to identify and pursue aligned tasks and actions. A record of gaps and opportunities as outlined by OCC during the meeting is documented at the Quarterly meetings with the Team Leader Environmental Implementation.	Assist ORC by providing local knowledge and expertise to create community connections Actively identify to ORC capability and knowledge gaps within the Catchment Group sector, so that these can be considered and supported as part of the Environmental Implementation Team's regional support.	Quarterly Quarterly
4	Project Data reported	List referrals made from OCC to Catchment Groups and ORC regarding water, biodiversity, biosecurity and land management work as outlined by the Team Leader	Number of memberships in the Otago Catchment Community - Number of OCC members by FMU - Number of new OCC Members since previous annual report	30 September following each Funding Year.

ORC Milestones (Last Year)

Otago Catchment Community Incorporated
For the year ended 30 June 2023

		Environmental Implementation.	Pursue opportunities with communities to support ORC's water, biodiversity, biosecurity and land management work. Number of catchment groups actively supported (Financially or with resourcing) - Number of groups by FMU/Rohe - Number of Groups since previous annual report - Number of group meetings or events held. Locations of group operations -List of Catchments and corresponding FMU/Rohe Evidence of OCC staff and contractors delivering on OCC objectives and values as outlined in the work programme. - Stories, photos and other evidence showing activities carried out. Evidence should be linked to a specific group/catchment. Outline of activities and projects undertaken whose main aim is to improve water quality in Otago. -Brief overview of project, objectives, outputs (e.g. area of planting, length of fencing etc) and outcomes. Summary of joint initiatives with ORC. -Initiatives or projects identified and implemented.	
5	Maintain and enhance collaborative partnership with Otago Regional Council	Initiatives and opportunities promoted, and these are reported through the annual report. Where appropriate, ORC staff attend capability initiatives and/or professional development led by OCC.	Promote expertise and assistance available from ORC to support Catchment Groups. Where appropriate, invite staff to capability initiatives or professional development opportunities offered to catchment groups.	Annually As occurs

MPI Milestones (Last Year)

Otago Catchment Community Incorporated
For the year ended 30 June 2023

#	Deliverable	Output	How it will be achieved	Due Date
4	End of year 1 Report with 12 Month Work plan and budget for 2022-2023	End of Year 1 Report for the 2021-2022 year with 12 Month Work plan and Budget for 2022-2023 submitted.	Contract Signed	31 July 2022
5	Progress Report 2 detailing delivery against the agreed work plan since 1 July 2022	Progress report 2 submitted	Working with ORC and MPI staff provide a 12-month work plan outlining how the funding will be spend and the rational for the allocation explained in detail in the 12-month Work Plan	31 October 2022
6	Progress Report 3 detailing delivery against the agreed work plan since 1 October 2022	Progress report 3 submitted	Utilizing the template received from MPI the progress report will be submitted.	28 Feb 2023

Statement of Financial Performance

Otago Catchment Community Incorporated
For the year ended 30 June 2023

'How was it funded?' and 'What did it cost?'

	NOTES	2023	2022
Revenue			
Grant Revenue	1	515,000	370,000
Total Revenue		**515,000**	**370,000**
Expenses			
Volunteer and employee related costs	2	15,517	-
Costs related to providing goods or services	2	392,643	214,463
Other expenses	2	5,619	3,676
Total Expenses		**413,779**	**218,139**
Surplus for the Year		**101,221**	**151,861**

Statement of Financial Position

Otago Catchment Community Incorporated
As at 30 June 2023

'What the entity owns?' and 'What the entity owes?'

	NOTES	30 JUN 2023	30 JUN 2022
Assets			
Current Assets			
Bank accounts and cash	3	430,663	238,729
Debtors and prepayments	3	-	67,749
GST refund due		469	1,337
Total Current Assets		**431,132**	**307,815**
Total Assets		**431,132**	**307,815**
Liabilities			
Current Liabilities			
Creditors and accrued expenses	4	45,407	23,310
Total Current Liabilities		**45,407**	**23,310**
Total Liabilities		**45,407**	**23,310**
Total Assets less Total Liabilities (Net Assets)		**385,725**	**284,504**
Accumulated Funds			
Accumulated surpluses or (deficits)	5	385,725	284,504
Total Accumulated Funds		**385,725**	**284,504**

Statement of Cash Flows

Otago Catchment Community Incorporated
For the year ended 30 June 2023

'How the entity has received and used cash?'

	2023	2022
Cash Flow Statement		
Cash Flows from Operating Activities		
Cash receipts from grants	579,688	394,312
Net GST received/(paid)	868	1,217
Payments to suppliers and employees	(388,621)	(209,631)
Total Cash Flows from Operating Activities	**191,934**	**185,898**
Net Increase/ (Decrease) in Cash	191,934	185,898
Cash Balances		
Cash and cash equivalents at beginning of period	(238,729)	(52,831)
Cash and cash equivalents at the end of period	430,663	238,729
Net change in cash for period	**191,934**	**185,898**

Statement of Accounting Policies

Otago Catchment Community Incorporated
For the year ended 30 June 2023

'How did we do our accounting?'

Basis of Preparation

The society has elected to apply PBE SFR-A (NFP) Public Benefit Entity Simple Format Reporting - Accrual (Not-For-Profit) on the basis that it does not have public accountability and has total annual expenses equal to or less than $2,000,000. All transactions in the Performance Report are reported using the accrual basis of accounting. The Performance Report is prepared under the assumption that the entity will continue to operate in the foreseeable future.

Revenue

All grant revenue is recorded in the period that it is earned.

Goods and Services Tax (GST)

The society is registered for GST. All amounts are stated exclusive of goods and services tax (GST) except for accounts payable and accounts receivable which are stated inclusive of GST.

Income Tax

Otago Catchment Community Incorporated is wholly exempt from New Zealand income tax having fully complied with all statutory conditions for these exemptions.

Bank Accounts and Cash

Bank accounts and cash in the Statement of Cash Flows comprise cash balances and bank balances (including short term deposits) with original maturities of 90 days or less.

Changes in Accounting Policies

There have been no changes in accounting policies. Policies have been applied on a consistent basis with those of the previous reporting period.

Notes to the Performance Report

Otago Catchment Community Incorporated
For the year ended 30 June 2023

	2023	2022
1. Analysis of Revenue		
Grant revenue		
Otago Regional Council	315,000	225,000
Ministry for Primary Industries	200,000	145,000
Total Grant revenue	**515,000**	**370,000**

	2023	2022
2. Analysis of Expenses		
Volunteer and employee related costs		
Wages & Salaries	15,300	-
Travel Local	217	-
Total Volunteer and employee related costs	**15,517**	**-**
Costs related to providing goods or services		
Advertising	2,027	1,773
Bank Charges	80	55
Catchment Group Events	20,985	-
Catchment Group Funding - No GST	38,098	-
Catchment Group Funding - with GST	79,217	25,456
Computer Expenses	158	804
Conference Expenses	9,413	-
Contractor - GST	196,088	133,162
Contractor - No GST	14,120	37,081
General Expenses	4,328	2,614
Governance Training	1,500	-
Insurance	1,550	1,160
Mileage - Committee Members	1,743	503
Mileage Reimbursement GST	20,105	6,666
Mileage Reimbursement No GST	619	2,949
Office Expense	4	162
Printing & Stationery	426	38
Staff Training	126	522
Subscriptions	2,057	1,518
Total Costs related to providing goods or services	**392,643**	**214,463**
Other expenses		
Accountancy Fees	3,119	2,889
Audit Fees	2,500	-
Legal Expenses	-	787
Total Other expenses	**5,619**	**3,676**

	2023	2022
3. Analysis of Assets		
Bank accounts and cash		
ASB Current Account	430,663	238,729
Total Bank accounts and cash	**430,663**	**238,729**
Debtors and prepayments		
Grant Receivable - Otago Regional Council	-	64,688
Prepayments	-	3,061
Total Debtors and prepayments	**-**	**67,749**

	2023	2022
4. Analysis of Liabilities		
Creditors and accrued expenses		
Accounts Payable	45,407	23,310
Total Creditors and accrued expenses	**45,407**	**23,310**

	2023	2022
5. Accumulated Funds		
Accumulated Funds		
Opening Balance	284,504	132,643
Surplus for the year	101,221	151,861
Total Accumulated Funds	**385,725**	**284,504**
Total Accumulated Funds	**385,725**	**284,504**

6. Commitments

There are no commitments as at 30 June 2023. (Last Year - NIL)

7. Contingent Liabilities and Guarantees

There are no contingent liabilities or guarantees as at 30 June 2023. (Last year - NIL)

8. Related Parties

There were no transactions involving related parties during the financial year. (Last year - NIL)

9. Events After the Balance Date

There were no events that have occurred after the balance date that would have a material impact on the Performance Report.

10. Prior Period Adjustment

2021 revenue has been re-stated to include $111,000+GST of grants from Otago Regional Council. In the process of auditing the 2022 financial statements, revenue was reconciled and the correct total for 2021 was confirmed at $200,000. This was corrected by accruing $89,000+GST that was received in the 2022 year. The remaining $22,000 was paid by ORC to expenses directly, this was corrected by journal crediting revenue for $22,000, offset by debits to catchment group funding of $15,000 and legal expenses of $7,000.

Independent Auditor's Report

Otago Catchment Community Incorporated
For the year ended 30 June 2023

PROJECT MANAGER'S ANNUAL REPORT

July 1st 2022 – June 30th 2023

Prepared 29th of September 2023 by Pete Oswald (project manager)

Distribution:

CWG		OTHER
John Cooney (Chair)	Kathy Kelliher	
Phil Murray (Deputy Chair)	Gavin Udy (ORC)	
Richard Bowman	Tamah Alley	
John Breen	Inge Diks	
Sir Grahame Sydney	Kathryn Longstaff (DOC)	
Nikki Holmes (DOC)		

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY 2
2. 2022 – 2023 CONTROL PROGRAMME 3
3. HEALTH & SAFETY 6
4. QUALITATIVE SUMMARY 7
5. BUDGET & SPEND 8
5. CHALLENGES 10
6. FOCUS FOR 2023 - 2024 11

Executive Summary

I started as project manager nearly halfway into the financial year and completed the planned year of control work.

The entire MPI budget was spent on high priority projects, and a further $133,500 of national program funding was sourced. With this I was able to bring forward a further 6 high priority projects leaving us in a much better position for this year.

There were other qualitative achievements such as; removing several high priority seed sources, a successful marketing campaign to increase awareness, many local and national press articles and successful challenge of a carbon farming plantation in a vulnerable area. We tested more efficient ABBA searching techniques, tested and assessed all of our available ground contractors and enacted some creative methods of controlling conifers through enabling landowners to save on control budget.

There were only 2 minor heath and safety incidents reported. A new centralised audit recording system by Gavin Udy now makes it much easier to ensure contractors are up to date with safety audits before commencing work.

Going forward there are several challenges I have identified that, if addressed, would significantly help with our purpose of controlling wilding conifers in Central Otago.

For the 2023-2024 year the overarching concern is the dramatic reduction in funding from the National Program of nearly ¾'s. It is a leading priority to source more funding if we are to maintain the gains we have made.

The research demonstrates it is much cheaper and a far better investment if we front the funds early to achieve our purpose of controlling wilding conifers to a point where landowners can reasonably do it themselves.

If we delay, the job gets exponentially more expensive. If we fail to control wilding conifers we lose much of what makes Central Otago unique. Other impacts are a massive loss of water yield, loss of biodiversity and endemic species, loss of industry, loss of productive land and a huge increase in fire danger.

2022 – 2023 Control Programme

I officially started on the 1st of November 2022 to replace Phil Murray as Project Manager. There was a long cross over period between project managers to ensure I was sufficiently up to speed before taking on the job on my own. This cross over period was made longer by the birth of my second daughter and the Christmas period. By end of March I was fully up to speed and there was only myself being paid as the project manager.

We had an initial MPI budget for conifer control work of $520k and an estimated landowner contribution of $110k. Because of me starting part way through the year, the work program was delayed and ended up being back loaded at the end of the year.

Once I was finally up to speed I realised a capacity to complete a lot of projects quickly. This was partly due to Phil Murray's continued support even after he had stopped being paid as project manager. Once I realised this capacity I could foresee that I would finish the planned program of work easily within the financial year.

It became apparent that MPI funding was dramatically reducing for the 2023-2024 year. I made it clear to our National Programme fund manager, Gavin Udy, that I had capacity to spend more funds on high priority control if it was available to us. We were allocated another $133,500 of MPI funds.

With these funds we were able complete another 6 high priority projects which was the majority of the 2023-2024 planned work. This has put us in a much better position for maintaining gains this year in 2023-2024. The final spend on conifer control was $653,337 MPI funds, $93,433 Landowner contribution funds and $59,404 Landowner in-kind contributions.

The Majority of the control work was maintenance of previous work, however 3 main seed sources have been eliminated which were Brewery Creek, Harry's Hill/Ao Marama and Half Mile.

Projects Completed 22/23 year

Management Unit	Project	CWG Funds	Landowner Funds	MPI Funds	Total (Funds)	Landowner (in-kind)	Method	Area Cleared
Dunstan MU	Brewery Creek			$39,936	$39,936		Felling, Cut Stump, ABBA, Arborist	10.0
	Picnic Creek		$6,074	$24,297	$30,371		ABBA	425.0
	Crown Land Lake Dunstan			$4,265	$4,265		Cut Stump, Drill & Fill, Felling	39.0
	LINZ legal road Bannockburn		$690	$2,759	$3,449		Felling	2.6
	Cromwell Gorge		$2,917	$11,669	$14,587		ABBA	3730.0
	Southern Pisa Survey			$1,275	$1,275		Survey	
	Southern Pisa DF Grant Hensman		$1,232	$4,928	$6,160		Cut Stump	120.0
	Heredium Area Missed	$833	$2,000	$11,330	$14,163		Cut Stump	54.0
	Dunstan Totals	**$833**	**$12,913**	**$100,459**	**$114,205**			**4380.6**

Management Unit	Project	CWG Funds	Landowner Funds	MPI Funds	Total (Funds)	Landowner (in-kind)	Method	Area Cleared
Remarkables MU	Nevis - Craigroy		$228	$1,482	$1,710		Felling, Cut Stump, GBBA	3.3
	Balance back to Whakatipu			$3,518	$3,518			
	Remarkables Totals		**$228**	**$5,000**	**$5,228**			**3.3**

Management Unit	Project	CWG Funds	Landowner Funds	MPI Funds	Total (Funds)	Landowner (in-kind)	Method	Area Cleared
Lammermoor MU	Matangi Lammermoor (stage 1)			$73,153	$73,153	$18,713	Cut Stump	377.0
	Matangi Lammermoor (stage 2)			$16,721	$16,721	$4,800	Cut Stump	106.3
	Lammermoor Totals			**$89,874**	**$89,874**	**$23,513**		**483.3**

Management Unit	Project	CWG Funds	Landowner Funds	MPI Funds	Total (Funds)	Landowner (in-kind)	Method	Area Cleared
Naseby MU	McMillan	$416	$8,750	$69,575	$78,741	$8,484	Cut Stump, AFSA	307.7
	Mt Kyeburn/Ida Range DOC			$40,899	$40,899		ABBA	3640.7
	Kakanui's ABBA (post MU change) (Naseby split)			$980	$980		ABBA	80.0
	Matthewson (post MU change)			$80,000	$80,000		Cut Stump	1194.0
	Heli Survey			$4,348	$4,348		Survey	
	Naseby Totals	**$416**	**$8,750**	**$195,801**	**$162,498**	**$8,484**		**5222.4**

Management Unit	Project	CWG Funds	Landowner Funds	MPI Funds	Total (Funds)	Landowner (in-kind)	Method	Area Cleared
Alexandra MU	Half Mile	$2,418	$22,679	$65,000	$90,097		Logging	15.2
	Earnscleugh - Harry Roberts block	$1,140		$40,327	$41,467	$18,798	Cut Stump	74.0
	Earnscleugh - Dunstan Hills		$1,929	$7,717	$9,646		Cut Stump	139.5
	Earnscleugh - Hiscocks			$34,022	$34,022	$8,505	Cut Stump	63.0
	Earnscleugh - Coffee Pot (option)			$11,192	$11,192		Cut Stump	84.9
	Crown Land Lake Dunstan Bannockburn			$8,910	$8,910		Cut Stump	3.2
	Alexandra Totals	**$3,558**	**$24,609**	**$167,168**	**$195,334**	**$27,303**		**379.8**

Management Unit	Project	CWG Funds	Landowner Funds	MPI Funds	Total (Funds)	Landowner (in-kind)	Method	Area Cleared
Rough Ridge MU	CODC Lower Manorburn		$4,348	$9,115	$13,463		Felling	18.3
	Little Valley		$3,981	$15,925	$19,906		Cut Stump	24.1
	Rough Ridge Totals		**$8,329**	**$25,040**	**$33,369**			**$42**

CENTRAL OTAGO WILDING CONIFER CONTROL GROUP

Management Unit	Project	CWG Funds	Landowner Funds	MPI Funds	Total (Funds)	Landowner (in-kind)	Method	Area Cleared
Waitaki MU (CPP)	Kakanuis	$500	$12,000	$22,356	$34,856		ABBA, AFSA	321.1
	Pigroot	$20,003	$20,000		$40,003	$104	Cut Stump	53.0
	Kakanuis ABBA (post MU change) (Waitaki split)			$27,645	$27,645		ABBA	2180.0
	Waitaki Totals	**$20,503**	**$32,000**	**$50,000**	**$102,503**	**$104**		**2554.1**

Management Unit	Project	CWG Funds	Landowner Funds	MPI Funds	Total (Funds)	Landowner (in-kind)	Method	Area Cleared
Dunedin MU (CPP)	Maungatua		$4,999	$19,995	$24,994		Cut Stump	83.4
	Dunedin Totals		**$4,999**	**$19,995**	**$24,994**			**83.4**

Grand Totals	**$25,310**	**$91,828**	**$653,337**	**$770,474**	**$59,404**		**$13,149**

Health & Safety

There were 2 health and safety events reported, 1 “near miss” evolving a suspect gun shot from an unknown source while working in the fog in Earnscleugh and 1 “minor incident” at Brewery Creek where an operator slipped on pine needles and bruised their arm on a rock. Neither incident significantly impacted control work.

There was one internal safety audit completed on CWTC by Phil Murray prior to me starting.

I attended one team learning session for CWTC contractors held by Will McBeth from Whakatipu Conifer Group.

There were several other safety audits completed on the contractors we use, by external parties and conducted outside our management units. One significant one was on Mike Hurring Logging just prior to starting work on Half Mile. There were several actions outlined from this audit that were implemented by the contractor within the given time frames.

These actions were followed up by me to ensure they were done.

Part way through the Half Mile project we received an Official Information Act request that we were able to promptly supply all safety information showing all was in order.

Gavin Udy is now consolidating all safety audit information nationwide so we can easily check if a safety audit is due on a particular contractor prior to commencing control work.

Qualitative Summary

On top of quantitative work of the various conifer control projects detailed above we have made progress in some qualitative ways, which are detailed below:

- Some significant seed sources have been removed e.g. Brewery Creek, Harry's Hill/Ao Marama, Half Mile.
- Control started on Southern Pisa's above Cromwell which has never had control work before. This revealed the beginnings of a major Douglas fir invasion which has been stitched in time while also engaging surrounding landowners.
- Contracted and tested all of our available ground control contractors.
- A focus on efficient and adaptive control methods to affect more efficient spend towards effective control. One key application of this is responsive ABBA grid searching.
- Successful challenge of a Carbon Plantation resource consent application on Rock and Pillar Range.
- Sourced extra late season funding enabling 6 extra projects brought forward from 2023-2024. This has eased significant pressure from this year and put us in a much better position to complete more urgent maintenance.
- Enacted a plan of enabling and supporting landowners/stakeholders to do their own control work to save on scarce control budget. This has the added benefit of getting the landowners/stakeholders to become engaged and motivated.
- Received a significant amount of local and national media exposure including several RNZ interviews and national news articles.
- Through the employment of My Marketing Agency and some initiatives I applied we have significantly grown our following and engagement on newsletter sign ups, Instagram and Facebook.

Budget

The budget and balance can be summarised in the table below. Further explanation below the table. All figures are exclusive of GST.

Control Work Funding

Funding Source	Funding Amount	Activity/Service	Cost	Balance
MPI	$653,500	Control Work	$653,337	$163
Land Owners	$91,828	Control Work	$91,828	$0
CWG	$25,310	Control Work	$25,310	$0
Total	$770,638		$770,475	$163

Other Funding

Funding Source	Funding Amount	Activity/Service	Cost	Balance
ORC	$100,000	Project Management	$141,575	-$41,575
CODC	$20,000	Communications	$35,361	-$15,361
LINZ	$20,000	Admin & Other Expenses	$8,386	$11,614
Total	$140,000		$185,322	-$45,322

As displayed we had an over spend of $45,322. This was due to the overlap of project managers necessary to get me up to speed and over spend on communications with My Marketing Agency.

Activities and services are detailed below, some examples of this can be seen above in Qualitative Summary.

- **Control work:**
  - Costs of contractors to complete control work.
- **Project Management:**
  - Management to create and complete the maximum programme of work efficiently, effectively & safely within time frame and budget.
  - Communication of the issue to the public, the media and influential parties.
  - Negotiation, communication and relationship building with landowners.
  - Assessing and documenting infestations and seed sources.
  - Lobbying to prevent, reduce and remove future, and current seed sources and infestations using other parties' funds or means outside of this program.
  - Lobbying for regulation change and primary funding increase.
  - Reporting on progress to the various parties.
- **Communications:**
  - Cost of the communication work by My Marketing Agency.

- **Admin:**
  - Office management, mainly accounting by Office Management Solutions.

- **Other expenses:**
  - Costs of running the group such as software, printing, office supplies and travel expenses by board members.

Challenges

There were a few challenges in 2022-2023 which are listed below. Where possible, actions to help mitigate these challenges in the future have been detailed.

- Me getting up to speed with the role resulting in some errors of management and back loaded work, although we got through this ok. I am now starting to understand the job and what is required to control conifers in Central Otago. No action required but ongoing support and feedback is helpful.
- Lack of regulation of activities involving conifers and lack of means to enforce conifer control.
  - ACTION: review of the RPMP and get enforcement plan in place. Start with action of the cases I have detailed to ORC.
- Narrow scope of what we can spend National programme funding on. E.g not being able to use it to supply landowners with tools and herbicide to stretch the funding to greater effect.
  - ACTION: we are currently in talks with Sherman Smith of the National Program who is considering our proposals on this. We just need to keep this going and demonstrate what is possible with the experiments we have done with CWG funds.
- The turbulent state of governance surrounding the CWG. This has been time consuming and distracting from our purpose and objectives. It has also resulted in many of our contractors (including me) receiving consistently and significantly late payment on invoices.
  - ACTION: solidify a healthy governance relationship between all parties that is stable, efficient and trusting.

Focus for 2023-2024

Central Government funding for 2023-2024 has decreased from the previous year by nearly ¾'s from $520,000 in 2022/2023 to $174,000 this year. This is not nearly enough to complete the maintenance required this year, meaning previous controlled areas will be re-infested and we will regress.

Given this situation the focus is on protecting the previous work and investment by any means necessary while we attempt to increase funding. This may take the form of some creative methods.

Significant effort will be placed on communicating the issue to the public and the media to apply pressure for national programme funding increase while also trying to source alternative funding.

Focus will also be on lobbying for stricter regulation to have responsibility placed on those activities responsible for conifer spread.

A common question received form the public is "what do you do after you have removed the wilding conifers". We are also acknowledging the amenity provided to some people from conifers. So, we are trying to work closer with reforestation groups such as Haehaeata and Mohiki trusts.

Some areas of focus are detailed below.

- Focused available budget on time sensitive infestations, vulnerable areas and protecting previous investment, e.g maintenance due that may cone within 1-2 years.
- Push to get larger landowner contributions to be able to stretch our funding further. This has started well with the two Hawkdun Runs Road landowners contributing 50% funds and 50% in-kind control work respectively.
- Lobbying to remove or control high priority infestations and seed sources with other parties' funding, e.g high spreading forestry and shelterbelt seed sources.
- Encourage the relevant central and local government bodies to create and enact regulation with objectives such as:
    - preventing the inappropriate planting of invasive conifer species,
    - enforcing landowners to control wilding conifers on their land,
    - enforcing the owners of conifer seed sources to take responsibility for their wilding spread.
- Enabling landowners to do control work themselves (which also fosters engagement in the issue) by providing:
    - Best control methods
    - Effective strategy
    - Tools
    - And in some cases, fund the herbicide
- Implementing more effective and efficient systems for project management and data recording to affect better project management and future management handover. I have

already successfully applied for the Microsoft Not for Profit grant and migrated our system to a free Microsoft Business One Drive account.

- Measure and increase public awareness of invasive conifers and what we stand to lose in our district if we lose control of conifers.
- Find more funding for the CWG group.

Pete Oswald

Project Manager

Phone: 021 732 367
Email: centralotagowilding@outlook.com

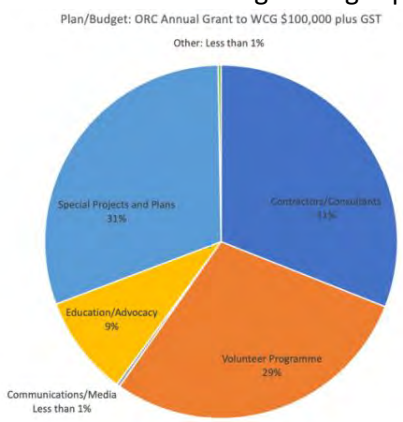
ORC Report for financial year ending 30 June 2023

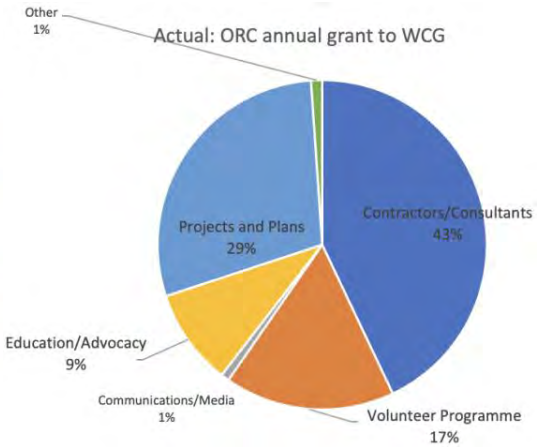
Activities undertaken as described in the annual plan

- **Contractors/Consultants** including a portion of costs for the WCG Operational Contractor and the WCG Funding Manager.
- **Volunteer Programme:** WCG Volunteer co-ordinator, tools, maintenance and running various volunteer programmes.
- **Communications/Media:** Funds allocated to annual communications and media ongoing costs and special promotional projects.
- **Education/Advocacy:** Funds allocated to educational opportunities to enhance this aspect of the WCG vision.
- **Special Projects and Plans:** In some cases, it is necessary to have special planning and permissions in place before operational work can progress.
- **Other** eg. Operating expenses including travel, insurance, legal fees, subscriptions.

Financial Expenditure using a 'budget versus actual' method for each activity as shown in attached PIE Charts.

- There was a decrease in the Volunteer Programme projected spend. WCG was without a volunteer Co-ordinator for a number of months during Autumn, however a new volunteer co-ordinator has now been secured with increased hours to also incorporate and expand the educational role.
- To make the most of opportunities and to prepare for future operations special projects and plans are required, the cost of these can be difficult to budget for but are essential to progress future wilding control work.
- WCG funds the majority of the contracted Operational Project Management cost and also a contract Funding Manager position.





Funding and Operational issues

- WCG has been fortunate to have the volume of control work boosted by the National Wilding Conifer Control Programme/Jobs for Nature funding over the last few years and it is now essential to maintain these gains and to continue to turn the tide . If we lose this opportunity to maintain momentum, previous funding will be wasted and greater financial burdens will be placed on our future community. Research has shown that every year we wait, wilding control increases by 30%.

- As National Wilding Conifer Control Programme funds now decline from previous highs, it becomes even more important for WCG to sustain and increase local partnerships and funding channels.

- As the Contractor tender process came up for its three yearly review in 2022/23, this meant the programme had a slow start to the year until agreements were in place and signed. The pressure was on for the remainder of the year to get the work fully underway and the annual budgets spent. Full credit goes to the entire team and the support systems in place that ensured the work was completed in a timely manner to the usual high standard.

- As tourism returned after the pandemic disruptions, the airspace became busier and airspace permissions for aerial wilding work more difficult to obtain. This appears to have been resolved with good communication between aerial contractors and the control tower.

- The WCG and DOC partnership for Operational work is working well with good communication and a high level of collaboration between the parties.

- The WCG appreciates the support for the programme from Gavin Udy, ORC Project Delivery Specialist – National Programmes. Gavin keeps WCG well informed with good communication and is a valued member of our wilding team.

Evidence of activities carried out by volunteers and/or contractors

Operational reports for the activities including photos are covered extensively in monthly operational reports already sent to ORC.

However, some of the Operational highlights for FY22/23 follow where WCG arranged removal permission at a number of strategic sites:

- Overall, 87 projects were completed and closed in total, with 28,306 hectares controlled

WHAKATIPU WCG
WILDING CONTROL GROUP

- Removal of 340 mature wilding pine species from Queenstown Golf Course, Kelvin Heights

Early morning loading of Logging trucks.

In total approximately 27 loads of timber left the site, about 750 ton.

Clean up on site has been supported by the Queenstown Golf club grounds staff and an army of golf member volunteers. A plentiful volume of chips has also be produced which will help the club with its replanting plans

- Removal of 141 wilding pine species from Arrowtown Golf Course

- Extensive wilding support on Mahu Whenua, QE II Convenant and around Arrowtown Choppers community project area and the periphery of QLDC Douglas fir forest removal project.
- The last of the large old coning conifers removed in the Shotover Management Unit. A success story where this management unit starts to move to a maintenance phase after many years of intensive control work.

(Permission must be granted from WCG to use these two photos wider than this report)

Highlights from the Volunteer Programme included:

- Over 48 Ben Lomond Adopt a Plots are managed by WCG, with the community protecting nearly 50 hectares of fragile Beech Forest, tussock lands and alpine herbfields. It is unique to have this special area so accessible to our town and the work that approximately 300 local Queenstowner volunteers put in, shows how much they value the protection of this site.

48 x WCG Ben Lomond Adopt a Plot Sites

- 2 x Chainsaw qualifications courses organised for WCG and opened up further to other relevant community groups
- Educate for nature corporate planting/wilding pine removal day in conjunction with WRT, Trees that Count, Te Tapu o Tāne and Mahu Whenua in November 2022 with 50 participants – an estimated 5,000 wilding pest trees controlled
- Volunteer Events:
    - Moke Lake Road – September2022 – An estimated 1,000 pest trees controlled
    - Mt Dewar – October 2022 – An estimated 500 wildings controlled
- WCG participated in various events including conservation week community planting day September 2022 and DOC Visitor Centre Volunteer event.
- WCG also maintain a supply of tools at the Stanley St DOC Centre for the community to use for wilding work.

Moke Lake site

Future opportunities and directions

- WCG commissioned Ahika Consulting Ltd to compile two reports in order to get large future projects underway. The first is the Seven Mile Options and Issues Report, this is a sensitive community site on Public Conservation Land. The second is the Queenstown Hill Forestry Plan in partnership with Queenstown Lakes District Council (QLDC), this is a long term project where firstly, permissions need to be in place to remove the wilding species from this prominent QLDC site and for this, reports are required for decision making.

- The added educational role of the WCG Volunteer Co-ordinator is intended to increase awareness of the wilding pine issues, especially around our younger community who will be the next generation of wilding champions and volunteers. Queenstown also has a constant flow of new residents settling in who often don't yet have an understanding of the wilding issues, so a need to constantly increase awareness and knowledge has been identified.

- WCG had the opportunity to upgrade their website making it more informative and educational, with a view to appealing to a wide range of our community including landowners, supporters, volunteers and stakeholders. www.whakatipuwilding.co.nz

- WCG have produced Social Media videos and posts throughout the year to explain various aspects of our work and to communicate with and involve the community, with nearly 800 followers in this channel, about the work programme.

- WCG also hold a "Reporting to the Community" evening annually, which is to be held as part of the Wilding Pine Network Conference in Queenstown in October this year.

- WCG have produced five newsletters in 22/23 and as our database grows from its current 800+ members, this is a valuable communication tool to a growing audience.

- WCG have a committed volunteer Executive Member Group whose dedication to this important work ensures that a future focus is maintained.

- WCG are about to publish their new 10 year strategy which outlines the national and regional picture listing Stratgy Elements and Key Priorities. This will be available digitally and as a hardcopy which will be available to our partners.

- WCG gained the opportunity and funding to produce a two part video which explains the '**how'** and '**why'** of what we do. We encourage you to view the short video here

WCG thanks Otago Regional Council for the support throughout the year, our relationship with ORC is an essential element of the collaborative teamwork that helps to keep our efforts effective and efficient.

Otago Regional Council

Environmental Implementation Committee
MINUTES

Minutes of an ordinary meeting of the Environmental Implementation Committee held in the Council Chamber, Level 2 Philip Laing House, 144 Rattray Street, Dunedin on Wednesday 9 August 2023, commencing at 9:00 AM.

PRESENT

Cr Bryan Scott	*(Co-Chairperson)*
Cr Kate Wilson	*(Co-Chairperson)*
Cr Alexa Forbes	
Cr Gary Kelliher (online)	
Cr Michael Laws (online)	
Cr Kevin Malcolm	
Cr Lloyd McCall	
Cr Tim Mepham	
Cr Andrew Noone	
Cr Gretchen Robertson	
Cr Alan Somerville	
Cr Elliot Weir	

1. WELCOME

Chairperson Cr Kate Wilson welcomed Councillors and staff to the meeting at 9:00am and gave a karakia. Staff present included Richard Saunders, (Chief Executive), Nick Donnelly, online, (GM Corporate Services), Gavin Palmer (GM Operations), Amanda Vercoe (GM Governance, Culture and Customer), Tom Dyer (Manager, Science) Jo Gilroy (Acting GM, Regulatory) Libby Caldwell (Manager, Environmental Implementation) Anna Malloy (Principal Advisor, Environmental Implementation) Sophie Fern (Catchment Action Planner) Andrea Howard (Manager, Executive Advice) Murray Boardman, online, (Performance and Delivery Specialist),and Kylie Darragh (Governance Support).

2. APOLOGIES

There were no apologies for this Committee meeting.

3. PUBLIC FORUM

No requests to speak were received.

4. CONFIRMATION OF AGENDA

The agenda was confirmed as published.

5. DECLARATIONS OF INTERESTS

No changes to Councillor Declarations of Interests were noted.

6. CONFIRMATION OF MINUTES

Resolution: Cr Wilson Moved, Cr Scott Seconded

That the minutes of the Environmental Implementation Committee on 5 May 2023 be received and confirmed as a true and accurate record.

MOTION CARRIED

7. OPEN ACTIONS FROM RESOLUTIONS OF THE COMMITTEE

The completed action from resolutions of the Committee was reviewed.

8. MATTERS FOR CONSIDERATION

8.1. Prioritisation of Projects

The purpose of this paper was to seek approval in principle for a process for prioritising waterbodies for water quality and biodiversity improvement. Anna Molloy, Libby Caldwell, and Gavin Palmer presented the report and responded to questions.
There was a wide range of discussions on this paper and Richard Saunders confirmed to Councillors that this was the first of three stages. Iwi and Mana whenua are still to be engaged and any substantial changes through consultation would need to come back to this Committee.

A procedural motion was called and Cr McCall Moved, Cr Malcolm Seconded:
That the Environmental Implementation Committee:

1) ***lay** the paper on the table*

For	Cr Kelliher, Cr Malcolm, Cr McCall
Against	Cr Forbes, Cr Laws, Cr Mepham, Cr Noone, Cr Robertson, Cr Scott, Cr Somerville, Cr Weir, Cr Wilson
Abstained	

MOTION FAILED

Cr Forbes left the meeting at 9:12 am.
Cr Forbes returned to the meeting at 9:14 am.

Resolution: Cr Weir Moved, Cr Forbes Seconded:
That the Environmental Implementation Committee:

1) ***Recommends that Council adopts** the suggested prioritisation criteria in principle.*

For	Cr Forbes, Cr Mepham, Cr Noone, Cr Robertson, Cr Scott, Cr Somerville
Against	Cr Kelliher, Cr Malcolm, Cr McCall, Cr Wilson
Abstained	Cr Laws, Cr Weir

MOTION FAILED

Resolution EIC23-108: Cr Weir Moved, Cr Forbes Seconded
That the Environmental Implementation Committee:

2) ***Notes that*** *the suggested criteria, will be discussed with mana whenua (via Aukaha and Te Ao Marama) and applied to produce a draft list of ranked waterbodies for further development of actions.*

MOTION CARRIED

8.2. Integrated Catchment Management Programme
This paper sought to approve the programme for rollout of Integrated Catchment Management across Otago, through the development of catchment action plans (CAPs). Anna Molloy, Sophie Fern, Libby Caldwell, and Gavin Palmer were present to answer questions.

Resolution EIC23-109: Cr McCall Moved, Cr Mepham Seconded:
That the Environmental Implementation Committee:
1) ***Recommends*** *that Council approves the proposed Catchment programme, with Option 2.*

MOTION CARRIED

8.3. Biosecurity Operational Plan Annual Report 2022-23
This paper reported on the implementation of the Biosecurity Operational Plan 2022-23 for the period 1 July 2022 to 30 June 2023, as required under Section 100C(2) of the Biosecurity Act 1993. Libby Caldwell, Murray Boardman, and Gavin Palmer were available to answer questions. Libby Caldwell wished to acknowledge the huge amount of work that has gone into this report from staff and contractors with very specialised knowledge. After discussion and an amendment to the motion it was moved that:

Resolution EIC23-110: Cr Robertson Moved, Cr Wilson Seconded:
That the Committee:

1) Notes *this report and the range of work undertaken to give effect to Otago's Regional Pest Management Plan and the Biosecurity Act (1993).*
2) ***Notes*** *the lessons learnt from the 2022-23 Biosecurity Operational Plan (BOP) are being applied to the delivery of the 2023-24 BOP.*
3) ***Notes*** *that this report and the attached Biosecurity Operational Plan 2022-23 Report will be provided to the Minister for Biosecurity s as required under Section 100C(2) of the Biosecurity Act 1993 with congratulations on work on mycoplasma bovis.*

MOTION CARRIED

9. CLOSURE
Chair Cr Wilson said a karakia to close the meeting at 11:12am.

9.1. Regional Wilding Conifer Cost Benefit Analysis and business case

Prepared for:	Environmental Implementation Committee
Report No.	OPS2226
Activity:	Governance Report
Author:	Libby Caldwell, Manager Environmental Implementation
Endorsed by:	Gavin Palmer, General Manager Operations
Date:	8th November 2023

PURPOSE

[1] To present the 'Benefits and Costs of Additional Investment in Wilding Conifer Control in the Otago Region' (cost benefit analysis) prepared by Boffa Miskell on behalf of Otago Regional Council.

EXECUTIVE SUMMARY

[2] Wilding conifers pose a serious pest issue in New Zealand which, if left uncontrolled, will spread and out-compete native plants, reduce native animal habitat, reduce water yield, limit productive land use, increase wildfire risk and permanently alter landscapes. The negative impacts of wilding conifer infestation and spread if left uncontrolled have been well documented by the Ministry for Primary Industries (MPI) and the National Wilding Conifer Control Programme (NWCCP).

[3] Otago's iconic landscapes are vulnerable to the invasion of wilding conifers. In 2016, a Ministry for Primary Industries (MPI)-funded report estimated that 8.4% - or 295,830 ha – of Otago was affected by wilding conifer infestation. Also in 2016, around 70% of Otago was mapped as being 'very highly vulnerable' to wilding conifer infestation. Particularly at risk are Otago's high country and tussock grasslands.

[4] Wilding conifers are a priority pest in the Otago Biosecurity Operational Plan for 2023/24. This means they are of concern to the community and have heightened adverse effects on environmental, economic, and/or social grounds.

[5] Without continued investment and intervention, achieving long term sustainable wilding conifer outcomes for the region is not attainable. Wilding conifers will re-invade cleared areas and continue to spread across vulnerable parts of Otago.

[6] Maintaining the current gains on their own will not achieve long term sustainable management of wilding conifers. Ongoing progressive control and containment is also required to prevent the spread from seed sources that are still present in the region. The benefits of control and protection are clear and greatly outweigh the costs (benefit ratio nationally is 34:1).

[7] ORC commissioned Boffa Miskell to develop a cost benefit analysis for Wilding Conifer work in Otago. This analysis is an action in the Otago Regional Wilding Conifer Strategy 2023-2029 and associated implementation plan that were endorsed by Council in May 2023 (attachment one).

[8] The cost benefit analysis details that in Otago, the benefits to cost ratio of wilding conifer control shows a return for every dollar spent. Four options for investment have been provided. These are:

a. Status quo – lose the investment – this has a benefit to cost ratio of 42:1.
b. Minimum – protect the investment – this has a benefit to cost ratio of 96:1.
c. Intermediate – extend the investment – this has a benefit to cost ratio of 93:1.
d. Maximum - National control - this has a benefit to cost ratio of 86:1.

[9] Three options are proposed for advocacy for national funding. The recommended option is that Council advocates for national funding to invest in the Intermediate 'extend the investment' (control 99.9% of the known infestation) option which would prioritise funding as detailed in the Minimum 'protect the investment' (control 89.4% of the known infestation) which continues to support existing control activity across 14 management units. This is the recommended option as it presents the best value for each dollar spent in the wilding conifer programme by undertaking control in 14 Management Units (MUs), but would also include funding for the 5 other MUs (intermediate option), which supports work that the Upper Clutha Wilding Control Group are undertaking.

RECOMMENDATION

That the Environmental Implementation Committee

1) ***Notes*** *this report.*
2) ***Notes*** *the significant value that investment in Wilding Conifer control in Otago would provide.*
3) *Recommends that Council* ***Endorse*** *Option 2 - ORC advocating for national funding to support the Intermediate "extend the investment" option described in this report.*

BACKGROUND

[10] Wilding conifers pose a serious pest issue in New Zealand which, if left uncontrolled, will spread and out-compete native plants, reduce native animal habitat, reduce water yield, limit productive land use, increase wildfire risk and permanently alter landscapes. The negative impacts of wilding conifer infestation and spread if left uncontrolled have been well documented1,2 by the Ministry for Primary Industries (MPI) and the National Wilding Conifer Control Programme (NWCCP).

[11] Otago's iconic landscapes are vulnerable to the invasion of wilding conifers. In 2016, a Ministry for Primary Industries (MPI)-funded report estimated that 8.4% - or 295,830 ha – of Otago was affected by wilding conifer infestation. In 2016, around 70% of Otago was mapped as being 'very highly vulnerable' to wilding conifer infestation. Particularly at risk are Otago's high country and tussock grasslands.

[12] In May 2023, the Otago Regional Wilding Conifer Strategy 2023 – 2029 (Otago Strategy) was endorsed by the Environmental Implementation Committee. This strategy was designed to occupy the space between the New Zealand Wilding Conifer Management Strategy 2015-2030 and those of the wilding conifer control groups operating in Otago.

[1] Ministry for Primary Industries. (2014). The right tree in the right place: New Zealand Wilding Conifer Management Strategy 2015–2030.
[2] Wyatt, S. (2018). Benefits and Costs of the Wilding Pine Management Programme Phase 2, Ministry for Primary Industries (Sapere Research Group)

It identifies issues and gaps related to wilding conifer control, how these can be addressed, and what the intended outcomes are for each activity (attachment one).

[13] The National Wilding Conifer Control Programme (NWCCP) had $37 million invested between 2016 and 2021. The Jobs for Nature programme added $100 million of investment to the NWCCP from 2020 until 30 June 2024. From 1 July 2024, baseline funding of $10 million per annum has been committed to the NWCCP by the Ministry of Primary Industries. This baseline level of funding is insufficient for the programme to achieve control of wilding conifers on a national scale. For Otago, control activity is proposed to be scaled back from 89 per cent of known infestation, to 50 per cent.

[14] In September 2022, MPI undertook a cost benefit analysis on behalf of the NWCCP. This showed that the benefits to cost ratio of wilding conifer control shows significant return for every dollar spent for the minimum option at 34:1.

[15] Within the Otago Strategy, situation 4 stated that there is no regional cost benefit analysis. The output for ORC was to develop a regional cost benefit analysis to support applications to MPI (and others) for funding.

[16] On 18 October 2023, MPI announced that the annual budget for the NWCCP for the 2023/2024 financial year was increasing by 7 million dollars through funding by the Department of Conservation. Allocations for Otago have not yet been confirmed.

DISCUSSION

[17] Since the endorsement of the Otago Strategy, Boffa Miskell have been engaged by ORC to deliver the cost benefit analysis for Wilding Conifer work in Otago (attachment 2).

[18] The cost benefit analysis provides compelling information to support Otago receiving a significant amount of the available national funding.

[19] Whilst the cost benefit analysis undertaken by MPI at a national level shows that the benefits to cost ratio of wilding conifer control shows significant return for every dollar spent for the minimum option at 34:1 for the Otago region there is a significantly greater return.

[20] In Otago, the benefits to cost ratio of wilding conifer control shows a return for every dollar spent for the minimum option at 96:1 (Table 2, attachment 2).

[21] The cost benefit analysis details that investment in the minimum, intermediate and maximum options would ensure the losses from scaling back activity are avoided and provide additional benefits.

[22] If increased investment is made there will be water yield (irrigation and hydro electricity), productive land use, reduced fire risk, biodiversity, iconic landscape and recreation and cultural values benefits.

[23] It is important to note that the cost benefit analysis does not monetise the cultural values benefits. Such benefits increase the return on investment.

[24] The cost benefit analysis presents four investment options. These include:

i. Status quo ‘lose the investment’.
ii. Minimum ‘protect the investment’.
iii. Intermediate ‘extend the investment’.
iv. Maximum ‘national control’.

[25] The cost benefit analysis is the greatest for the Minimum ‘protect the investment’ option.

[26] For the Status quo ‘lose the investment’ option, work within the following management units (MUs) would be continued: Dunstan, Kawarau Lammermoor and Remarkables.

[27] If the Minimum ‘protect the investment’ option was invested in, the following MUs would be added to the status quo. These include Alexandra, Dunedin, Glenorchy, Luggate, Naseby, Northern Eyre, Rough Ridge, Shotover, Waitaki and Wakatipu.

[28] If the Intermediate ‘extend the investment’ option was invested in then this would extend to: Clutha, East Otago, Ernslaw, Wanaka and West Otago.

[29] If the Maximum ‘national control’ option was invested in there would be no increase in MUs invested in for Otago. This would at a national level ensure that there is more work being undertaken and there would be $2.5 million more funding between 2024 and 2027 to support work within the MUs in Otago.

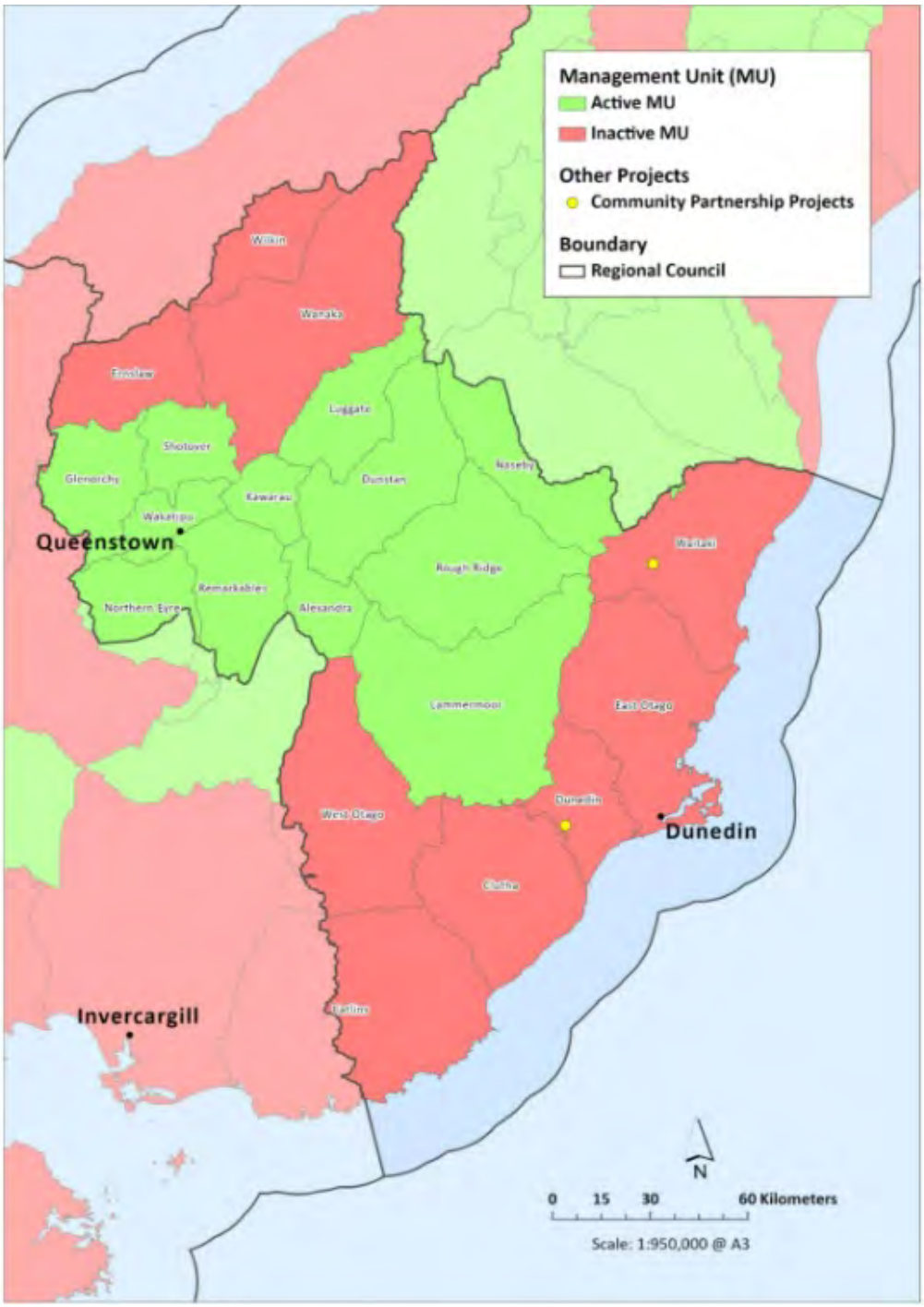


Figure 1: Otago Management Units

[30] The 14 Management Units controlled under the minimum option produce greater benefits per dollar spent than the next groups of MUs added, i.e., five additional MUs under the intermediate and maximum options.

OPTIONS

[31] Three options are proposed for advocacy for national funding, as follows.

[32] Option 1: Council advocates for national funding to invest in the Status Quo 'protect the investment' option which would control 50% of the known infestation. This option is not recommended as this would endorse the reduction in funding due to Jobs for Nature which ends June 2024. This level of funding is insufficient to achieve control of wilding conifers on a national scale. For Otago, this is scaled back from 89% of known infestation control to 50%. For this reason, this option is not recommended.

[33] Option 2: Council advocates for national funding to invest in the Intermediate 'extend the investment' (control 99.9% of the known infestation) option which would prioritise funding as detailed in the Minimum 'protect the investment' (control 89.4% of the known infestation) which continues to support existing control activity across 14 management units. This is the recommended option as it presents the best value for each dollar spent in the wilding conifer programme by undertaking control in 14 MUs but would also include funding for the 5 other MUs (intermediate option), which supports work that the Upper Clutha Wilding Control Group are undertaking.

[34] Option 3: Council advocates for national funding to invest in the Maximum 'national control' (control 99.9% of the known infestation) intermediate option plus $2.5 million further funding in some management units between 2024 and 2027. This option is not recommended as the benefit to cost ratio is lower than for Options 1 and 2.

CONSIDERATIONS

Strategic Framework and Policy Considerations

[35] The RPMP (Otago Regional Pest Management Plan 2019-2029) objective is to progressively contain and reduce the geographic extent of wilding conifers within the Otago region. It also aligns with the environment pillar of the strategic directions.

Financial Considerations

[36] Operational costs for wilding conifer control service delivery applies in Otago. As there is a reduced funding pool, and therefore a reduction in funding available for the Otago region as part of the NWCCP, the programme will not be delivered to the extent originally envisaged unless other funding sources are found to continue the full delivery of this programme.

[37] Landowners have contributed financially towards the completion of work on their properties, with an expectation that NWCCP funding will be available to complete the maintenance required and deliver lasting protection from the impact of wilding conifers on indigenous biodiversity, productive land use, landscape, and freshwater values. The reduction in NWCCP funding risks losing most of the gains made since the programme began and the financial contribution that landowners have made.

Significance and Engagement Considerations

[38] Not applicable

Legislative and Risk Considerations

[39] In some instances, the RPMP rules relating to wilding conifers may need to be applied earlier than expected to occupiers who have had previous funding through the NWCCP. If the RPMP rule is applied where maintenance works were anticipated by landowners there is a risk that this is an unforeseen expectation.

Climate Change Considerations

[40] Climate change is widely regarded as one of the greatest challenges facing ecological systems in the coming century. Climate change therefore poses risks to the impact of wilding conifers in Otago through factors such as the establishment of new species, changes in the status of current populations and shifts in introduction pathways.

Communications Considerations

[41] Nil

NEXT STEPS

[42] If endorsed, advocation for increased funding through the National Wilding Conifer Control Programme for Otago will occur immediately.

[43] Following the committee meeting, the cost benefit analysis will be shared with the wilding conifer control groups in Otago.

ATTACHMENTS

1. otago-wilding-conifer-strategy-v 10 [**9.1.1** - 7 pages]
2. Benefits and Costs of Additional Investment in Wilding Conifer Control - Otago 1.3 [**9.1.2** - 55 pages]

Otago Regional Wilding Conifer Strategy 2023 - 2029

Background

Otago's iconic landscapes are vulnerable to the invasion of wilding conifers. In 2016, a Ministry for Primary Industries (MPI)-funded report estimated that 8.4% - or 295,830 ha – of Otago was affected by wilding conifer infestation. In 2016, around 70% of Otago was mapped[1] as being 'very highly vulnerable' to wilding conifer infestation. Particularly at risk are Otago's high country and tussock grasslands.

Adverse effects resulting from wilding conifer infestation include:

- Reducing water yield, particularly in low rainfall catchments.
- Out-competing and subsequently replacing native vegetation.
- Increasing the risk of wildfire.
- Reducing the economic productivity of land; and
- Impacting on social and cultural values, e.g., landscape, recreational.

A cost benefit analysis commissioned by MPI in 2018[2] quantified that doing nothing, or doing little, will generate a large negative economic impact for the country: a loss of $4.6 billion. Without national intervention wilding pines will then spread to 7.5 million ha of vulnerable land. This could take as little as 15 to 30 years. It can be as little as $5–$10 per hectare to treat sparse infestations, however, control costs escalate over time and treating dense infestations will typically cost $2,000 per hectare to aerial boom spray (2018 figures). Consequently, it will never be cheaper to address the problem than it is now.

The growing problem has been recognised for some years, and as a result, the Whakatipu Wilding Conifer Control Group, Central Otago Wilding Control Group, and the Upper Clutha Wilding Conifer Control Group established themselves to control wilding conifers. A National Wilding Conifer Control Programme has also been developed and funded by government agencies, landowners, and local communities to address infestations.

Control efforts to date have been very successful but will require an ongoing effort for many years to come in follow-up work, and in areas where control is yet to be undertaken.

Objective of the Strategy

The Otago Regional Pest Management Plan 2019-2029 (RPMP) contains an objective and rules relating to the management of wilding conifers and stipulates that measures drawn from the suite of activities listed under requirement to act, collaboration, council inspection, service delivery, advocacy and education may be used by ORC to achieve the plan's objective.

[1] Wildlands Contract Report No. 3754a prepared for MPI. Methods for the Prioritisation of Wilding Conifer sites across New Zealand. February 2016.
[2] Wyatt, S., 2018, Benefits and Costs of the Wilding Pine Management Programme Phase 2, Sapere.

In 2022, the ORC began to develop a Regional Wilding Conifer Strategy to work towards achieving the objective in the RPMP (see below).

> *Objective 6.3.4 Over the duration of the Plan (2019-2029), progressively contain and reduce the geographic extent of wilding conifers within the Otago Region to minimise adverse effects on economic well-being and the environment.*

This strategy has been designed to occupy the space between the New Zealand Wilding Conifer Management Strategy 2015-2030 and those of the operating groups. It identifies issues and gaps related to wilding conifer control, how these can be addressed, and what the intended outcomes are for each activity.

The logic underpinning the Strategy is that if all the outcomes in the regional strategy were achieved within the timeframe (i.e., by 2029) then this would be notable progress in the effective management of wilding conifers and would help with ensuring that the vision and objectives of the New Zealand Wilding Conifer Management Strategy 2015-2030 and those of the operating groups are also realised.

Matters not included in the Regional Strategy

This is a wilding conifer strategy, not a planted conifer strategy. It is not intended to address the deliberate afforestation of land with permanent or production conifer forests, rather is it intended to address wilding conifers that may result from these forests or other seed sources.

There are also several other matters that have not been included in the regional strategy:

- ***National Environmental Standards for Plantation Forestry 2017 (NES-PF):*** The NES provides controls to manage the spread of wilding conifers from plantation forests that were established since the NES-PF was introduced (regulation 11) and provides controls for when harvested forest land is replanted with a different species (regulation 79). There are no controls, however, on wilding conifers emanating from plantation forests that were established before 2017, and there is no requirement to assess the wilding risk when replanting with the same species. Furthermore, the controls in the NES-PF can only require the forest owner to manage wildings on their own land (as it cannot confer a right to access another's property) and focusses this control work on wetlands and significant natural areas (SNAs).

  In short, the wilding risk controls in the NES-PF do not apply to forests established pre-2017 unless they are harvested and replanted with a different species; do not require the forest owner to address wilding conifers on their land if it is not in a wetland or SNA; and do not require the forest owner to address wilding conifers that establish on someone else's land.

  The NES-PF is currently under review by MPI. The regional strategy does not, therefore, recommend that ORC seeks to fill these gaps at this stage. Instead, it recommends that an assessment is undertaken to determine whether, if these controls (along with RPMP rules, Territorial Authority rules

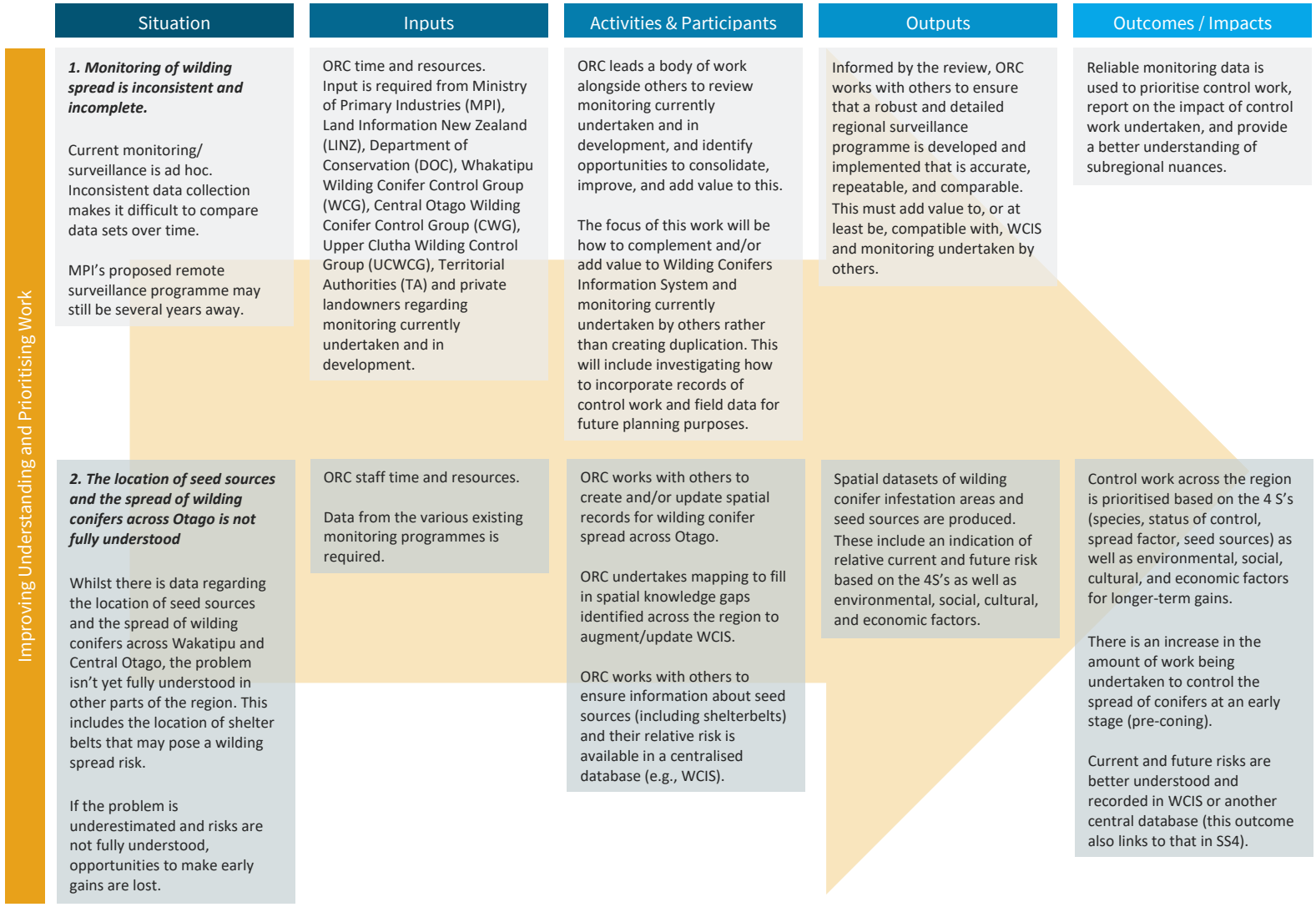
and resource conditions) were implemented effectively, there would still be a need for any further controls.

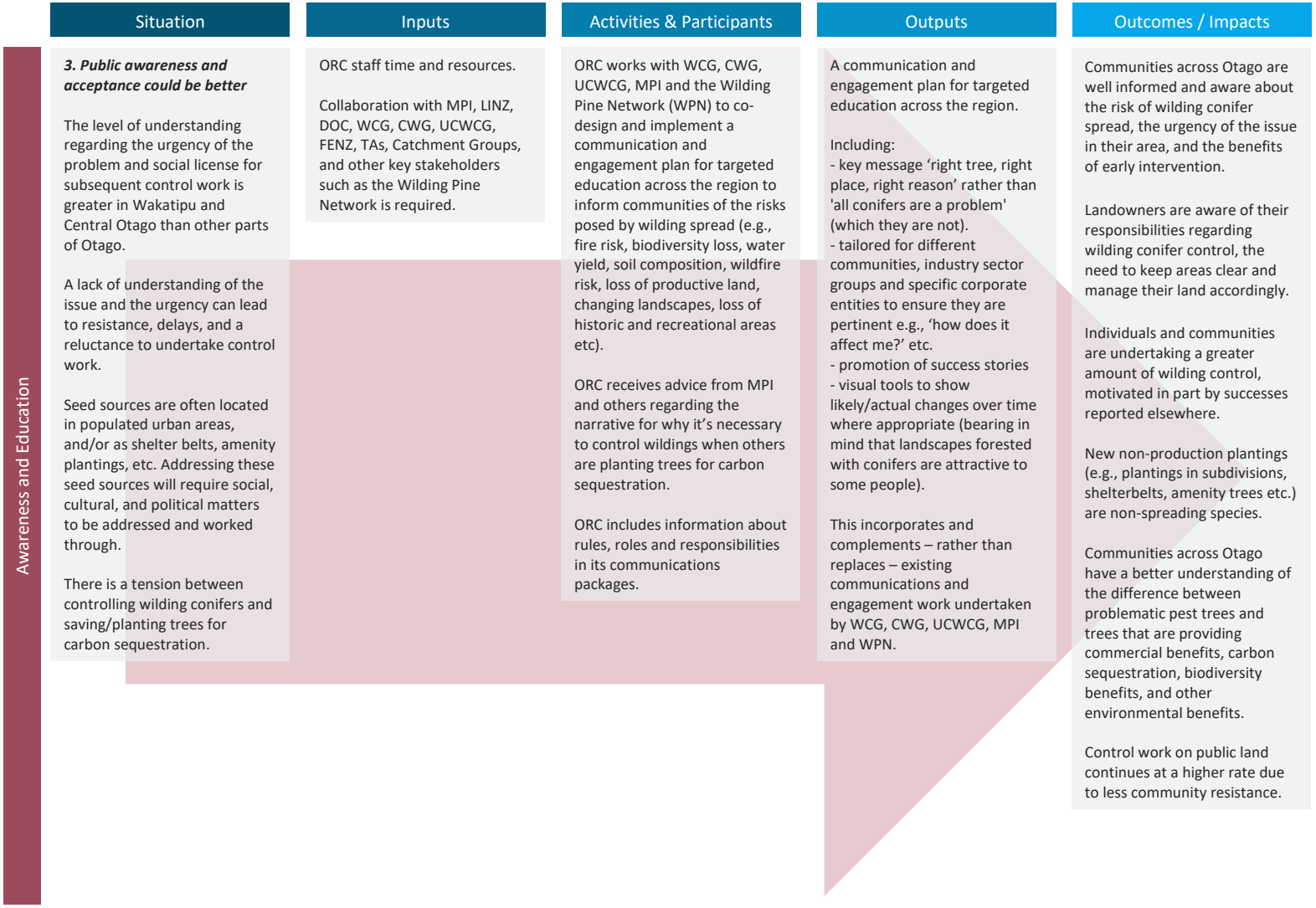
- ***Permanent carbon forests:*** The NES-PF does not currently apply to permanent carbon forests but the current review of the NES-PF includes consideration of how new permanent carbon forests will be managed in the future. Other than recommending better alignment between the RPMP, District Plans and NES-PF rules for ease of implementation, the regional strategy does not address this matter any further.

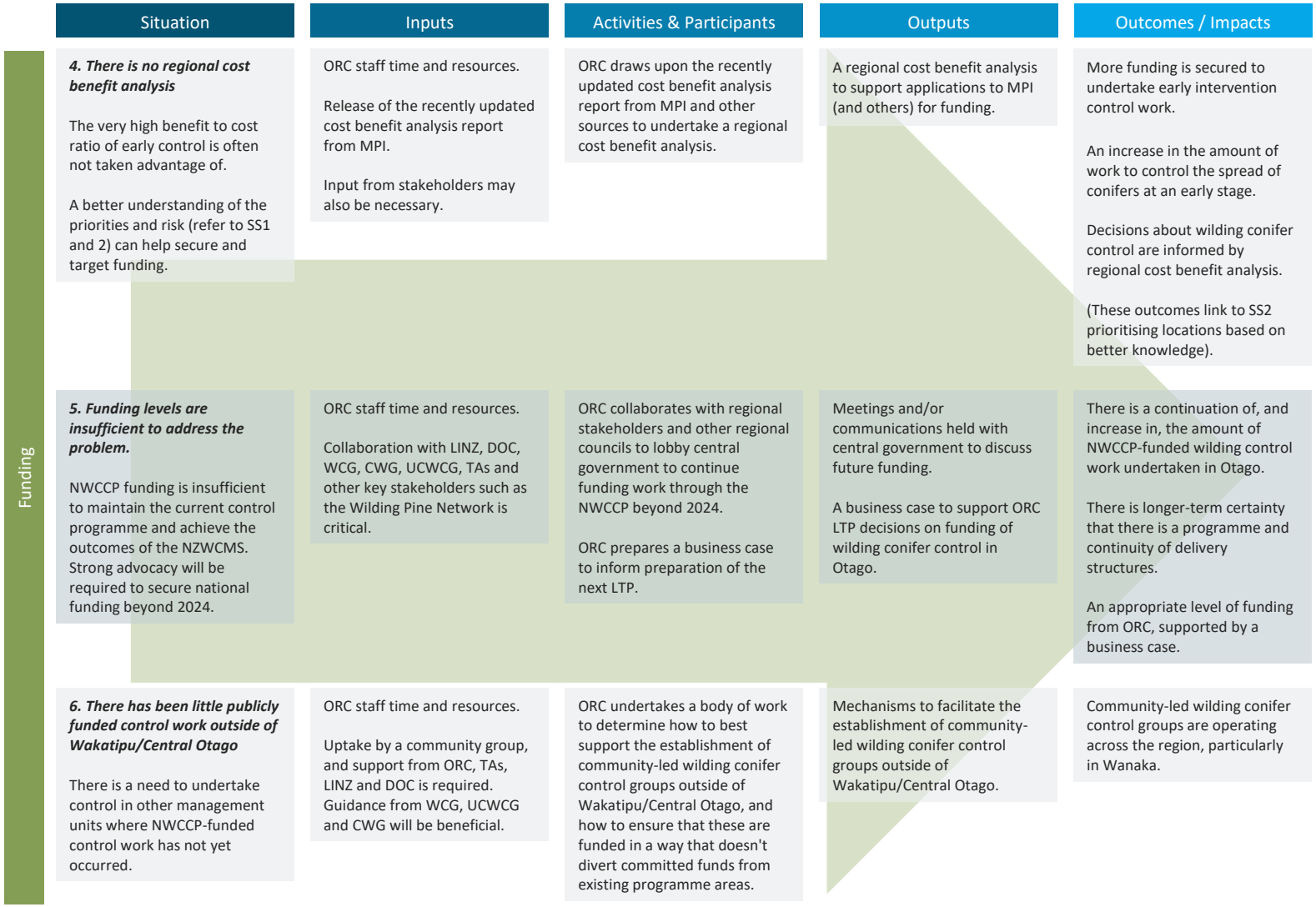
- ***How control work is undertaken:*** Given that this is a high-level strategy, there is little detail about how the actual control work is undertaken or how the canopy cover is transitioned. These matters are inherent within the regional strategy and this level of detail is not required at this stage. The regional strategy is instead focussed on the necessary foundations to ensure that effective control work can continue and expand, such as ensuring there is adequate resourcing, greater participation, greater urgency, and less resistance.

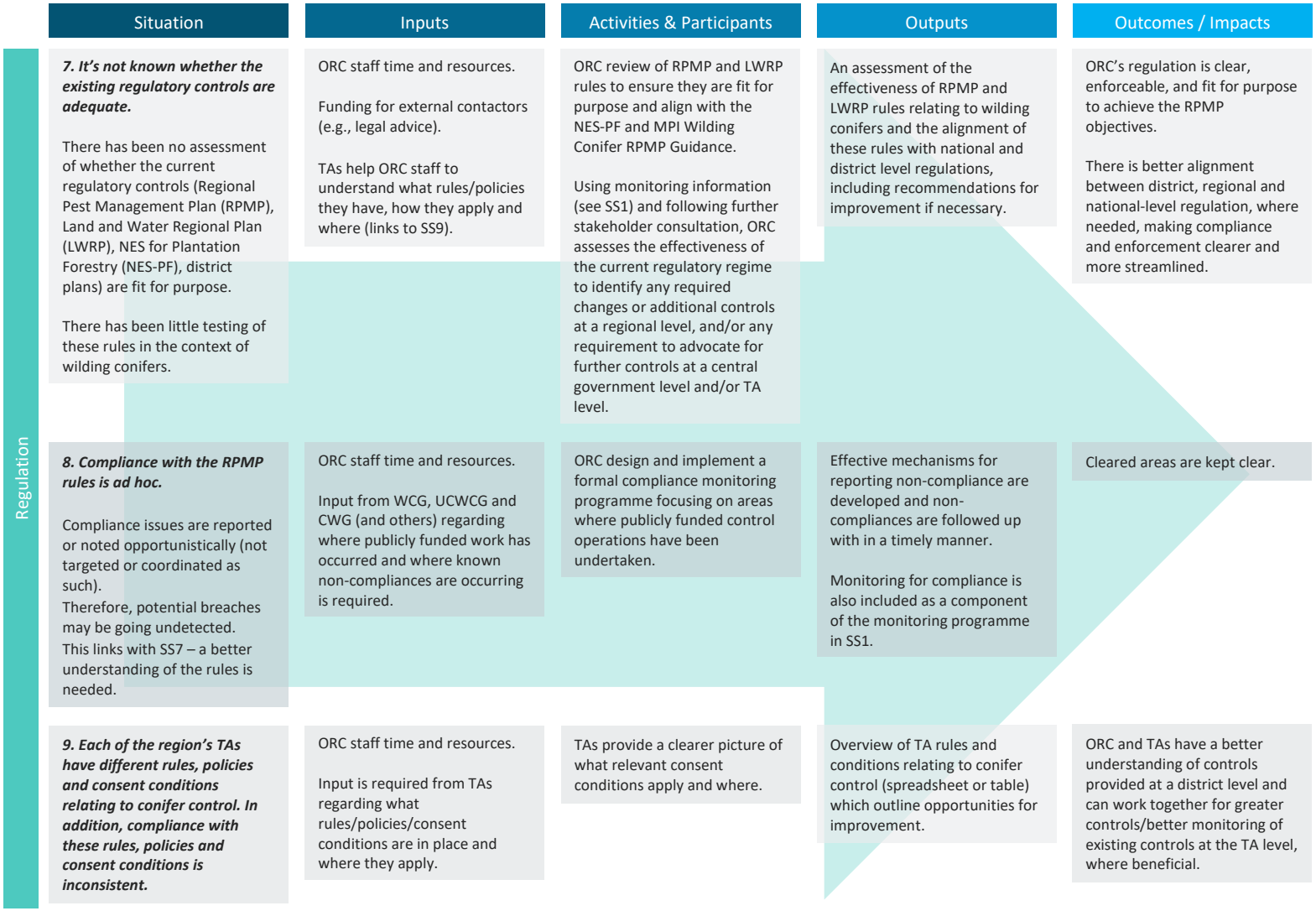
- ***Auditing NES-PF consent applications and wilding risk calculations:*** Operational matters have not been included as these are inherent within the effective operation of ORC and/or contractors. These include:

    - Suitably qualified and experienced staff and contractors to assess wilding risk calculations and consent applications.
    - Consistent compliance auditing and monitoring; and
    - Ongoing professional learning and development for relevant staff.


Situation
Inputs
Activities & Participants
Outputs
Outcomes / Impacts
Improving Understanding and Prioritising Work
1. Monitoring of wilding spread is inconsistent and incomplete.
Current monitoring/ surveillance is ad hoc. Inconsistent data collection makes it difficult to compare data sets over time.
MPI's proposed remote surveillance programme may still be several years away.
ORC time and resources.
Input is required from Ministry of Primary Industries (MPI), Land Information New Zealand (LINZ), Department of Conservation (DOC), Whakatipu Wilding Conifer Control Group (WCG), Central Otago Wilding Conifer Control Group (CWG), Upper Clutha Wilding Control Group (UCWCG), Territorial Authorities (TA) and private landowners regarding monitoring currently undertaken and in development.
ORC leads a body of work alongside others to review monitoring currently undertaken and in development, and identify opportunities to consolidate, improve, and add value to this.
The focus of this work will be how to complement and/or add value to Wilding Conifers Information System and monitoring currently undertaken by others rather than creating duplication. This will include investigating how to incorporate records of control work and field data for future planning purposes.
Informed by the review, ORC works with others to ensure that a robust and detailed regional surveillance programme is developed and implemented that is accurate, repeatable, and comparable. This must add value to, or at least be, compatible with, WCIS and monitoring undertaken by others.
Reliable monitoring data is used to prioritise control work, report on the impact of control work undertaken, and provide a better understanding of subregional nuances.
2. The location of seed sources and the spread of wilding conifers across Otago is not fully understood
Whilst there is data regarding the location of seed sources and the spread of wilding conifers across Wakatipu and Central Otago, the problem isn't yet fully understood in other parts of the region. This includes the location of shelter belts that may pose a wilding spread risk.
If the problem is underestimated and risks are not fully understood, opportunities to make early gains are lost.
ORC staff time and resources.
Data from the various existing monitoring programmes is required.
ORC works with others to create and/or update spatial records for wilding conifer spread across Otago.
ORC undertakes mapping to fill in spatial knowledge gaps identified across the region to augment/update WCIS.
ORC works with others to ensure information about seed sources (including shelterbelts) and their relative risk is available in a centralised database (e.g., WCIS).
Spatial datasets of wilding conifer infestation areas and seed sources are produced. These include an indication of relative current and future risk based on the 4S's as well as environmental, social, cultural, and economic factors.
Control work across the region is prioritised based on the 4 S's (species, status of control, spread factor, seed sources) as well as environmental, social, cultural, and economic factors for longer-term gains.
There is an increase in the amount of work being undertaken to control the spread of conifers at an early stage (pre-coning).
Current and future risks are better understood and recorded in WCIS or another central database (this outcome also links to that in SS4).


Situation
Inputs
Activities & Participants
Outputs
Outcomes / Impacts
Awareness and Education
3. Public awareness and acceptance could be better
The level of understanding regarding the urgency of the problem and social license for subsequent control work is greater in Wakatipu and Central Otago than other parts of Otago.
A lack of understanding of the issue and the urgency can lead to resistance, delays, and a reluctance to undertake control work.
Seed sources are often located in populated urban areas, and/or as shelter belts, amenity plantings, etc. Addressing these seed sources will require social, cultural, and political matters to be addressed and worked through.
There is a tension between controlling wilding conifers and saving/planting trees for carbon sequestration.
ORC staff time and resources.
Collaboration with MPI, LINZ, DOC, WCG, CWG, UCWCG, FENZ, TAs, Catchment Groups, and other key stakeholders such as the Wilding Pine Network is required.
ORC works with WCG, CWG, UCWCG, MPI and the Wilding Pine Network (WPN) to co-design and implement a communication and engagement plan for targeted education across the region to inform communities of the risks posed by wilding spread (e.g., fire risk, biodiversity loss, water yield, soil composition, wildfire risk, loss of productive land, changing landscapes, loss of historic and recreational areas etc).
ORC receives advice from MPI and others regarding the narrative for why it's necessary to control wildings when others are planting trees for carbon sequestration.
ORC includes information about rules, roles and responsibilities in its communications packages.
A communication and engagement plan for targeted education across the region.
Including:
- key message 'right tree, right place, right reason' rather than 'all conifers are a problem' (which they are not).
- tailored for different communities, industry sector groups and specific corporate entities to ensure they are pertinent e.g., 'how does it affect me?' etc.
- promotion of success stories
- visual tools to show likely/actual changes over time where appropriate (bearing in mind that landscapes forested with conifers are attractive to some people).
This incorporates and complements – rather than replaces – existing communications and engagement work undertaken by WCG, CWG, UCWCG, MPI and WPN.
Communities across Otago are well informed and aware about the risk of wilding conifer spread, the urgency of the issue in their area, and the benefits of early intervention.
Landowners are aware of their responsibilities regarding wilding conifer control, the need to keep areas clear and manage their land accordingly.
Individuals and communities are undertaking a greater amount of wilding control, motivated in part by successes reported elsewhere.
New non-production plantings (e.g., plantings in subdivisions, shelterbelts, amenity trees etc.) are non-spreading species.
Communities across Otago have a better understanding of the difference between problematic pest trees and trees that are providing commercial benefits, carbon sequestration, biodiversity benefits, and other environmental benefits.
Control work on public land continues at a higher rate due to less community resistance.


Situation
Inputs
Activities & Participants
Outputs
Outcomes / Impacts
Funding
4. There is no regional cost benefit analysis
The very high benefit to cost ratio of early control is often not taken advantage of.
A better understanding of the priorities and risk (refer to SS1 and 2) can help secure and target funding.
ORC staff time and resources.
Release of the recently updated cost benefit analysis report from MPI.
Input from stakeholders may also be necessary.
ORC draws upon the recently updated cost benefit analysis report from MPI and other sources to undertake a regional cost benefit analysis.
A regional cost benefit analysis to support applications to MPI (and others) for funding.
More funding is secured to undertake early intervention control work.
An increase in the amount of work to control the spread of conifers at an early stage.
Decisions about wilding conifer control are informed by regional cost benefit analysis.
(These outcomes link to SS2 prioritising locations based on better knowledge).
5. Funding levels are insufficient to address the problem.
NWCCP funding is insufficient to maintain the current control programme and achieve the outcomes of the NZWCMS. Strong advocacy will be required to secure national funding beyond 2024.
ORC staff time and resources.
Collaboration with LINZ, DOC, WCG, CWG, UCWCG, TAs and other key stakeholders such as the Wilding Pine Network is critical.
ORC collaborates with regional stakeholders and other regional councils to lobby central government to continue funding work through the NWCCP beyond 2024.
ORC prepares a business case to inform preparation of the next LTP.
Meetings and/or communications held with central government to discuss future funding.
A business case to support ORC LTP decisions on funding of wilding conifer control in Otago.
There is a continuation of, and increase in, the amount of NWCCP-funded wilding control work undertaken in Otago.
There is longer-term certainty that there is a programme and continuity of delivery structures.
An appropriate level of funding from ORC, supported by a business case.
6. There has been little publicly funded control work outside of Wakatipu/Central Otago
There is a need to undertake control in other management units where NWCCP-funded control work has not yet occurred.
ORC staff time and resources.
Uptake by a community group, and support from ORC, TAs, LINZ and DOC is required. Guidance from WCG, UCWCG and CWG will be beneficial.
ORC undertakes a body of work to determine how to best support the establishment of community-led wilding conifer control groups outside of Wakatipu/Central Otago, and how to ensure that these are funded in a way that doesn't divert committed funds from existing programme areas.
Mechanisms to facilitate the establishment of community-led wilding conifer control groups outside of Wakatipu/Central Otago.
Community-led wilding conifer control groups are operating across the region, particularly in Wanaka.


Situation
Inputs
Activities & Participants
Outputs
Outcomes / Impacts
Regulation
7. It's not known whether the existing regulatory controls are adequate.
There has been no assessment of whether the current regulatory controls (Regional Pest Management Plan (RPMP), Land and Water Regional Plan (LWRP), NES for Plantation Forestry (NES-PF), district plans) are fit for purpose.
There has been little testing of these rules in the context of wilding conifers.
ORC staff time and resources.
Funding for external contactors (e.g., legal advice).
TAs help ORC staff to understand what rules/policies they have, how they apply and where (links to SS9).
ORC review of RPMP and LWRP rules to ensure they are fit for purpose and align with the NES-PF and MPI Wilding Conifer RPMP Guidance.
Using monitoring information (see SS1) and following further stakeholder consultation, ORC assesses the effectiveness of the current regulatory regime to identify any required changes or additional controls at a regional level, and/or any requirement to advocate for further controls at a central government level and/or TA level.
An assessment of the effectiveness of RPMP and LWRP rules relating to wilding conifers and the alignment of these rules with national and district level regulations, including recommendations for improvement if necessary.
ORC's regulation is clear, enforceable, and fit for purpose to achieve the RPMP objectives.
There is better alignment between district, regional and national-level regulation, where needed, making compliance and enforcement clearer and more streamlined.
8. Compliance with the RPMP rules is ad hoc.
Compliance issues are reported or noted opportunistically (not targeted or coordinated as such).
Therefore, potential breaches may be going undetected.
This links with SS7 – a better understanding of the rules is needed.
ORC staff time and resources.
Input from WCG, UCWCG and CWG (and others) regarding where publicly funded work has occurred and where known non-compliances are occurring is required.
ORC design and implement a formal compliance monitoring programme focusing on areas where publicly funded control operations have been undertaken.
Effective mechanisms for reporting non-compliance are developed and non-compliances are followed up with in a timely manner.
Monitoring for compliance is also included as a component of the monitoring programme in SS1.
Cleared areas are kept clear.
9. Each of the region's TAs have different rules, policies and consent conditions relating to conifer control. In addition, compliance with these rules, policies and consent conditions is inconsistent.
ORC staff time and resources.
Input is required from TAs regarding what rules/policies/consent conditions are in place and where they apply.
TAs provide a clearer picture of what relevant consent conditions apply and where.
Overview of TA rules and conditions relating to conifer control (spreadsheet or table) which outline opportunities for improvement.
ORC and TAs have a better understanding of controls provided at a district level and can work together for greater controls/better monitoring of existing controls at the TA level, where beneficial.

Benefits and Costs of Additional Investment in Wilding Conifer Control in the Otago Region

Prepared for Boffa Miskell on behalf of the Otago Regional Council

Matthew Williamson and Mehrnaz Rohani
12 October 2023

Contents

Glossary 4
Acknowledgements 5
Executive summary 6
1. Framework for this cost benefit analysis 8
1.1 Investment options being assessed 8
1.2 The identified impacts 10
2. Summary of the CBA result 15
2.1 Status quo would result in lost benefits of $2.1 billion 15
2.2 Significant benefits from additional control 16
2.3 Minimum option represents the best value for money 17
2.4 General assumptions 19
3. Calculation of costs 20
4. Area controlled 22
5. Calculation of benefits 29
5.1 Productive land use 29
5.2 Water yield benefits 32
5.3 Avoided cultural / biodiversity losses 39
5.4 Benefits from reduced wildfire risk and hazard 44
5.5 Māori cultural values (qualitative) 47
6. Area for further research 49
References 50
About Sapere 55

Tables

Table 1: Control (ha) by region for each option assessed 10
Table 2: Summary of the CBA results for the status quo, minimum, intermediate and maximum options modelled over 50 years 15
Table 3: Costs of the Status quo option ($ millions) 20
Table 4: Costs of the minimum option ($ millions) 20
Table 5: Costs of the intermediate option ($ millions) 20
Table 6: Costs of the maximum option ($ millions) 21
Table 7: Hectares controlled by density class in 2022/23 22
Table 8: Transition through density classes as a result of control 22
Table 9: Grazing intensity, sheep per hectare by region 30
Table 10: Assumed production loss by density class 31
Table 11: Productive land use benefits 50 year PV ($ millions) 32

Table 12: Resource rents for hydro catchments....35
Table 13: PV of hydroelectricity benefits over 50 years ($ millions)....35
Table 14: Value received from non-forestry irrigated land....36
Table 15: PV of irrigation benefits over 50 years (millions)....39
Table 16: Value of cultural/biodiversity benefits based on WTP study ($ millions)....44

Figures

Figure 1: The relationship between ecosystem services and the TEV framework....11
Figure 2: Wilding conifer benefits under TEV framework....12
Figure 3: Value of costs and benefits on minimum option over the 50 year time horizon (undiscounted)....17
Figure 4: Marginal benefits compared to costs for each option ($ millions)....18
Figure 5: Impact of discounting....19
Figure 6: Current average stems per hectare....24
Figure 7: Average stems per hectare in 2072, Status quo option....25
Figure 8: Average stems per hectare in 2072, Minimum option....26
Figure 9: Average stems per hectare in 2072, Intermediate option....27
Figure 10: Average stems per hectare in 2072, Maximum option....28
Figure 11: Values applied to low and high producing grasslands....31
Figure 12: Hydro generator catchments....34
Figure 13: Irrigated land areas, 2020....37
Figure 14: Regional irrigation catchments....38
Figure 16: Existing Infestation and Indigenous Vegetation....41
Figure 17: Infestation and Indigenous Vegetation, Abandon All Control Activities, 2072....41
Figure 18: Infestation and Indigenous Vegetation, Status quo Option, 2072....42
Figure 19: Infestation and Indigenous Vegetation, Minimum Option, 2072....42
Figure 20: Infestation and Indigenous Vegetation, Intermediate Option, 2072....43
Figure 21: Infestation and Indigenous Vegetation, Maximum Option, 2072....43
Figure 22: Avoided wildfire costs....46
Figure 23 Benefits per hectare controlled adjusted for increased very high and extreme fire risk days due to climate change....46
Figure 24: Present value of fire benefits by investment option ($ millions)....47

Glossary

Abbreviation	Stands for
BCR	Benefit cost ratio
CBA	Cost benefit analysis – a structured method for analysing the economic impact (costs and benefits) of a decision.
Density classes	Outlier: 0-1 % OPC infestation Sparse: 1-15% OPC infestation Intermediate: 15-75% OPC infestation Dense: 75-100% OPC infestation
EBITR	Earnings Before Interest and Taxes and Rent. Used as a measure of business profitability.
ETS	Emissions Trading Scheme - a market-based approach for reducing emissions of greenhouse gases by charging producers for the gases they emit and providing credits for those that remove gasses.
MPI	Ministry for Primary Industries
MU	Management unit – the administrative boundaries the country has been divided into for the National Wilding Conifer Control Programme
NWCCP	National Wilding Conifer Control Programme
NPV	Net present value – the sum of all costs and benefits discounted to today's dollars.
NZU	New Zealand Units – the emissions units that are traded as part of the ETS.
OAG	Operational Advisory Group – advisory group within the NWCCP providing advice on how and where operational activities are best delivered.
OPC	Overall percentage cover. Used to describe density of wilding infestation.
Phase one	Activity funded under the NWCCP between 2016/17 and 2018/19. $16m was allocated for this phase.
Phase two	Activity funded under the NWCCP between 2019/20 and 2020/21. In Budget 2019 ($21m) was allocated for this phase.
PV	Present value – the sum of costs or benefits discounted to today's dollars. Discounting is a way of recognising that a dollar today is worth more than a dollar tomorrow.
TEV	Total Economic Framework – a structured framework for valuing the benefits and costs of ecosystem services.
WCIS	Wilding Conifer Information System – administered by LINZ, WCIS collects details of infestations, control activities, operational areas and points of interest.

Acknowledgements

We would like to acknowledge Norman Mason and Robbie Price, Manaaki Whenua, for their modelling of future wilding conifer spread and ecosystem service impacts. These forecasts of infestation growth and water loss were used to estimate the benefits presented in this report.

We acknowledge and thank Maksym Polyakov for providing an advanced copy of the willingness to pay study used to value non-market impacts and for his advice on how to apply these results in this CBA; Dr John Helstrom and Sherman Smith (Manager, Wilding Conifer Management Programme, MPI) for providing advice and quality assurance throughout the development of this CBA; Simon Heddle-Baker, MPI for supporting with the collection of vast quantities of data required to do this analysis; and Keith Briden (Department of Conservation) and Graham Sullivan (Environment Canterbury) for their valuable feedback on the draft results.

Executive summary

Wilding conifers are invasive weeds that have a serious impact on New Zealand's primary industries and natural environment affecting native landscapes, land use, biodiversity, and cultural values. Introduced in the 1880s, these trees have spread from forests, shelterbelts and erosion control plantings and without control they will form dense forests (Department of Conservation). Manaaki Whenua modelling shows that if left unchecked, over the next fifty years wildings would spread to a further 500,000 hectares and 1.8 million hectares would be covered in dense forest. The aims of the New Zealand Wilding Conifer Management Strategy 2015–2030 are to prevent the spread of wilding conifers and to contain or eradicate established areas of wilding conifers by 2030.

This CBA builds upon the national analysis (Sapere, 2022) to understand the value gained at the regional level. For interested readers, the 2022 national analysis contains a large amount of additional detail and background discussion, and is available on both the Sapere research group, and MPI websites.

Investment to date recognises the substantial benefits from controlling wilding conifers

$37 million, covering five years from July 2016 to June 2021, was invested in the National Wilding Conifer Control Programme (NWCCP). A 2018 cost benefit analysis concluded that the benefits of control greatly outweighed the costs (Wyatt, 2018). It also highlighted that sustainable management of wilding conifers would require investment well into the future if the intention is to reduce infestations to a level that is manageable by landowners.

Additional investment was made in Budget 2020 with $100 million committed over four years to the NWCCP under the Jobs for Nature programme. This has seen the expansion of the control programme across New Zealand and with it, immediate benefits from job creation in regions that were hit hard economically by COVID-19. While the benefits of job creation were important for these communities, controlling wilding conifers has much larger societal benefits by protecting water for hydro power generation and irrigation, and the productive land saved from infestation.

Jobs for Nature funding comes to an end from 2023/24 with ongoing funding of $10 million per annum committed to the NWCCP. This level of funding would be insufficient for the programme to achieve control of wilding conifers on a national scale, with control activity scaled back from 49 active management units to 10 over a four-year period. Under this scenario, 42 per cent of the known national infestation would be actively managed while spread and regrowth would continue in the abandoned management units (MUs).

For Otago, control activity is scaled back from 89 per cent of known infestation, to 50 per cent.

We assessed the costs and benefits of four investment options

This report presents an updated cost benefit analysis of wilding conifer control for the Otago Regional Council and assesses the economic impact of additional investment in wilding conifer control for four investment options:

1) Status quo "losing the investment" – Scale back control activities to ten management units nationally, and four within the Otago Region.
2) Minimum "protect the investment" – continue control activity across the existing forty-nine management units[1] nationally, and fourteen within the Otago Region.
3) Intermediate "extend the investment" – expanding the activity to include a further eleven priority management units nationally, five of which are in the Otago Region.
4) Maximum "national control" – the intermediate option plus a further nineteen priority management units nationally, none of which are in the Otago Region. A slight increase in funding to management units identified in the status quo, minimum, and intermediate options is observed under the maximum option.

The purpose of this cost benefit analysis is to inform the investment decision. We, therefore, compare the costs and benefits from additional investment to the counterfactual (also referred to as the status quo option) of $1.8 million per annum estimated ongoing funding.

A total economic value framework has been used for categorising and calculating the costs and benefits of the programme. The framework includes the economic impact on both productive land use values, and 'non-use' cultural and biodiversity values of the controlled land. Modelling of wilding conifer spread and ecological system impacts, developed by Manaaki Whenua (Landcare Research), was used to calculate the result and is a significant advancement on previous analyses. The benefits of the programme were monetised using market and non-market valuation techniques. The only benefit that has not been monetised is Māori cultural values, which is described qualitatively and should be presented alongside the monetary results of the CBA.

[1] the administrative boundaries the country has been divided into for the National Wilding Conifer Control Programme

1. Framework for this cost benefit analysis

We constructed the CBA within a Total Economic Value (TEV) framework, due to the importance of ecosystem services including 'non-use' values such as biodiversity along with 'use' values (or market values). For example, 'use' values would be the value generated by primary producers on controlled land, whereas 'non-use' may be the value people place on biodiversity or pristine natural landscapes or significant cultural or historical sites, in particular for Mana Whenua, even though the general population may not use or see them; knowing they exist and will exist for future generations is of value.

Within a TEV Framework, an allowance is conceptually made for people who are willing to pay for the continued existence of a particular landscape, ecosystem or species. This is important when assessing pest control practices, when there is a reduced risk of losing species and biodiversity is retained or enhanced. The TEV framework is appropriate for this CBA and is widely used when dealing with ecosystem services and environmental impacts (Rohani et al., 2018; Sharp & Kerr, 2005).

An ecosystem services approach is a way of quantifying and incorporating what we implicitly value in the environment into production and governance practices. From a Te Ao Māori perspective (in line with MPI's Fit for a Better World strategic roadmap) the environment and obligation to protect it has value. This value is in addition to the value to Iwi and Hapū from specific sites and collectively owned Māori land, land which may be at risk from wilding conifers. When the intrinsic value of these services is not recognised in the marketplace, poor decision-making can occur. In contrast, their inclusion enables practices that enhance overall economic, environmental, and social values and advances decision-making that leads to more efficient and acceptable trade-offs between different values (The Royal Society of New Zealand, 2011).

1.1 Investment options being assessed

This CBA assesses the impact of three investment options against the counterfactual. The counterfactual is what would happen if additional funding was not secured, we call this the "status quo" option.

The options were developed through an iterative process with the programme's Operational Advisory Group (OAG). The group reprioritised all management units and used this ranking to determine which areas would be abandoned under the status quo option and which would be included under the minimum, intermediate and maximum options. A full list of the management units controlled under the options is provided in the national report.

Status quo "lose the investment" (control 50% of the known infestation)

Baseline funding of $1.8 million per annum continues from 2023/24. If no further investment is made, the programme would be substantially scaled back over the next four years. This would result in areas which are currently free from wilding conifers becoming re-invaded, the gains made on abandoned land would be lost and future benefits foregone as wilding conifers spread.

Of the 21 management units within Otago, only the four highest priority MUs (covering 49.7 per cent of the known infestation) would continue to be actively managed by 2025/26.

Proposed investment options

This report assesses the economic impact of additional investment in wilding conifer control for three investment options:

1. **Minimum "protect the investment" (control 89.4% of the known infestation)** – continue to support existing control activity across 14 management units
2. **Intermediate "extend the investment" (control 99.9% of the known infestation)** – expanding the activity to include a further five priority management units
3. **Maximum "national control" (control 99.9% of the known infestation)** – the intermediate option plus slightly higher funding in some management units.

A summary of the total hectares of known infestation that would be controlled under each of the proposed options is shown on the next page.

Table 1: Control (ha) by region for each option assessed

Region	Infestation (ha)	Hectares controlled for each option			
		Status quo	Minimum	intermediate	Maximum
Otago	481,514	239,090	430,500	480,894	480,894
Per cent of known infestation controlled	-	49.65%	89.41%	99.86%	99.86%

Source: WCIS

1.2 The identified impacts

We identified the following 'use' benefits the Otago region would obtain from wilding conifer control:

- primary production / productive land use
- water yields for hydro generation and irrigation
- reduced wildfire spread and damage risk
- protecting iconic landscapes for recreation and aesthetic value

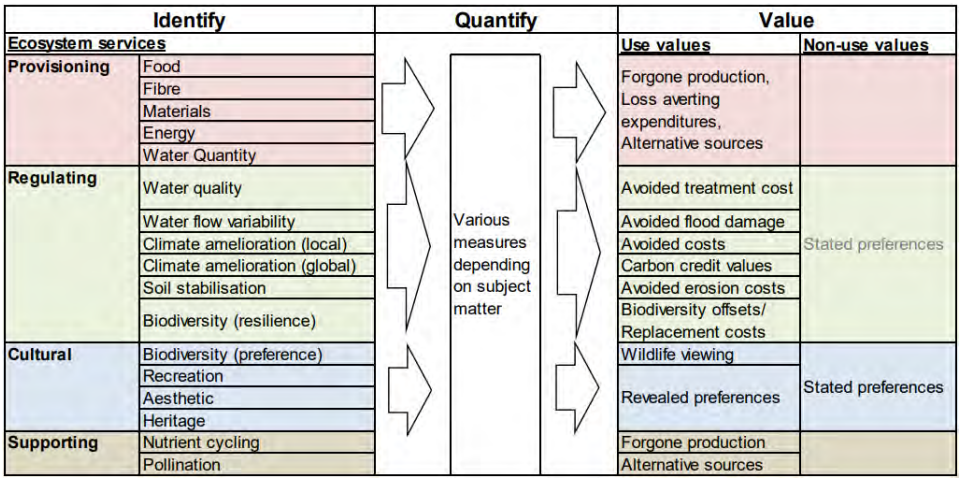
And 'non-use' benefits

- avoiding biodiversity losses – including preventing soil legacies
- protecting Māori cultural values e.g. protecting sites of significance to Mana Whenua, and Māori land, from the impacts of introduced species.

The aim is to monetise the impacts where possible, though where this in not possible a qualitative assessment of the impact is appropriate and should be considered alongside the monetised CBA result.

The impacts on ecosystem services are measured and monetised through the TEV framework. A report published by Treasury (NZIER, 2018) demonstrates the relationship between the ecosystem services approach, its components, and the valuation techniques that monetise their use and non-use values.

Figure 1: The relationship between ecosystem services and the TEV framework



Source: (NZIER, 2018)

1.2.1 Monetised benefits

Using the framework in Figure 1 as a guide, we have monetised productive land use, and water yield benefits using market values for foregone production. Specifically, these include:

- Productive land use – valued using sheep and beef farm profitability (earnings before interest, taxes, and rent (EBITR) from sheep + beef survey data)
- Water yields (in hydro catchments) - value of foregone hydro generation using the resource rents series produced by Statistics NZ, which is broadly equivalent to the EBITR measure.
- Water yields (irrigation) – valued using the value of irrigation based on profitability of farms on irrigated land (NZIER & AgFirst Consultants NZ Ltd, 2014).

We value reduced fire risk using an avoided costs method. To do this we use a paper on the economic cost of wildfires (BERL, 2009) prepared for Fire and Emergency NZ.

We have applied a non-market value for the cultural ecosystem services - biodiversity, recreation, and landscape aesthetics. There are monetised using a stated preference method. The non-market valuation study (Polyakov et al., 2021) reveals the use and non-use values from wilding control such as scenery, recreation and the existence of ecosystems and species through Willingness to Pay (WTP) survey of households. We used this study's results through the value transfer methodology for monetisation of these benefits.

A full list of calculated costs and benefits and values used to calculate them is provided in the national wilding conifers report, attached.

1.2.2 Non-monetised benefits

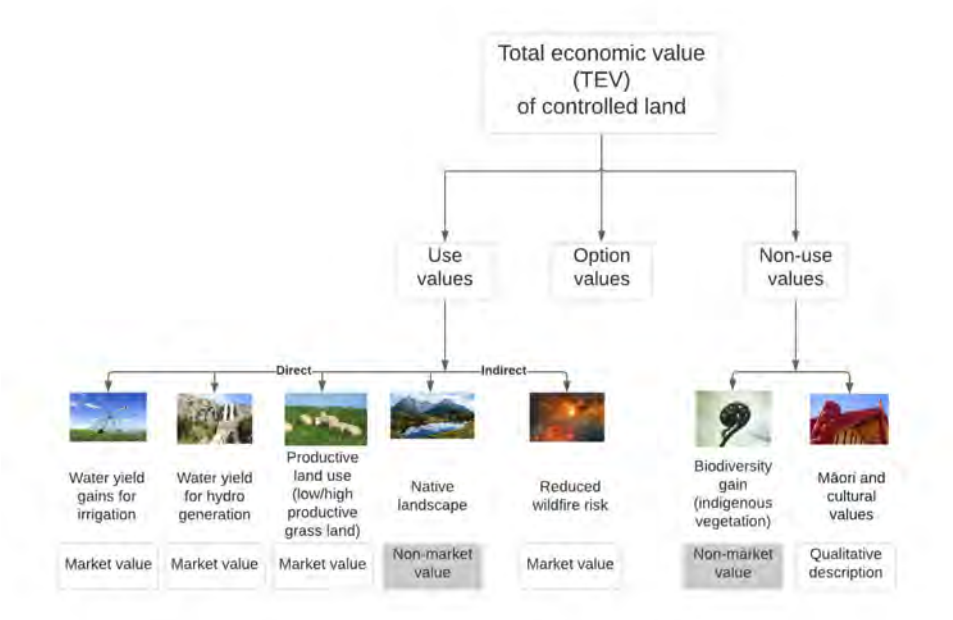
While every effort has been made to monetise the identified benefits, Māori cultural values have not been monetised. There are two main reasons for this:

- Māori values are holistic and can include principles, intrinsic, tangible and intangible values, and there is not enough information available for these values.
- Each iwi/hapū may have its own tradition in this respect, which makes a uniform discussion of 'Māori heritage values' problematic.

Therefore, the value Māori might place on control of wilding conifers has been qualitatively described in section 5.5 Māori cultural values. This qualitative assessment should be considered alongside the Benefits to Cost Ratio (BCR) calculation when funding decisions are made for wilding conifer control.

A summary of the benefits under the total economic framework is illustrated below.

Figure 2: Wilding conifer benefits under TEV framework



Source: Sapere. Wildfire photo: credit Brian High

1.2.3 Costs

Costs of each option are defined as the additional financial costs (or required fund) of the option compared with the status quo option. The costs included in this CBA consist of:

- Programme control costs
- Fixed programme management costs

- Deadweight loss of taxation (20 percent of control and programme costs)

Programme control and programme management costs have been provided by MPI for the nine year period from July 2022 to June 3031.

1.2.4 Valuing the area controlled and avoided spread

By controlling wilding conifers, we gain back some or all of what has been lost due to the impacts of wildings. By reducing or eliminating seed sources, the programme is also protecting against future spread and the losses that result. We have calculated the benefits based on the removal of existing infestations and the spread avoided as a result.

Modelling of future wilding conifer spread was developed by Manaaki Whenua and adapted for this CBA. Forecasts were provided at a highly granular level (1km x 1km grid squares) and included forecasts of infilling (local increase in population density) and invasion to neighbouring grid squares. The modelling does not include the impact of long distance spread events, so is likely to underestimate the extent of spread and impacts over the longer term.

The methods used and efforts put into calculating wilding conifer spread and the impacts on ecosystem services are a significant advancement on previous cost benefit analyses. Geospatial modelling has been used to ensure the impacts from wilding infestation on water yields, productive land use, and biodiversity have been accurately mapped to layers on land use, hydro and irrigation catchments and native vegetation. A description of the methods used by Manaaki Whenua is included in the national report. The application of these forecasts and geospatial modelling methods used to calculate the benefits are described in section 5 *Calculation of benefits*.

1.2.5 Employment gains and ETS impacts are excluded

In CBAs, additional benefits from employment are usually ignored. In most cases, there is a displacement effect where the investment results in workforce movement from one job/sector to another meaning there is no net gain. Gains from employment should be included when there is high unemployment, but this is not the case in the current macroeconomic environment, so we have excluded marginal employment benefits from the CBA.

We have also not included the impact of carbon emissions in the CBA. There are two reasons for this:

1. Emissions are capped under the Emissions Trading Scheme (ETS) so emission reductions in one area in the economy will free up New Zealand Units (NZUs) to be used by emitters in another area. This is also known as the waterbed effect (Energy Resources Aotearoa, 2021). We have assumed any changes to carbon sequestration or emissions are transfer payments and should not be counted in the CBA.

2. Wilding conifers cannot be registered under the ETS due to their status as tree weeds. Consequently, there is no market value for the carbon sequestered by wilding conifers and no obligations under the ETS to surrender NZUs for the removal of wildings[2].

Despite not including emissions in the CBA, we have quantified the benefits of avoided carbon emissions from non-renewable energy generation to provide context on the impact of reduced water yields for hydroelectricity. This analysis is provided in the national report.

[2] With the exception of a few wilding conifer forests that were registered with the ETS before the rule change to exclude pest trees. The impact of these forests is assumed to be negligible.

2. Summary of the CBA result

Table 2 summarises the present value of costs and benefits for each wilding conifer control option over 50 years (consistent with the time period used in the 2018 CBA). The net present value (NPV) and benefit cost ratio (BCR), two of the efficiency tools that are used in CBAs, are also presented.

We have included the counterfactual option (status quo) for comparison. Cost benefit analysis are used to inform investment decisions and would ordinarily show only the additional costs and benefits for the identified investment options compared to the counterfactual.

Table 2: Summary of the CBA results for the status quo, minimum, intermediate and maximum options modelled over 50 years

Present value ($ million)		Status quo – lose the investment	Minimum – protect the investment	Intermediate – extend the investment	Maximum – national control
Benefits	Productive land use	$131	$482	$534	$534
	Hydro	-$61	$71	$176	$176
	Irrigation	$106	$215	$381	$385
	Cultural / biodiversity	$561	$2,063	$2,101	$2,101
	Fire	$5	$78	$84	$84
	TOTAL	$742	$2,909	$3,276	$3,279
Costs	Programme	$15	$25	$29	$32
	DWL	$3	$5	$6	$6
	TOTAL	$18	$30	$35	$38
Total economic value					
Net present value		**$724**	**$2,879**	**$3,241**	**$3,241**
Benefits : Cost Ratio (BCR)		**42**	**96**	**93**	**86**
Use value					
Net present value		**$164**	**$815**	**$1,139**	**$1,140**
Benefits : Cost Ratio (BCR)		**10**	**28**	**33**	**31**

2.1 Status quo would result in lost benefits of $2.1 billion

The status quo option has a net present value of $724 million over 50 years. However, this option is a substantial disinvestment that would see the area controlled reduce from 89.41 per cent of the known infestation to 49.65 per cent. As a result, there would be a substantial loss in benefits as wilding conifers re-infest land no longer under active management. Relative to the minimum option (continuing funding at the level provided under the Jobs for Nature programme) we estimate losses of $2.1 billion over 50 years (measured in 2021 dollars) from lost primary production, reduced water yields, loss of biodiversity and cultural values and increased fire spread and damages. These losses are enormous compared against the cost savings (including deadweight loss) of $13 million by scaling back the programme.

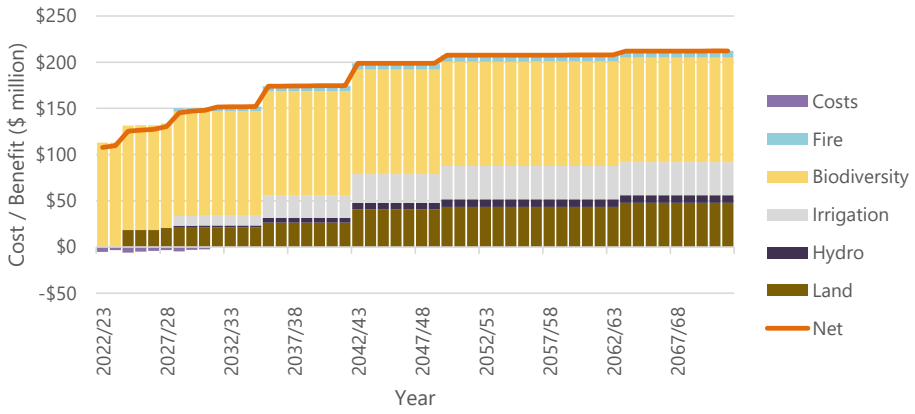
2.2 Significant benefits from additional control

Investment in the minimum, intermediate and maximum options would ensure the losses from scaling back activity are avoided and provide additional benefits. The benefits to cost ratio of wilding conifer control shows significant return for every dollar spent for the minimum option at 96:1, intermediate option at 93:1 and maximum option at 86:1, this is in line with previous analysis (Wyatt, 2018).

We note that, across all three options:

- Irrigation benefits and productive land use account for 24 - 28 per cent of the TEV-based benefits, at around 7 - 12 per cent and 16 - 17 per cent of the total benefits respectively. Irrigation is particularly important due to the high value derived from irrigation in Otago, and the infestation of wilding conifers in the irrigation catchments for these regions. This is discussed further in section 5.2.2.
- Benefits from reduced fire risk account for 0.7 – 2.7 per cent of the total benefits.
- Cultural / biodiversity value makes up 64.1 – 75.8 per cent of the benefit and is a significant component. We consider this to be a low estimate as Māori cultural values are not monetised. A qualitative discussion on Māori cultural values is included in section 5.5 *Māori cultural values*.
- Many of the benefits accrue in the medium to long term since they represent the losses that would be avoided by controlling wilding conifers before they spread and densify. Figure 3 illustrates the timeline of marginal costs and benefits (by component) of the minimum option.

Figure 3: Value of costs and benefits on minimum option over the 50 year time horizon (undiscounted)

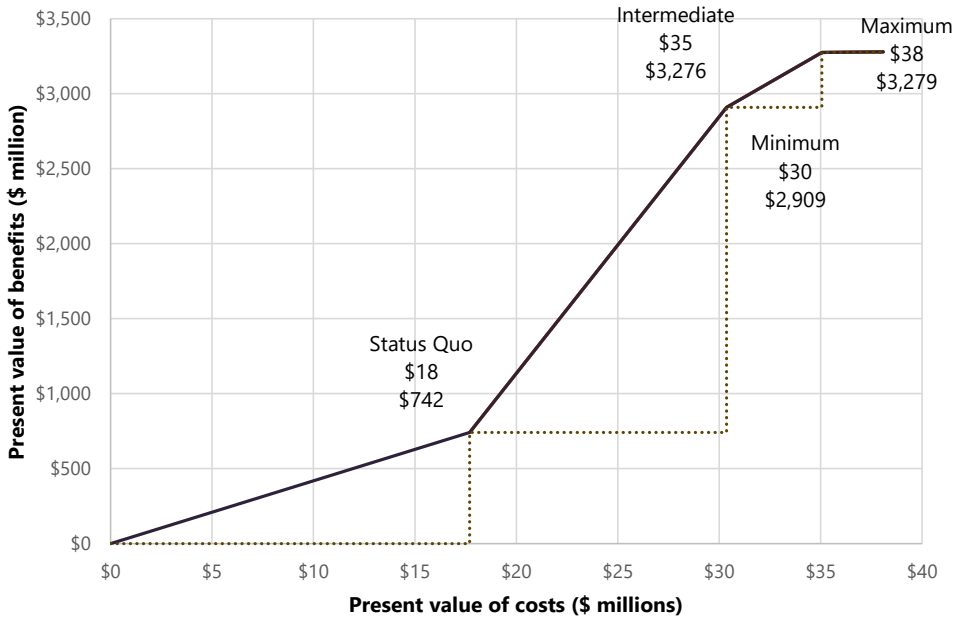


Detailed information of the marginal costs and benefits of each option is provided in sections 4 and 5.

2.3 Minimum option represents the best value for money

The results of the CBA show that the minimum option (BCR of 96) presents the best value for each dollar spent in this programme. Figure 4 shows that the net present value of the control programme increases at a decreasing rate. Therefore, the fourteen MUs controlled under the minimum option produce greater benefits per dollar spent than the next groups of MUs added, i.e., five additional MUs under the intermediate and maximum options. Additionally, the status quo option produces less benefits per dollar spent than the minimum option. This reflects the large disbenefits experienced under this option on land currently controlled.

Figure 4: Marginal benefits compared to costs for each option ($ millions)



Source: Sapere

High priority areas are selected based on the spread risk of the wilding species, the vulnerability of the landscape to invasion, and the cost effectiveness of control. The decreasing BCR for intermediate and maximum options reflects this prioritisation.

2.3.1 The result needs to be viewed alongside practical and strategic considerations

While the minimum option is the preferred option based on a 'maximise benefits: cost ratio rule', it might not be the preferred option to achieve the National Programme objectives or deliver the required level of wilding conifer control to the point that land can be managed by landowners, or when considering non-monetized values such as Māori cultural values. In addition, significant additional risk-adjusted returns are accrued in the intermediate and maximum options, both of which have a higher NPV than the minimum option. A higher NPV indicates that the additional spend under these options is more than the required return on capital and should be pursued. Therefore, the decision makers should look at the CBA results in the context of the wider business case and specifically the strategic case.

2.4 General assumptions

We carried out the CBA based on the following assumptions and considerations:

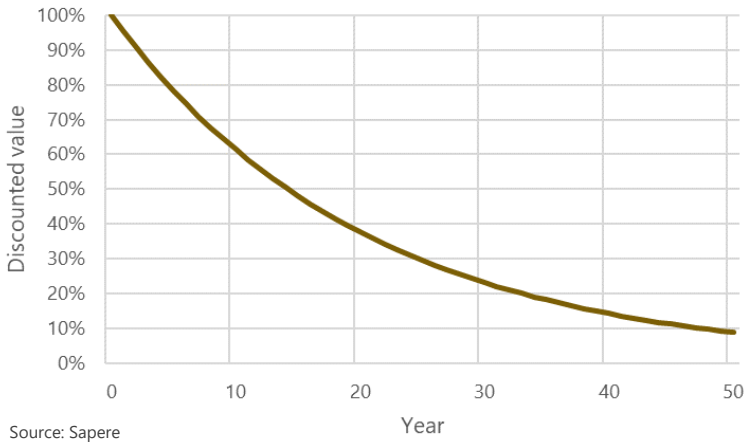
- Time zero, future costs and benefits are calculated starting 2022/23.
- Base date, the date that is used to standardise the valuation of all monetised benefits and costs, is 2021/22.
- The analysis period starting from time zero is 50 years. The nature of wilding conifer control is that costs are largely incurred up-front, and the benefits accrue gradually thereafter. A 50-year horizon would seem appropriate to ensure the benefits are adequately included in the result.
- While the cost of controlling each MU reduces over time, the cost of control activity will be ongoing until infestations are controlled to a level that they can be managed by landowners and communities. With the required funding, the majority of MUs under the minimum option will be transitioned to local management by 2030/31. MUs under the intermediate and maximum options are likely to be able to transition 6 – 12 years after commencement of control.
- Discount rate is 5 per cent per annum as per Treasury guidance (The Treasury, 2020) – this is the rate that reflects the time value for money and used to calculate the present value of the costs and benefits at time zero.

The effect of discounting costs and benefits

We discount because a dollar today is worth more than a dollar in a year's time. It also assures the decision maker that when assessing an investment decision it can be compared against any other investment decision of equal risk (The Treasury, 2015).

A 5 per cent discount rate means that at 15 years the benefits and costs are halved, and by 30 years we recognise less than 25 per cent of the value.

Figure 5: Impact of discounting



Source: Sapere

3. Calculation of costs

Additional costs have been estimated for each investment option, these include:

1. Control and fixed programme management costs – the cost of managing and administering the NWCCP, the cost of control activity including control staff, project managers and contractors, and the cost of post control monitoring.
2. Deadweight loss of taxation (DWL) - this is the welfare loss of taxpayers, and NZ Treasury suggests CBAs should include a deadweight cost equal to 20 per cent of project costs that are funded from general taxation (The Treasury, 2015).

Control and programme management costs have been provided by MPI.

We account for the deadweight loss of taxation where an investment is funded from taxation (or a rate). The deadweight loss of taxation recognises the welfare loss that arises when money is taken away in the form of taxes, for example, income tax on labour income tends to discourage working in favour of leisure or home-based activities (The Treasury, 2015). Treasury guidance is to apply twenty per cent to the cost of a project funded through general taxation.

The costs used in this CBA are summarised below both in nominal terms and as a present value (PV)

Table 3: Costs of the Status quo option ($ millions)

Status quo	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30	30/31	PV
Control and Programme	$3.9	$1.7	$1.8	$1.7	$1.7	$1.5	$2.4	$1.8	$1.8	$14.8
DWL	$0.8	$0.3	$0.4	$0.3	$0.3	$0.3	$0.5	$0.4	$0.4	$3.0
Total	$4.7	$2.0	$2.2	$2.1	$2.1	$1.8	$2.9	$2.2	$2.1	$17.7

Table 4: Costs of the minimum option ($ millions)

Minimum	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30	30/31	PV
Control and Programme	$4.4	$2.8	$5.0	$4.2	$3.6	$2.7	$4.1	$2.6	$2.0	$25.3
DWL	$0.9	$0.6	$1.0	$0.8	$0.7	$0.5	$0.8	$0.5	$0.4	$5.1
Total	$5.3	$3.4	$6.0	$5.0	$4.3	$3.3	$4.9	$3.1	$2.4	$30.4

Table 5: Costs of the intermediate option ($ millions)

Intermediate	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30	30/31	PV
Control and Programme	$5.4	$3.7	$5.7	$4.7	$4.2	$3.0	$4.3	$2.7	$2.4	$29.2
DWL	$1.1	$0.7	$1.1	$0.9	$0.8	$0.6	$0.9	$0.5	$0.5	$5.8
Total	$6.5	$4.4	$6.9	$5.6	$5.1	$3.6	$5.1	$3.2	$2.9	$35.1

Table 6: Costs of the maximum option ($ millions)

Maximum	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30	30/31	PV
Control and Programme	$5.9	$4.5	$6.5	$5.4	$4.3	$3.0	$4.4	$2.7	$2.4	$31.7
DWL	$1.2	$0.9	$1.3	$1.1	$0.9	$0.6	$0.9	$0.5	$0.5	$6.3
Total	$7.1	$5.4	$7.8	$6.5	$5.1	$3.6	$5.2	$3.2	$2.9	$38.1

Source: MPI, Sapere Analysis

4. Area controlled

Costs and benefits are a function of the area controlled. The impact of controlling an area means existing infestations are removed and future spread is avoided.

4.1.1 Control of existing infestations

Currently the programme has funding to control 430,500 hectares of infestation. A reduction in funding to $1.8 million per annum under the status quo option would see this amount drop to 239,090 hectares. Table 9 displays the hectares controlled under each option by density class[3].

Table 7: Hectares controlled by density class in 2022/23

Density	Status quo	Minimum	Intermediate	Maximum
Outlier	8,673	11,715	11,743	11,743
Sparse	152,733	277,419	317,216	317,216
Intermediate	63,632	123,502	133,931	133,931
Dense	14,052	17,863	18,003	18,003
Total	*239,090*	*430,500*	*480,894*	*480,894*

Source: Sapere analysis

We have applied general assumptions for the time required to control an infestation based on density class. These assumptions are based on an area being controlled once every three years. There will also be some level of ongoing maintenance control that may be required by landowners.

Table 8: Transition through density classes as a result of control

Starting density	Infestation at 3 years	Infestation at 6 years	Infestation at 9 years	Infestation at 12 years
Dense	Dense	Sparse	Outlier	None
Intermediate	Sparse	Outlier	None	
Sparse	Outlier	None		
Outlier	None			

The above assumptions are based on advice from the NWCCP. For the purposes of this CBA we assume that as an end state, no wilding conifers remain post-control but we note that this is not always the case. Control with the aim of removing wilding conifers frequently fails to kill 100 per cent

[3] Density classes are defined as: outlier 1-0% overall percentage cover (OPC), sparse 15-1% OPC, intermediate 75-15% OPC, dense 100-75% OPC

of trees, and may result in post-removal dominance by other non-native species, or reinvasion by wilding conifers (Dickie et al., 2021).

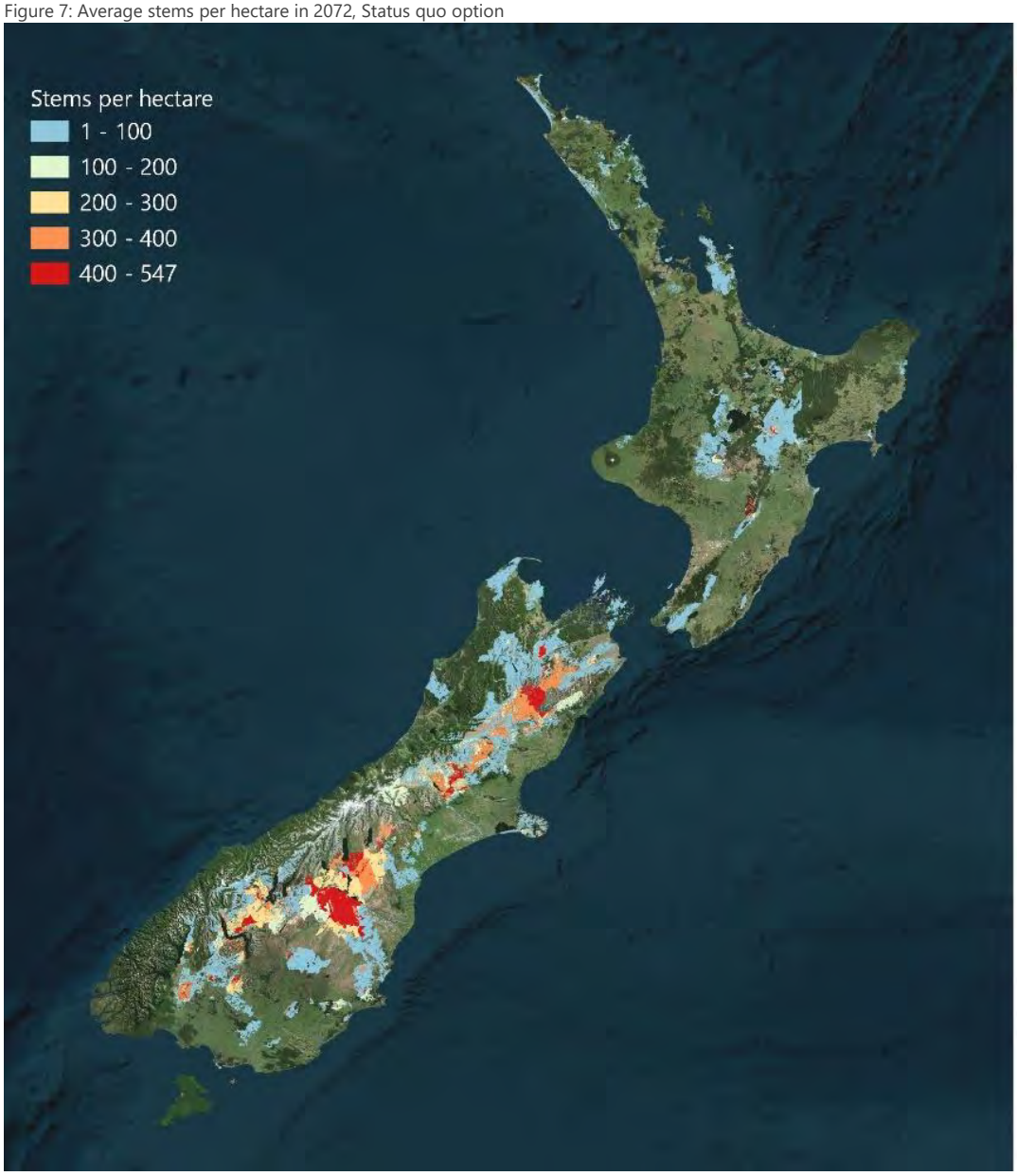
4.1.2 Future spread avoided

By controlling existing infestations, we avoid future spread and densification. Maps of the current infestation and the infestation following control under each of the options are presented below. The results are marked, particularly the difference in coverage between the minimum and status quo options.

Figure 6: Current average stems per hectare

Source: Sapere Analysis in conjunction with Landcare Research

Figure 7: Average stems per hectare in 2072, Status quo option



Source: Sapere Analysis in conjunction with Landcare Research

Figure 8: Average stems per hectare in 2072, Minimum option

Source: Sapere Analysis in conjunction with Landcare Research

Figure 9: Average stems per hectare in 2072, Intermediate option

Source: Sapere Analysis in conjunction with Landcare Research

Figure 10: Average stems per hectare in 2072, Maximum option

Source: Sapere Analysis in conjunction with Landcare Research

5. Calculation of benefits

This section steps through the benefits from control of wilding conifers. We outline the volumes, values and assumptions used to arrive at the result.

5.1 Productive land use

Invasion of wilding conifers reduces the productive potential of land. Spread occurs most readily on ungrazed land with low vegetation density, and is least likely to occur in dense vegetation, or where intensive grazing is practiced (Ledgard, 2001) (Buckley et al., 2005). In the absence of control, moderately or infrequently grazed grassland and pasture will be lost to wilding pine invasion, and economic potential with it.

5.1.1 Defining vulnerable productive grassland impacted by wilding invasion

We define the land most susceptible to production loss as low producing and high producing grasslands using the Ministry for the Environment's land use classifications 2016 (Ministry for the Environment, 2020). Sub classifications were used to identify grazed and ungrazed land. Other productive land use types like forestry and horticulture, are assumed to be less vulnerable to wilding conifer spread, and self-manage the impact of wilding spread on their operations.

Manaaki Whenua modelling of infilling and long distance spread is used to define invasion of low and high producing grasslands. Spread assumptions are determined by land cover and grazing intensity and use establishment rates derived from (Buckley et al., 2005). Based on this modelling, we assume spread on intensively grazed land is zero and on all other grasslands the average population growth rate has been applied.

Grazing intensity is defined at a regional level using Statistics NZ Agricultural Census data. Regions with an average sheep per hectare of 8 or higher across land dedicated to sheep farming are considered to have intensive sheep farming.

Table 9: Grazing intensity, sheep per hectare by region

Region	Grazing Intensity	Sheep per ha
Auckland	Low	6
Bay of Plenty	High	8.3
Canterbury	Low	4.2
Gisborne	High	9.1
Hawke's Bay	High	9.4
Manawatu-Whanganui	High	9.4
Marlborough	Low	3.1
Nelson	Low	..c*
Northland	High	9.1
Otago	Low	3.9
Southland	High	8.4
Taranaki	High	8.5
Tasman	High	8.5
Waikato	High	9.4
Wellington	High	9.1
West Coast	Low	5.1

Source: Sapere analysis using Statistics NZ data, *data supressed for confidentiality reasons

5.1.1.1 Adjustment for loss of vulnerable productive grassland to permanent forestry

An emerging issue is the impact of the Emissions Trading Scheme on land conversions. High carbon prices are driving sales and conversion of marginal productive grassland into permanent forest. Since we have assumed the impacts of carbon credits and emissions balance out in the economy, we do not value this income. However, looking at recent land sales and conversions (Orme & Orme, 2021) as a percentage of all grasslands we estimate this affects less than one per cent of vulnerable productive land. Given the impacts are expected to grow as carbon prices increase, we have assumed no benefits would be gained on one per cent of vulnerable productive grassland.

5.1.2 Value of productive sheep & beef land

The value of productive grassland has been estimated by applying the earnings before interest, tax, and rent (EBITR) per hectare for sheep and beef farming. Beef + Lamb NZ recommend using EBITR as a measure of "earning power" (Beef + Lamb New Zealand, n.d.). The values we have applied for low and high producing grasslands are:

Figure 11: Values applied to low and high producing grasslands

Land Use Classification	Value per hectare, per annum
Low producing grassland	$52.89[4]
High producing grassland	$344.45[5]

Source: Beef + Lamb NZ: Sheep & beef farm survey

5.1.3 Production loss from invasion

We apply the following loss assumptions based on density class:

Table 10: Assumed production loss by density class

Density	Production loss
Outlier	2%
Sparse	20%
Intermediate	30%
Dense	100%

[4] 2020/21 estimated EBITR for Class 1 S.I. High Country New Zealand
[5] Mean EBITR for all Hard Hill Country and Hill Country classes

5.1.4 Productive land use benefits

The following shows the value of the additional benefits derived over 50 years under the four investment options:

Table 11: Productive land use benefits 50 year PV ($ millions)

Component	Status quo	Minimum	Intermediate	Maximum
Low producing sheep and beef	$121	$451	$492	$492
High producing sheep and beef	$12	$37	$48	$48
Loss of productive land due to ETS	-$1	-$5	-$6	-$6
Total Present Value	$132	$483	$534	$534

Source: Sapere analysis

5.2 Water yield benefits

The spread of wilding conifers reduces surface flows and aquifer recharge in water-sensitive catchments. Less water reduces the productive value derived from irrigation and hydro generators, and the use values enjoyed in outdoor recreation. Several studies have attempted to estimate the water yield reduction attributable to wilding conifer spread. When pastoral land becomes densely infested with wilding conifers, annual water yield reductions of between 30 – 81 per cent have been found[6]. Work undertaken by Scion found an average reduction during low-flow conditions of approximately 16 per cent across three South Island catchments in water-afforestation studies. Scion noted that for the purposes of estimating the water impact of wilding conifers, this value could be conservative as wilding conifer stands have a much higher interception effect, because of their rougher canopy surface. Wilding conifer stands can also grow in the upper reaches of catchments where plantation planting wouldn't and can therefore reduce low-flow yields more significantly. Water yield reduction in this CBA relies on the analysis of Manaaki Whenua, which uses the WATYIELD model (Fahey et al., 2010). Fahey's research found a 40 per cent reduction in mean annual flow with 2/3 of an experimental catchment planted in pines.

The previous CBA (Wyatt, 2018) evaluating phase two of the wilding conifer control programme found that impacts on water yields dominated the results. This remains the case for phase three of the control programme.

[6] Data from a number of catchment studies have shown that where pasture has been replaced by radiata pine forest, there was a reduction in annual surface water yields of 30-81%.

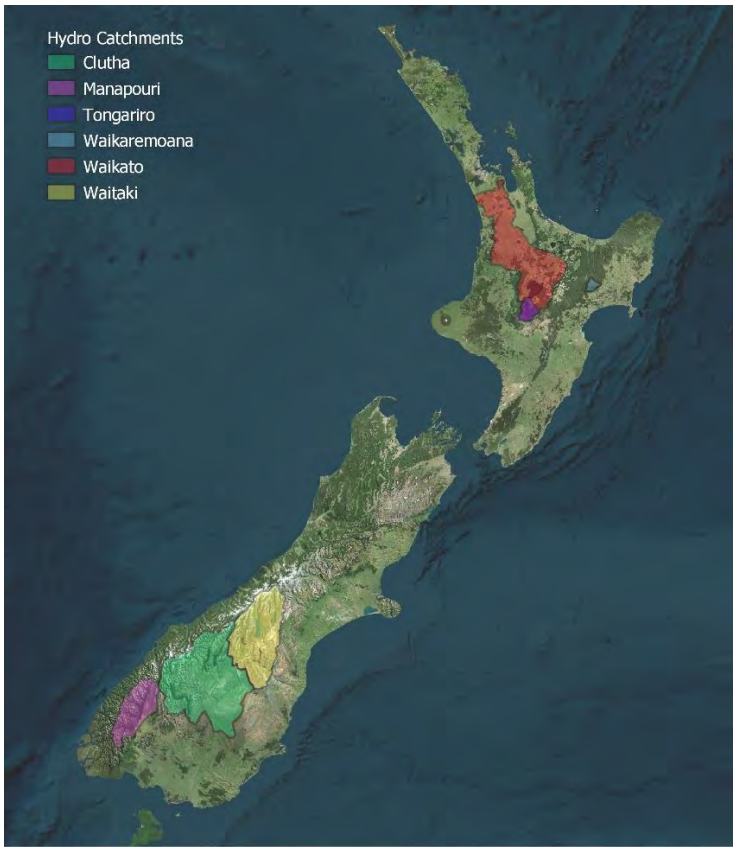
5.2.1 Hydro impacts

The spread of wilding conifers in hydro lake catchments can reduce water yields and therefore the electricity generating capacity of our hydro dams. This is a substantial economic cost. Additionally, it is worth noting that a reduction in the generating capacity of our hydro dams without an equal reduction in electricity demand, would see that demand met by alternative electricity generators. This would most likely be from non-renewable sources in the short term, gradually being replaced by renewable sources as New Zealand plans to move to 100 per cent renewable energy ('Labour Promises 100% Renewable Electricity Generation by 2030', 2020).

5.2.1.1 Water yield loss in hydro catchments

The impact of wilding conifer spread on hydro catchments was determined by combining Landcare Research analysis on the reduction in water yield attributable to wilding conifer spread, with a geospatial analysis of the catchments of hydro power generators. Catchments are determined using NIWA's River Environment Classification dataset, which includes all water segments in the country and their up and downstream relationships to each other. Catchments are determined by including all upstream nodes from selected hydro generation plants. A reduction in upstream water yields reduces the amount of water passing through a plant and therefore it's generating capacity. Figure 12 displays the extent of hydro catchments used in this analysis.

Figure 12: Hydro generator catchments



Source: Sapere analysis

5.2.1.2 Value of hydro generation

Consistent with the CBA undertaken for Phase two of the wilding conifer control programme, the hydro resource rent series produced by Statistics NZ is used to express the value of hydroelectricity catchments. This is broadly equivalent to the EBITR measure used to estimate productivity losses from land use changes and the value derived from hydroelectricity generation when calculating GDP.

Table 12: Resource rents for hydro catchments

Hydro catchment	Estimated annual value of hydro resource rent (2018, forecast to 2021)
Waitaki	$176,072,000
Waikato	$89,806,000
Manapouri	$118,911,000
Clutha	$91,768,000
Tongariro	$30,917,000
Waikaremoana	$7,826,000

Source: Statistics NZ

5.2.1.3 Hydro generation benefits by option

The benefits represent the additional water yield loss avoided by controlling the spread and densification of wilding conifers. The present value of controlling wilding conifer spread on hydro generation ranges from -$61 - $262 million over the next 50 years under the range of options assessed. The value of controlling wilding conifer spread in the Waitaki and Clutha catchments dominates results in the national model. This is consistent with expectations. The Waitaki catchment has the largest allocation of current resource rent of the catchments analysed and is vulnerable to wilding conifer spread due to the location of current infestation and land use choices within the catchment. This is clearly recognized by the NWCCP with the minimum option capturing the majority of the potential benefits of control within this catchment. The Clutha catchment has the third largest allocation of current resource rent and is similarly vulnerable to wilding conifer spread. Wilding conifer control under the status quo option is inadequate to prevent net hydroelectricity disbenefits from occurring. From the perspective of the Otago regional council, 97% of the Clutha catchment, and 12% of the Waitaki catchment are within the region, leading to large benefits derived from hydro generation in this area.

Table 13: PV of hydroelectricity benefits over 50 years ($ millions)

Hydro catchment	Status quo	Minimum	Intermediate	Maximum
Waitaki	$5.46	$32.23	$32.23	$32.23
Manapouri	-$0.32	-$0.28	-$0.22	-$0.22
Clutha	-$66.43	$39.15	$143.50	$143.50
Total benefits	**$61.30**	**$71.09**	**$175.51**	**$175.51**

Source: Sapere Analysis

5.2.2 Irrigation impacts

The spread of wilding conifers upstream from irrigated land can reduce water yields and the value derived from these irrigation systems.

Consistent with the previous CBA, the value of irrigation is determined at the regional level, extrapolating forward a 2014 *Value of Irrigation* study (NZIER & AgFirst Consultants NZ Ltd, 2014) to determine the value per hectare of irrigated land. This is then adjusted for the increase in irrigated land using an irrigated land area geospatial dataset created by Aqualinc Research Limited and adapted by Statistics NZ and the Ministry for the Environment. The estimated value obtained from irrigation for non-forestry activities is displayed in Table 14.

The regional value of irrigation for Otago is $26.4 million which includes 94,073 hectares of irrigated productive, non-forestry land.

Table 14: Value received from non-forestry irrigated land

Region	Regional value of irrigation (2022)	Irrigated hectares of productive, non-forestry land (2020)
Otago	$264,400,000	94,073

Source: Aqualinc Research, Ministry for the Environment, Statistics NZ, NZIER

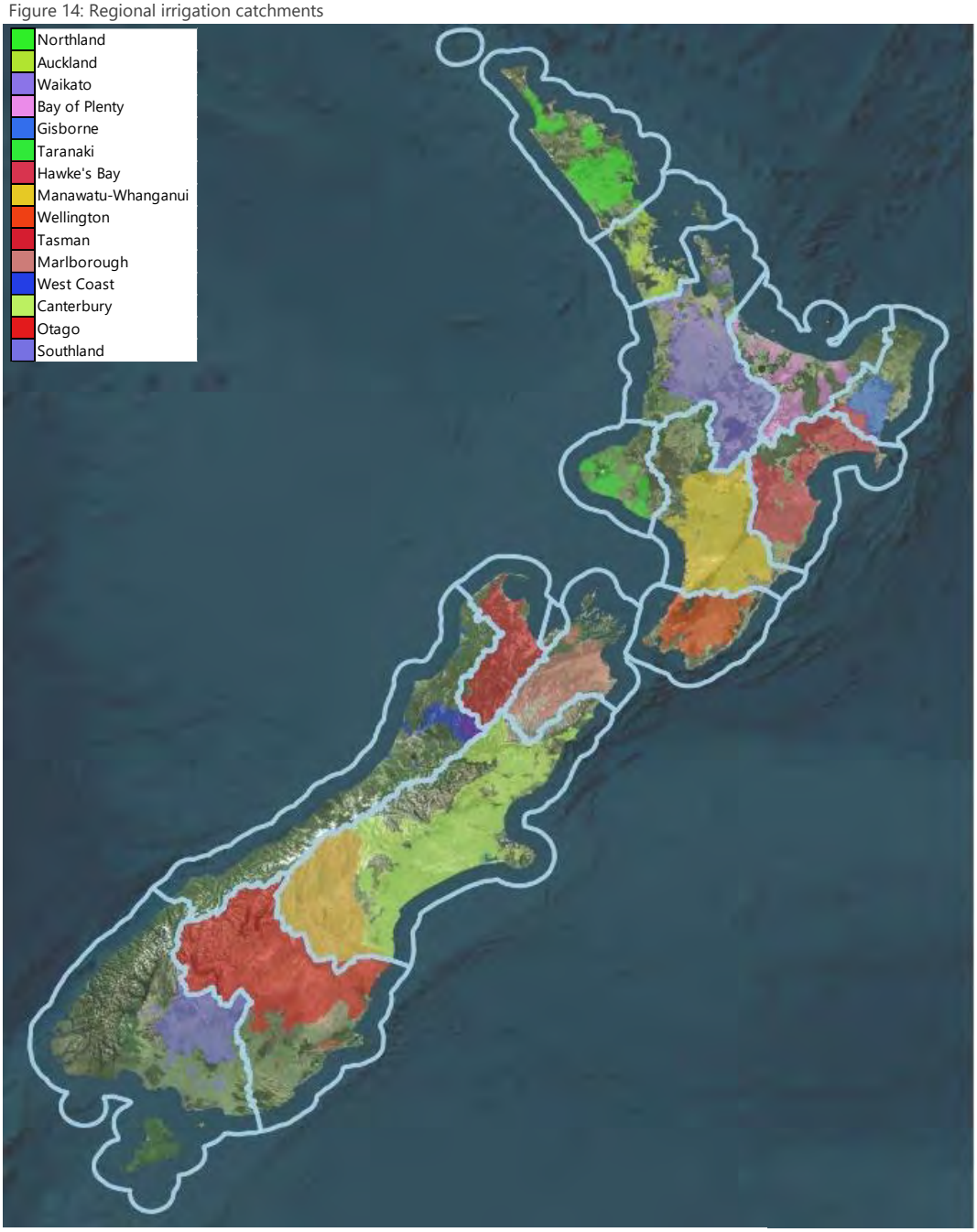
Irrigation values are highest in Canterbury, Otago and Marlborough. These areas are also at risk of wilding infestation. Canterbury and Otago in particular, are predicted to have large areas of dense infestation under the Status quo option.

Similar to the methodology used to determine hydro generation catchments, the water yield reduction from wilding conifer spread was determined using a combination of an irrigated land area geospatial dataset created by Aqualinc Research Limited, and NIWA's River Environment Classification dataset. A map of irrigated land (Figure 13) and their corresponding upstream catchments (Figure 14) are shown below. Some regional catchments overlap providing additional value from controlling spread in these areas. Notably, the orange shaded area in South Canterbury where the Canterbury catchment overlaps with the Otago catchment and the dark purple shaded area at the top of the West Coast where the West Coast and Tasman catchments overlap. Additionally, there is a small amount of irrigation value captured in Southland from controlling wilding pines in Otago.

Figure 13: Irrigated land areas, 2020

Source: Aqualinc Research Limited

Figure 14: Regional irrigation catchments



Source: Sapere analysis using Aqualinc Research Limited and NIWA's River Environment Classification data

Under the status quo option, a significant reduction in water yields will occur across irrigation catchments as wilding conifers spread. The benefits displayed in Table 15 represent the water yield loss avoided by controlling the spread of wilding conifers. Management Units in the Otago region cover 69% of the Otago region's irrigation catchment with the remainder in Canterbury and Southland. 2% of Canterbury's irrigation catchment, and 11% of Southland's is also covered.

The PV of controlling wilding conifer spread on irrigation ranges from $106.3 - $384.9 million over the next 50 years under the range of options assessed.

Table 15: PV of irrigation benefits over 50 years (millions)

Irrigation Catchment	Estimated proportion of catchment impacted	Status quo	Minimum	Intermediate	Maximum
Canterbury	2%	$0.2	$22.1	$25.7	$29.4
Otago	69%	$107.0	$193.0	$355.5	$355.5
Southland	11%	-$0.9	-$0.6	$0.0	$0.0
Total	-	**$106.3**	**$214.6**	**$381.2**	**$384.9**

Source: Sapere Analysis

5.3 Avoided cultural / biodiversity losses

Wilding conifer spread has a negative impact on cultural ecosystem services (biodiversity, recreation, aesthetic, and heritage values) as wilding conifers grow and outcompete natives for resources and quickly overtake natural landscapes. For cultural ecosystem services, a stated preference method can be used to monetise the values. Stated preference methods attempt to learn people's willingness to pay by directly asking them how much they value a certain environmental good or service. Careful survey design is key to the success of stated preference methods at eliciting willingness to pay information from participants. A recent willingness to pay study on wilding conifer control in New Zealand has been used as the basis for analysis on avoided cultural/biodiversity losses.

5.3.1 Monetised using non-market valuation (WTP) study

The non-market valuation study reveals the use and non-use values from wilding control such as scenery, recreation and the existence of ecosystems and species through Willingness to Pay (WTP) survey of households (Polyakov et al., 2021). We used this study's results through the value transfer methodology for monetisation of these benefits.

Polyakov's study looked at New Zealand households' willingness to pay for wilding conifer control using a choice experiment. Participants were presented with a choice set, which displayed different control scenarios across different regions combined with a dollar value displaying the cost to the participant's household under each option. The control scenarios were to allow wilding to spread, to contain infestation to its current extent, or to reduce the infestation.

The study controlled for:

- household incomes
- the region of the participant

- whether the participant had been hiking in the last five years
- the level of invasion within the participant's region
- whether they were financially impacted by Covid
- whether they lived in the city centre, suburbs or countryside.

By presenting choice sets with different control outcomes for different regions, the study also controlled for the distance from the participant's region to the invasion.

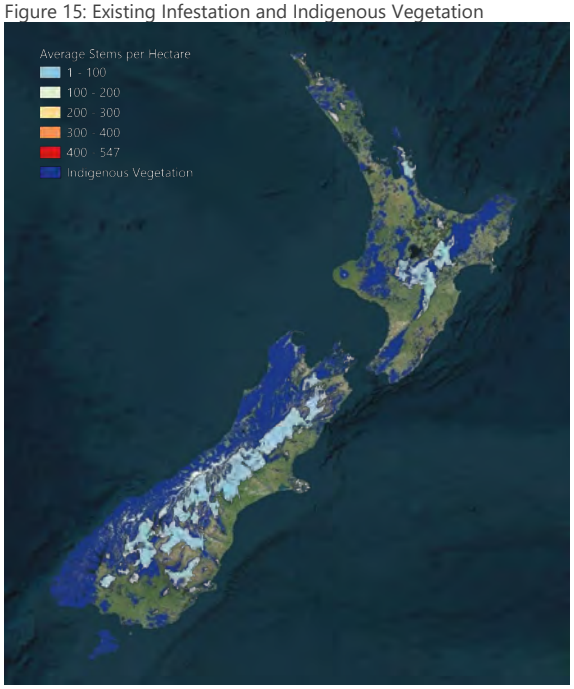
The average household is willing to pay $105 a year for five years to reduce the area infested with wilding conifers by 1,000 km^2 (Polyakov et al., 2021). This value diminishes the greater the areas controlled, the further away the household is from the control area and for low-income groups or those financially impacted by Covid-19. High income groups and rural households are willing to pay slightly more.

5.3.2 Area valued

The study only looked at control and invasion across areas of indigenous vegetation. This makes it useful for evaluating willingness to pay in the context of protecting and enhancing native biodiversity values.

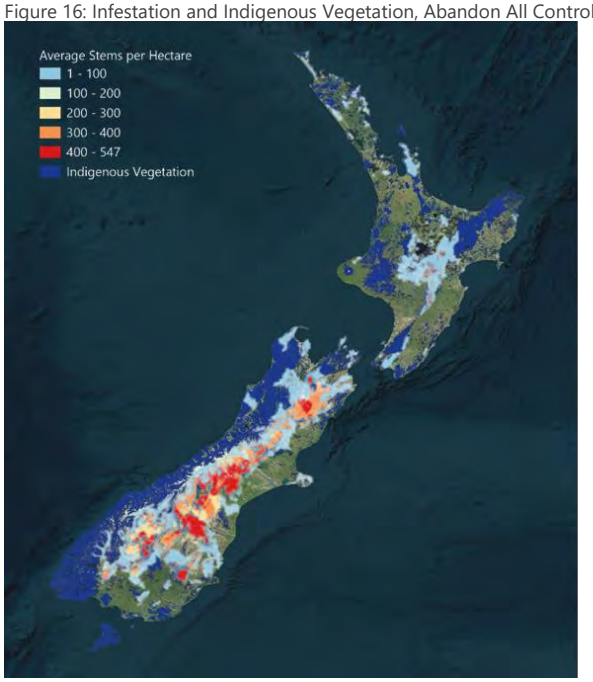
Polyakov selected landcover database classes 43 – 70 as 'indigenous vegetation'. The following figures show the current invasion overlaid on top of the areas considered indigenous vegetation and the invasion in year 50 under the different options. The purple shaded areas are indigenous vegetation with no wilding conifers present.

Figure 15: Existing Infestation and Indigenous Vegetation



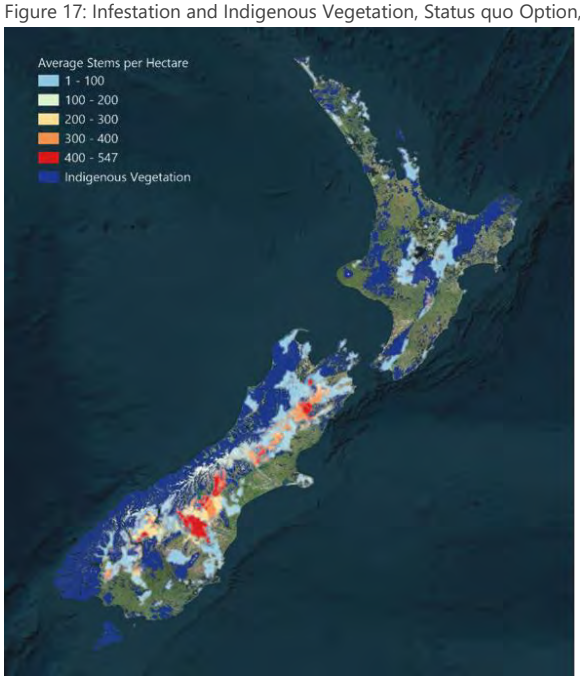
Source: Sapere Analysis, Landcare Research

Figure 16: Infestation and Indigenous Vegetation, Abandon All Control Activities, 2072



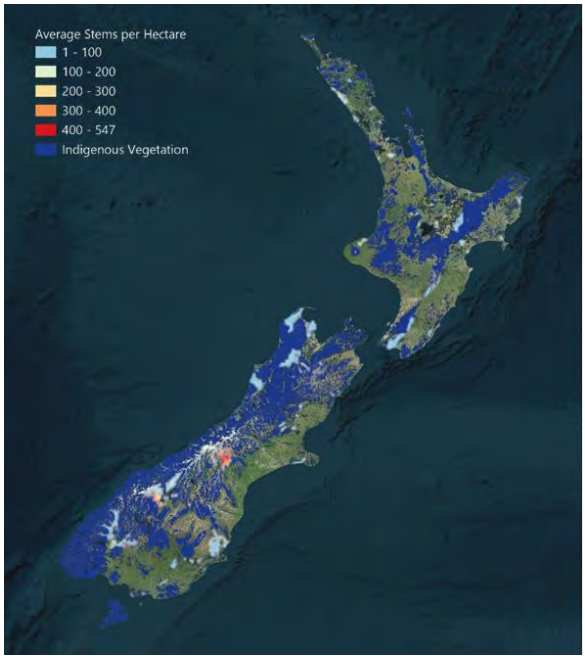
Source: Sapere Analysis, Landcare Research

Figure 17: Infestation and Indigenous Vegetation, Status quo Option, 2072



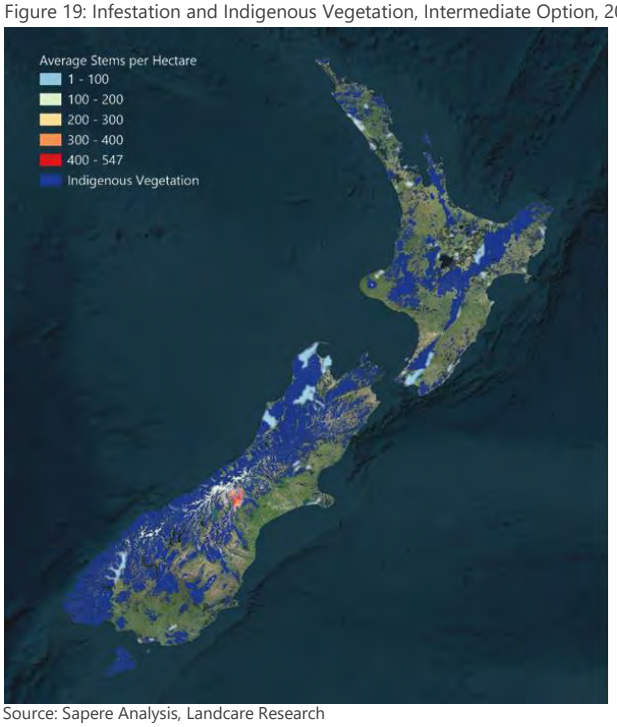
Source: Sapere Analysis, Landcare Research

Figure 18: Infestation and Indigenous Vegetation, Minimum Option, 2072



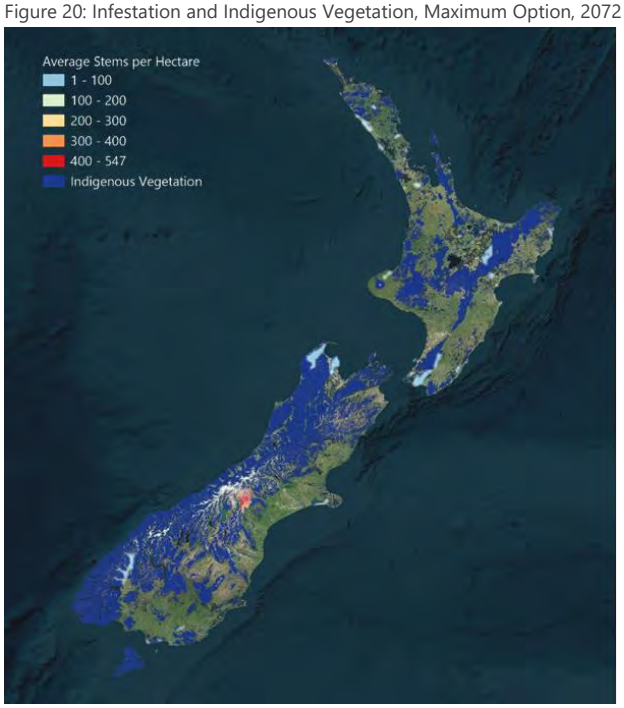
Source: Sapere Analysis, Landcare Research

Figure 19: Infestation and Indigenous Vegetation, Intermediate Option, 2072



Source: Sapere Analysis, Landcare Research

Figure 20: Infestation and Indigenous Vegetation, Maximum Option, 2072



Source: Sapere Analysis, Landcare Research

5.3.3 Values used per ha controlled

We use the logit model developed by Polyakov to estimate the total willingness to pay (each year for 5 years) for all households in New Zealand based on the areas controlled under the three options. This gives the following values:

Table 16: Value of cultural/biodiversity benefits based on WTP study ($ millions)

	Status quo	Minimum	Intermediate	Maximum
Willingness to pay by all NZ households each year for 5 years ($ millions)	$241	$469	$478	$478
Value per year ($ millions)	$31	$113	$115	$115
Present value over 50 years ($ millions)	$561	$2,063	$2,101	$2,101

Source: Sapere analysis

The total willingness to pay is each year for five years. This gives us the total non-market value for the use and non-use benefits arising from control of wilding conifers. We have assumed that cultural/biodiversity values are ongoing so the value of control per year is the total willingness to pay for 5 years spread across 50 years.

One limitation in using this study is that participants were not presented with a choice to remove wilding conifers completely. At most, an option to remove half of the existing infestation was presented. In addition, household's willingness to pay diminishes the greater the area controlled. As a result, in the national report we hit a ceiling at the minimum option and no additional value is generated under the intermediate or maximum option. This is because the hectares controlled under these options are greater than the scope of the WTP study. It would not be appropriate to extrapolate the model beyond its limits as this results in negative marginal willingness to pay values. This limitation meant that the benefits from avoiding cultural/biodiversity losses is understated. This problem is avoided when undertaking regional analysis however, and goes a long way to explaining the high BCRs found at the regional level.

5.4 Benefits from reduced wildfire risk and hazard

The likelihood of wildfires (fire risk) is determined by weather and a source of ignition, e.g. machinery, burn offs, rubbish fire. Fire behaviour (or fire hazard) is affected by the interaction between the topography of the land, fuel load (what is available to burn) and weather conditions.

The impact of wilding conifer spread on the cost of wildfires has not been quantified, but the commonly held view is that the establishment of wilding conifers increases fire risk and hazard. Wilding conifers typically replace grasslands which are associated with lower fire intensity and less damage to vegetation and property (V. Clifford et al., 2013).

Some control methods can also contribute to fire risk and hazard. Increases in fuel loads (either as dead standing or felled trees on the ground, or as more grass or scrub cover) will result in an increased chance of ignition, greater potential for fire spread and higher fire intensity. The length of

this increased flammability will depend on the amount of material left on the ground, the rate of decomposition, fuel moisture and other vegetation present (V. Clifford et al., 2013).

Wildfires fuelled by wilding conifers are rare, however, there are some notable examples, the 2008 Mt Cook wildfire covering 756 hectares was fuelled by dense stands of wilding pines (V. R. Clifford & Pearce, 2009), the Aoraki/Mt Cook fire in August-September 2020, which burnt through more than 3,100 ha of wilding forest and tussock on private land, and 2020 Lake Ohau fire covering 5043 hectares (Fire and Emergency New Zealand, 2021), which destroyed or damaged 53 houses.

In researching the potential costs avoided by controlling wilding conifers we spoke with staff at Fire and Emergency NZ (FENZ) and Scion Research. The impact of wilding conifers on wildfire costs is an area requiring further research but the costs would depend on specific and localised factors such as the control method, the characteristics of the area controlled, potential ignition sources and the presence of fire breaks. The resources committed to suppressing fires would also be weighed against the potential for damage, i.e. more would be put into suppressing a fire close to residential areas and sites of cultural significance. As a result, we have opted for a simple but defensible approach to valuing the benefits of control on wildfire costs.

For this CBA we assume the impact of wilding conifer control reduces the cost of wildfires by controlling trees before they spread and grow, preventing them from becoming a major fuel source. We do not assume that wildfire risk is removed entirely but as a result of control we assume benefits from a reduction in future suppression costs and associated damages.

5.4.1 Value of avoided costs

The value of avoided suppression costs and damages is based on an economic analysis of the cost of wildfires (BERL, 2009), inflation adjusted to 2021 dollars. Using this we get the following values:

Figure 21: Avoided wildfire costs

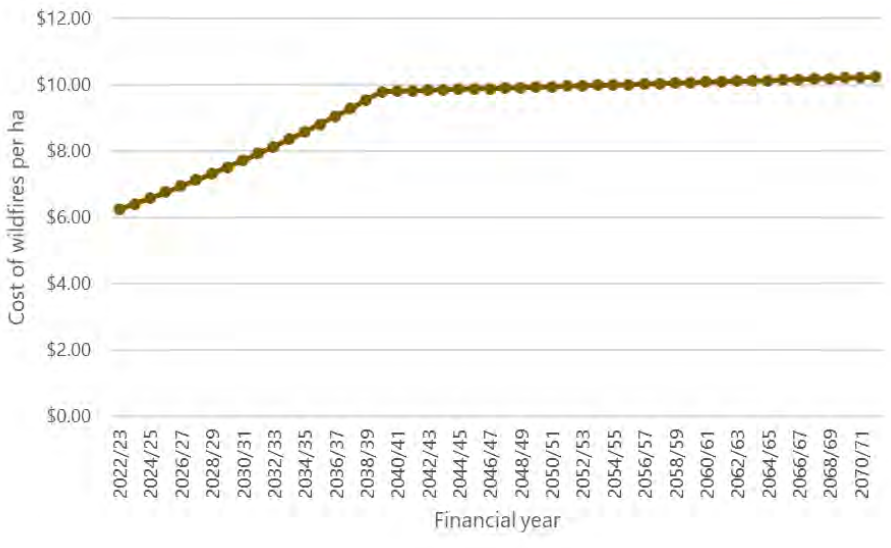
Component	Cost per ha per year
Suppression costs	$2.13
Cost of damages	$4.11
Benefit per hectare controlled per annum	$6.24

Source: BERL

5.4.1.1 The value is adjusted to reflect the increased risk of wildfires because of climate change

Climate change is also expected to have an impact on wildfires with an increase in the frequency and severity of wildfire events. Modelling shows a 70 per cent increase in very high and extreme fire risk days by 2040, increasing to 82 per cent by 2090 (Watt et al., 2019). The benefits per hectare controlled is adjusted to account for the expected change in very high and extreme fire risk days due to climate change as shown in Figure 22.

Figure 22 Benefits per hectare controlled adjusted for increased very high and extreme fire risk days due to climate change



Source: Sapere analysis

5.4.2 The benefits from avoided wildfire costs

We assume that all land controlled, plus the avoided spread, contributes to the avoided cost of wildfires. Applying the cost of fire to this area we derive the following benefits over 50 years from control activity on wildfire costs.

Figure 23: Present value of fire benefits by investment option ($ millions)

Component	Status quo	Minimum	Intermediate	Maximum
Avoided spending on wildfire suppression costs	$1.8	$26.7	$28.5	$28.5
Avoided spending on damages caused by wildfires	$3.5	$51.2	$55.0	$55.0
Proportion of costs caused by climate change	52.1%	50.0%	50.1%	50.1%
Total benefits (PV)	$5.3	$39.0	$83.5	$83.5

Source: Sapere analysis

The benefits from reduced fire risk range from $5.3 million over 50 years under the status quo option to $83.5 million under the maximum option. The impact of climate change risk is significant, accounting for fifty to fifty-two percent, or $2.7 - $41.8 million of the avoided costs.

5.5 Māori cultural values (qualitative)

The term cultural value has wide meaning and can include historic and aesthetic value of sites or landscapes, recreation, indigenous biodiversity, ancestral and spiritual values, people's sense of place and identity, kaitiakitanga (guardianship), and bequest value for future generations. This list is not exhaustive, but it highlights how difficult it is to simply define cultural value. In their report on non-market impacts of wilding conifers on cultural values Greenaway et al. use the definition:

> the collective norms and expectations that influence how ecosystems accrue meaning and significance to people (Greenaway et al., 2015)

For Māori, there are clear links between healthy ecosystems and people's cultural and spiritual well-being (Harmsworth & Awatere, 2013). The depth of Māori cultural values is well articulated in the introduction to Indigenous Māori Knowledge and Perspectives of Ecosystems:

> Indigenous Māori have an intricate, holistic and interconnected relationship with the natural world and its resources, with a rich knowledge base – mātauranga Māori – developed over thousands of years and dating back to life in Polynesia and trans-Pacific migrations. This ancestral traditional bond links indigenous Māori to ecosystems and governs how they see and understand ecosystems and ecosystem services (Harmsworth & Awatere, 2013).

In effect, some Māori values are deep rooted and accrue indefinitely so are not able to be adequately monetised in this CBA. Protection of waterway health (Te Mana o te Wai), native landscapes (whenua

ora) are also important in Te Ao Māori and at Iwi level, sustainable productive land use will also be of importance of many Iwi and Hapū. Some of these values have been included, through the monetised benefits of productive land use and water yields, fire risk and in biodiversity values. In their willingness to pay study, Polyakov et al estimate non-market values such as existence values of ecosystems and species resulting from wilding conifer control.

In the 2011 Wilding Conifer Status report it is noted that the impact on Māori cultural values has been low but could become significant should wilding spread reach a tipping point. Impacts described in this report included the loss of culturally significant sites and impact on water flows and health of waterways (Froude, 2011).

Cultural assessment models can be used to provide a cultural lens to policy and decision making on ecosystem projects. The Wilding Conifer Management Programme also recognises Māori cultural values in its activities. Iwi-involvement are involved in a number of projects and all conifer control programme applications ask for info on the Māori cultural values and to note where there is support or involvement of local Iwi or Hapū.

Qualitatively, the following Māori values can provide a basis for what is valued (Harmsworth & Awatere, 2013).

- Rangatiratanga: The right to exercise authority and self-determination within one's own iwi and/or hapū realm.
- Kaitiakitanga: Guardianship, stewardship, trusteeship, trustee. Kaitiakitanga is an important Māori value that bestows an obligation of stewardship on Māori to care for the environment.
- Whanaungatanga: Relationship, kinship, sense of family connection – a relationship through shared experiences and working together, which provides people with a sense of belonging.
- Wairuatanga: The immutable spiritual connection between people and their environments.
- Mātauranga: Māori/mana whenua knowledge and understanding.

6. Area for further research

Post-completion of this CBA, discussion with stakeholder groups revealed areas of further research that could complement this analysis.

Economic value from harvesting wildings: some value is generated from harvesting wilding logs and biomass. Incorporating this effect would reduce the net costs of clearing wildings in areas where it is practical, further increasing the BCR.

Slope stability, flooding intensity and root system aquifer retention impacts: clearing trees has environmental impacts regardless of whether the tree is a 'pest' or not. Wilding conifers do provide some environmental benefits which would be lost if land is transitioned to another, non-forestry use. Monetising and incorporating these benefits of wilding pines would decrease the net benefits from clearing wildings in some areas.

Wider biodiversity impacts: as a function of limitations discussed in the body of the report, as a measure of biodiversity, this report has only considered the impact of wilding conifers on areas of native vegetation.

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For more information, please contact:

David Moore
Phone: +64 4 915 7590
Email: dmoore@thinkSapere.com

Wellington	Auckland	Sydney	Melbourne	Canberra
Level 9 1 Willeston Street PO Box 587 Wellington 6140	Level 8 203 Queen Street PO Box 2475 Shortland Street Auckland 1140	Level 18 135 King Street Sydney NSW 2000	Level 5 171 Collins Street Melbourne VIC 3000	PO Box 252 Canberra City ACT 2601
P +64 4 915 7590 F +64 4 915 7596	P +64 9 909 5810 F +64 9 909 5828	P +61 2 9234 0200 F +61 2 9234 0201	P +61 3 9005 1454 F +61 2 9234 0201 (Syd)	P +61 2 6100 6363 F +61 2 9234 0201 (Syd)

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9.2. State of Pests including Rabbit night counts

Prepared for:	Environmental Implementation Committee OPS2325
Report No.	Environmental - Control of Pests
Activity:	
Author:	Sarah Irvine, Team Leader Environmental Implementation and Murray Boardman, Performance and Delivery Specialist
Endorsed by:	Gavin Palmer, General Manager Operations
Date:	8th November 2023

PURPOSE

[1] This report provides the results of the state of pest management in Otago, and an update on the state of pests in Otago for 2023 (attachment one).

EXECUTIVE SUMMARY

[2] The Otago Regional Pest Management Plan, 2019-2029 (RPMP) sets out the framework for how pest plants and animals specified in the plan will be managed in Otago over the ten-year duration of the plan.

[3] 46 species of plants and animals are listed as pests in the RPMP. The state of pest management for these 46 species is detailed in the report.

[4] This State of Pest Management in Otago, 2023 report combines the biosecurity inspection and monitoring data for 2022 -2023 into one document.

[5] It also records information against the principal measures used in the plan to achieve the objectives, including service delivery, advocacy and education, and collaboration.

RECOMMENDATION

That the Environmental Implementation Committee:

1) ***Notes*** *this report.*

2) ***Notes*** *that the Biosecurity State of Pest Management in Otago 2023 report is a baseline document which will be reported on an annual basis to the Environmental Implementation Committee.*

BACKGROUND

[6] Otago is the second largest region in New Zealand with a range of valuable ecosystems and biodiversity that can be threatened by pest plants and animals. The Otago Regional Pest Management Plan, 2019-2029 (RPMP) sets out the framework for how pest plants and animals specified in the plan will be managed in Otago over the ten-year duration of the plan.

[7] The Otago RPMP is prepared under the Biosecurity Act 1993 and identifies 46 species of plants and animals as pests due to the economic, social, cultural, or environmental threats they pose to the Otago region. The RPMP sets objectives, how these will be

achieved and monitored, and rules that are specific to each of the listed pest plant and animal species. The RPMP also empowers Otago Regional Council (ORC) to exercise the appropriate enforcement and funding provisions of the Biosecurity Act 1993.

[8] One or more pest management programme(s) are used to control pests listed in the RPMP. The types of programmes reflect outcomes in keeping with the extent of the invasion within the region and whether it is possible to achieve the desired control levels.

DISCUSSION

[9] To deliver and monitor the effectiveness of the RPMP, inspection and monitoring data is recorded and analysed. This State of Pest Management in Otago, 2023 report combines the biosecurity inspection and monitoring data for 2022-2023 into one document. It also records information against the principal measures used in the plan to achieve the objectives, including service delivery, advocacy and education, and collaboration.

[10] This document is intended to provide a useful summary for understanding the current state of pest management for biosecurity in Otago.

[11] It is envisaged that when the annual state of pest management in Otago report is provided there will be trends, we can determine based on the baseline information collected in this report.

[12] The future annual reports will determine progress against objectives in the Otago Regional Pest Management Plan 2019-2029 (RPMP).

[13] The annual report in the future will inform work programmes and the principal measures that are most appropriate to achieve the objectives in the RPMP.

CONSIDERATIONS

Strategic Framework and Policy Considerations

[14] Supports delivery of the Otago Regional Pest Management Plan 2019-2029. Also supports achieving environmental outcomes for Otago and aligns with the strategic direction for ORC.

Financial Considerations

[15] This work is both planned and budgeted within existing work programmes.

Significance and Engagement Considerations

[16] Nil

Legislative and Risk Considerations

[17] The Otago Regional Council's Regional Pest Management Plan 2019-2029 and associated Biosecurity Operational Plans have been prepared in accordance with the Biosecurity Act 1993. The Biosecurity Operational Plan is a legislative requirement of the Act and the information contained within the report has been collected to deliver on the Biosecurity Operational Plan.

Climate Change Considerations

[18] Nil

Communications Considerations

[19] The report will be made available on the ORC website.

NEXT STEPS

[20] Finalise the draft report.

[21] Implement the Biosecurity Operational Plan 2023-2024

[22] Develop a future annual report to start trend analysis for pests and present this back to the Environmental Implementation Committee.

ATTACHMENTS

1. State of Pest Management in Otago 2023 [**9.2.1** - 44 pages]

Draft – 26 October 2023

Biosecurity

State of Pest Management in Otago, 2023

Contents

Introduction 3
Pest Management Programmes 3
Exclusion Programme 5
African Feather Grass 5
Chilean needle grass 6
Egeria 7
False tamarisk 8
Hornwort 9
Moth Plant 10
Eradication Programme 11
Bennett's wallaby 11
Rook 13
Spiny Broom 14
Progressive Containment Programme 15
African Love Grass 15
Bomarea 16
Boneseed 17
Bur Daisy 18
Cape Ivy 19
Nassella tussock 20
Old Man's Beard 21
Perennial nettle 23
Spartina 24
White-edged Nightshade 25
Wilding Conifers 26
Sustained Control Programme 28
Gorse and Broom 28
Nodding thistle and Ragwort 30
Russell Lupin 32
Feral rabbits 33
Site-Led Programmes 42
Dunedin Site Led Programmes 42
Lagarosiphon Site Led Programme 44

Draft – 26 October 2023

Introduction

Otago is the second largest region in New Zealand with a range of valuable ecosystems and biodiversity that can be threatened by pest plants and animals. The Otago Regional Pest Management Plan, 2019-2029 (RPMP) sets out the framework for how pest plants and animals specified in the plan will be managed in Otago over the ten-year duration of the plan.

The Otago RPMP is prepared under the Biosecurity Act 1993 and identifies 46 species of plants and animals as pests due to the economic, social, cultural, or environmental threats they pose to the Otago region. The RPMP sets objectives, how these will be achieved and monitored, and rules that are specific to each of the listed pest plant and animal species. The RPMP also empowers Otago Regional Council (ORC) to exercise the appropriate enforcement and funding provisions of the Biosecurity Act 1993.

One or more pest management programme(s) are used to control pests listed in the RPMP. The types of programmes reflect outcomes in keeping with the extent of the invasion within the region and whether it is possible to achieve the desired control levels.

Pest Management Programmes

Exclusion

Aim: To prevent the establishment of the subject, or an organism being spread by the subject, that is present in New Zealand, but not yet established in the area.

Principle Measure: Absence of exclusion pest species

Eradication

Aim: To reduce the infestation level of the subject, or an organism being spread by the subject, to zero levels in an area in the short to medium term.

Principle Measure: Absence of eradication pest.

Progressive Containment

Aim: To stop a pest from spreading and/or contain it to a certain area.

Principle Measure: Area of infestation is reduced.

Sustained Control

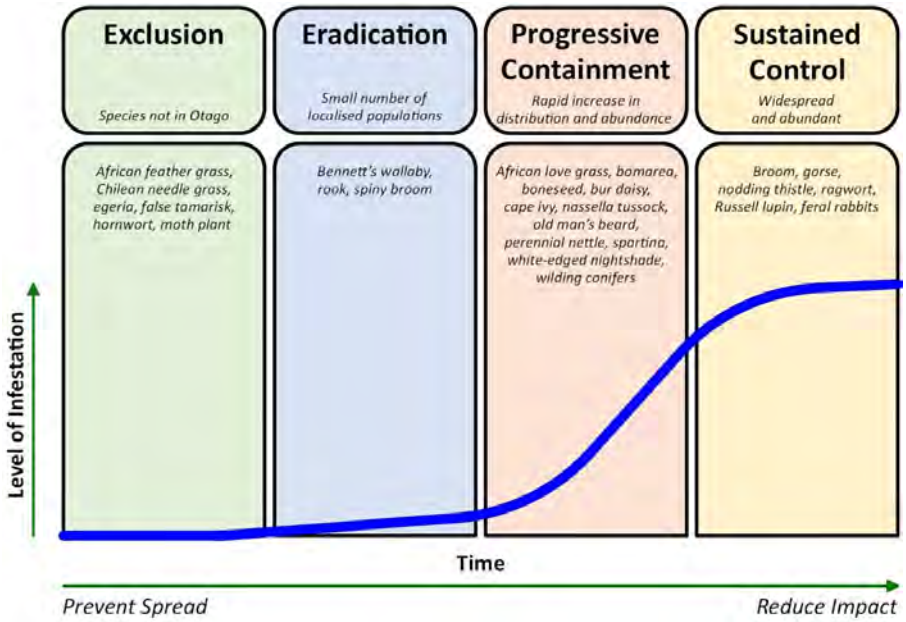
Aim: To provide for ongoing control of a pest to reduce its impacts on values and spread to other properties.

Principle Measure: The infestation area and density are not increasing.

Site-led

Aim: that the subject, or an organism being spread by the subject, that is capable of causing damage to a place is excluded or eradicated from that place, or is contained, reduced, or controlled within the place to an extent that protects the values of the place.

The diagram below is an example of the pest infestation curve which is used in New Zealand to inform the most effective management option for pests.



To deliver and monitor the effectiveness of the RPMP, inspection and monitoring data is recorded and analysed. This State of Pest Management in Otago, 2023 report combines the biosecurity inspection and monitoring data for 2022 - 2023 into one document. It also records information against the principal measures used in the plan to achieve the objectives, including service delivery, advocacy and education, and collaboration.

This document is intended to provide a useful summary for understanding the current state of pest management for biosecurity in Otago.

Exclusion Programme

African Feather Grass	***Cenchrus macrourus***	**Exclusion**
Plan Objective 6.1.3 Over the duration of the Plan, preclude establishment of African feather grass within the Otago region to prevent adverse effects on economic well-being and environmental values.		
African feather grass is a tussock-like grass forming dense clumps up to 2m high. The leaves are whitish green on top, distinctively ribbed, and dark green in colour underneath. The leaf edges feel rough when touched. The leaf sheath is covered in hairs. African feather grass produces fibrous roots and rhizomes that will form new shoots. It flowers from December to April. The flowers form a long narrow spike, straw yellow in colour, and sometimes have a purplish tinge. The seeds have bristles which allow them to become easily attached to clothing, animal hair or wool. The extensive root system makes it difficult to remove. It produces large amounts of seeds which are easily dispersed by wind and can be carried on clothing. The plant can spread quickly, crowding out other low growing plant species. It can also adversely impact production and economic values.	 *Credit: Weedbusters*	
 *Figure 1. from iNaturalist showing reports of African Feather Grass Cenchrus macrourus.*	**Summary data 2022/23** • No reports of African feather grass in Otago region. • Incursion Response Plan developed.	

<table>
<tr><th>Chilean needle grass</th><th>Nassella neesiana</th><th>Exclusion</th></tr>
<tr><td colspan="3">Plan Objective 6.1.3

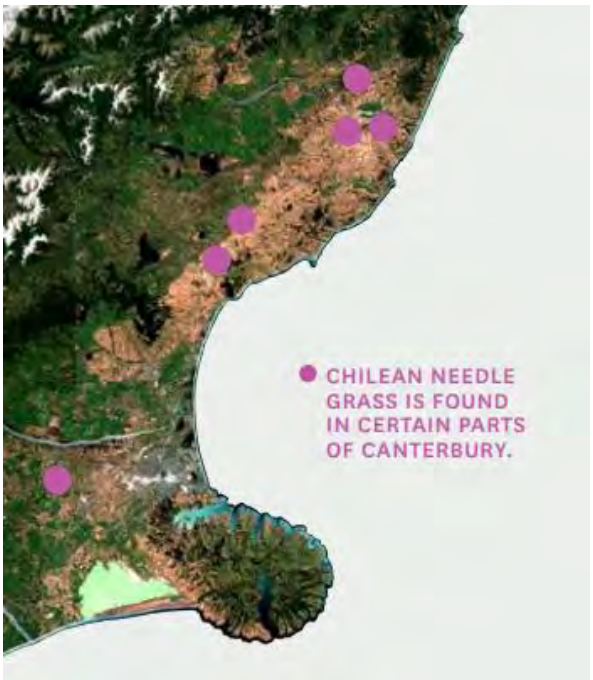
Over the duration of the Plan, preclude establishment of Chilean needle grass within the Otago region to prevent adverse effects on economic well-being and environmental values.</td></tr>
<tr><td colspan="2">Chilean needle grass is a tufted perennial plant growing up to 1m. Identification within grazed pasture is difficult. The flowers appear in October, and have a purple tinge and ripen into hard, sharp seeds with long twisting tails. These aid the seed in the penetration of the animal's skin and the soil. Plants will grow into dense stands and exclude other indigenous and exotic grassland species. It reduces the livestock carrying capacity of pastures due to the production of masses of unpalatable flower stalks. The sharp penetrating seeds injure livestock and result in the downgrading of wool, skins and hides. The seed can move through an animal's skin into body muscles, causing abscesses and the downgrading of carcasses. Chilean needle grass can cause adverse effects to pastoral production and economic well-being.</td><td> 
Credit: Environment Canterbury</td></tr>
<tr><td colspan="2"> 

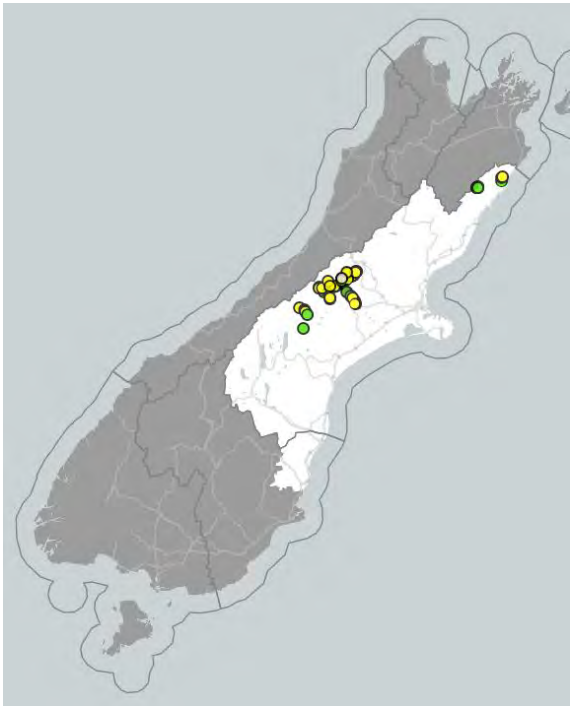
Figure 2. Chilean Needle Grass locations, Environment Canterbury.</td><td>Summary data 2022/2023

• Two reported potential sightings from the public
• Both sightings were investigated and found to not be Chilean needle grass.
• Incursion response plan developed.</td></tr>
</table>

Draft – 26 October 2023

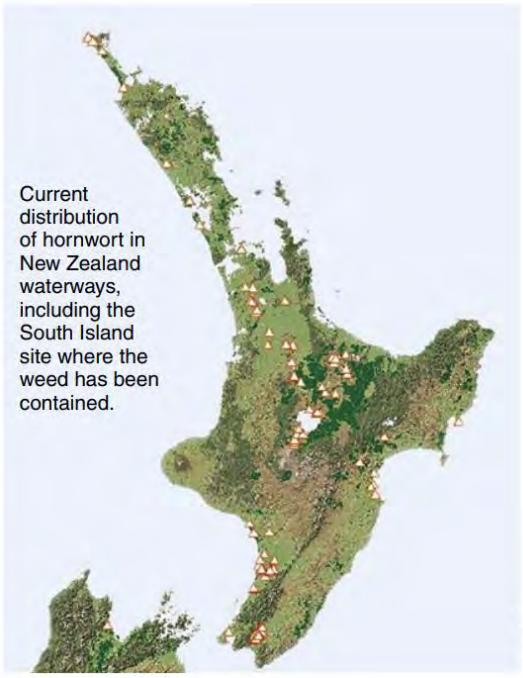
Egeria	***Egeria Densa***	**Exclusion**
Plan Objective 6.1.3 Over the duration of the Plan, preclude establishment of Egeria within the Otago region to prevent adverse effects on economic well-being and environmental values.		
Egeria is a slender, brittle aquatic plant with buoyant stems (3 millimetres diameter). Its linear, dark green leaves (15-30 by 4 millimetres) are in whorls of 4-6. From November to January, it produces white flowers (20 millimetres diameter) that are 3-petalled with yellow stamens, that sit on the surface of the water. As only male plants are found in New Zealand, no seed is set, however new plants form from stem fragments which break off. It grows in most still or slow-moving, highly lit submerged sites, and tolerates a wide range of temperatures. Large clumps can dislodge from the underwater meadows, causing flooding. Rotting vegetation stagnates water, killing fauna and flora. Egeria has adverse effects on environmental values. It impacts on other species by crowding them out, affects recreational values and has the potential to cause flooding.		 *Credit: Auckland Council*
 *Figure 3. Placeholder Egeria densa map from https://www.nzflora.info/factsheet/Weed/Egeria-densa.html*		**Summary data 2022/2023** • No reports of Egeria in the Otago region • Incursion response plan developed.

Draft – 26 October 2023

False tamarisk	***Muricaria germanica***	**Exclusion**
Plan Objective 6.1.3 Over the duration of the Plan, preclude establishment of false tamarisk within the Otago region to prevent adverse effects on economic well-being and environmental values.		
False tamarisk is a deciduous shrub (to 1.5m) with upright branches and small, narrowly triangular leaves (up to 5.5mm x 1.6mm) held close to its branches that appear bluish-green due to salt secretions on the underside. Small, pink, 5-petalled (3.2mm) flowers are in hanging clusters from January and are followed in February and March by small grey capsules containing seeds (0.7-0.9mm). The seeds are spread by wind and water. False tamarisk alters the natural environment of stony river beds by reducing the habitat available for birds that nest in braided riverbeds, while also providing cover for the predators that attack them.		 *Credit: Weedbusters*
 *Figure 4. False tamarisk locations, Environment Canterbury*		**Summary data 2022/2023** • No reports of false tamarisk in the Otago region • Incursion response plan developed.

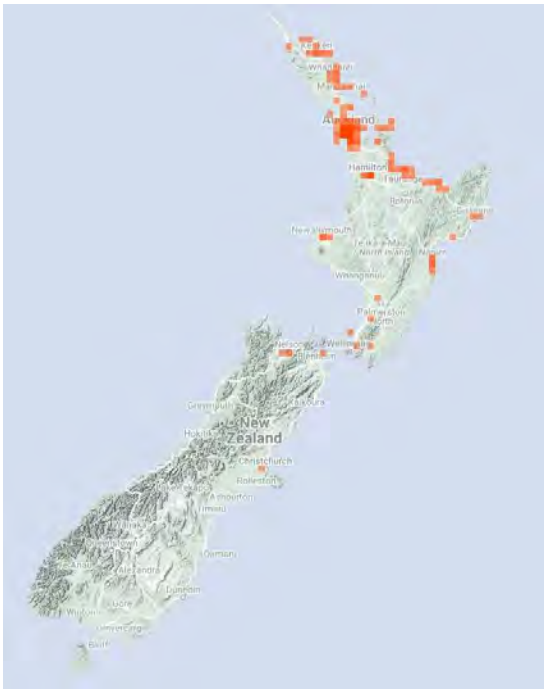
Draft – 26 October 2023

<table>
<tr><th>Hornwort</th><th>Ceratophyllum demersum</th><th>Exclusion</th></tr>
<tr><td colspan="3">Plan Objective 6.1.3

Over the duration of the Plan, preclude establishment of hornwort within the Otago region to prevent adverse effects on economic well-being and environmental values.</td></tr>
<tr><td colspan="2">Hornwort is a submerged, free-floating or lightly anchored perennial that grows in water up to 16 metres deep. Its stems (30-150 centimetres long) are floating or submerged, branched, stiff and brittle. Thin dark green leaves (1-4 centimetres long) in whorls of 7-12 are densely crowded at the stem tip, increasingly spaced down the stem, and equally forked once or twice into stiff tapering segments with teeth on the outer edge. It produces minute green or white flowers, but is not known to fruit in New Zealand. New plants can form from each piece of the easily broken stems. It rapidly invades water of varying clarity, temperature, light and nutrient level. Its dense growth habit crowds out native species, can block waterways, and rotting vegetation stagnates water, killing fauna and flora. This plant threatens most submerged plant communities, adversely affecting the environment and recreational values.</td><td> 
Credit: Auckland Council</td></tr>
<tr><td colspan="2"> 
Figure 5. Hornwort distribution, North Island, NIWA (https://niwa.co.nz/sites/niwa.co.nz/files/import/attachments/hornwort.pdf)</td><td>Summary data 2022/2023

• No reports of hornwort in the Otago region
• Incursion response plan developed.</td></tr>
</table>

Draft – 26 October 2023

Moth Plant	***Araujia hortorum***	**Exclusion**
Plan Objective 6.1.3 Over the duration of the Plan, preclude establishment of moth plant within the Otago region to prevent adverse effects on economic well-being and environmental values.		
Moth plant is a perennial, broad-leaved, herbaceous climber and can grow to over 5m tall. It has almost oblong leaves measuring 3-11cm, flowers profusely but fruit set is low. The choko-like fruits, as big as a fist, contain about 400 parachute-like seeds, and mature fruits normally remain for long periods on the vines. Moth plant can adversely impact environmental and human health values. It climbs over shrubs and small trees, smothering and breaking them down. It also spreads over the ground, smothering native plants of small stature and regenerating seedlings. Both fruits and stems exude a caustic milky sap when crushed or broken. This white latex is sticky, causes skin irritation in susceptible people and is poisonous to humans.		 *Credit: Weedbusters*
 *Figure 6. from iNaturalist showing reports of Moth Plant*		**Summary data 2022/2023** • No reports of moth plant in the Otago region Incursion response plan developed.

Eradication Programme

Bennett's wallaby	***Macropus rufogriseus rufogriseus***	**Eradication**
Plan Objective 6.2.3 Over the duration of the Plan, reduce all infestations of Bennett's wallaby to zero levels within the Otago region to prevent adverse effects on economic well-being and the environment.		
Bennett's wallaby is a marsupial that stands up to 80cm with a tail length around 62cm. They have a greyish-brown upper body, pale grey chest and belly and reddish-brown (rufous) colour on the shoulders. Solitary in nature, they commence breeding at about 24 months. Outside of the Otago region, Bennett's wallabies occupy approximately 450,000 hectares of land in South Canterbury. Despite efforts to contain this species within Canterbury, ingress into Otago has occurred. Wallabies cause significant adverse environmental effects. These include preventing regeneration of native bush, depletion of forest understorey, damage to tussock grasslands, and possible impacts on water quality. Adverse economic effects include damage to pasture and there is evidence of wallabies grazing on green feed crops. Wallabies also damage exotic forests, particularly at the establishment stage, with damage being more serious in areas bordering native vegetation.		 *Credit: Unknown*
Summary data 2022/2023		
• 332,500ha searched • 16 wallabies destroyed • 30, 283 hrs surveillance/control effort • 5 public events attended • Extensive media coverage via social, print, web, radio and television channels to raise awareness • 150 new 'Report Wallaby' signs deployed		

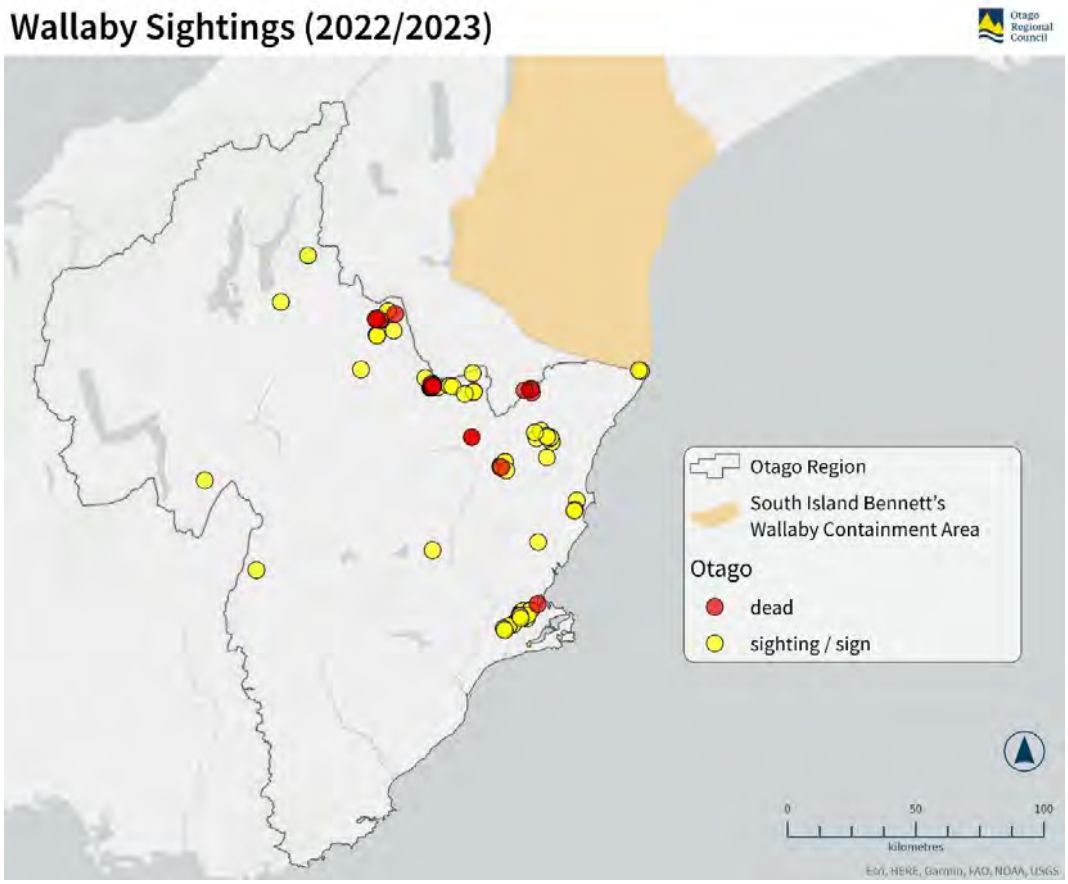
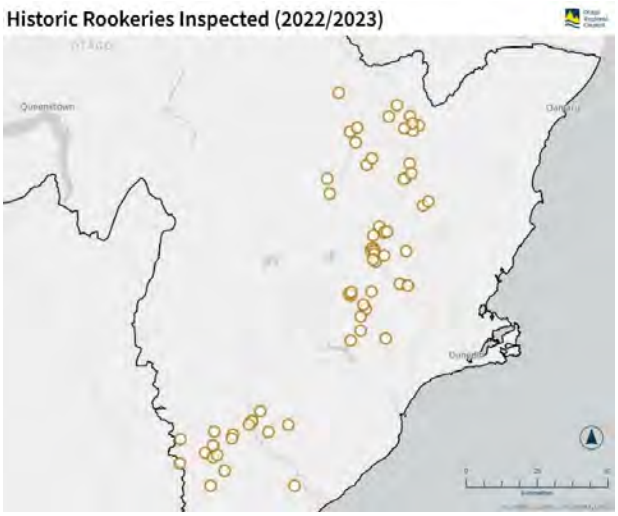
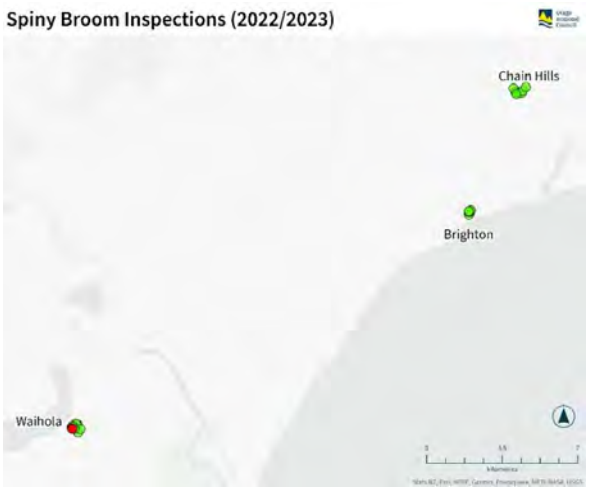


Figure 7. Wallaby location data from Wall-IS (wallaby information system).

Draft – 26 October 2023

Rook	***Corvus fugilegus***	**Eradication**
Plan Objective 6.2.3 Over the duration of the Plan, reduce all infestations of rooks to zero levels within the Otago region to prevent adverse effects on economic well-being and the environment.		
Rooks are large, glossy, purplish-black birds. They have a prominent, powerful beak with whitish patches of skin around the base. Rooks forage, often up to 20km daily, from either rookeries or communal winter roosts. During breeding (August - January), all birds live in rookeries, often the same sites as used in the previous breeding seasons. Rooks show a strong preference for foraging in fields of cereals at all stages of the crop, in recently cultivated land, and in stands of walnut trees. The effect of large flocks of rooks is to severely damage or destroy newly emerging crops and pasture. There are thought to be less than 40 birds remaining in Otago. Successful control has been achieved through a coordinated approach at times of favourable weather conditions and limited food sources. Unsuccessful control can lead to rooks becoming wary and much more difficult to control.		 *Credit: Unknown*
 *Figure 8. Historic rookery inspections.*		**Summary data 2022/2023** • 63 known rookeries were monitored during the spring of 2022. No rooks were sighted during annual surveillance. • Confirmed sighting of two rooks in Clarks Junction/Strath Taieri. • Five public sightings investigated with no rooks confirmed.

Draft – 26 October 2023

Spiny Broom	***Calicotome spinosa***	**Eradication**
Plan Objective 6.2.3 Over the duration of the Plan, reduce all infestations of spiny broom to zero levels within the Otago region to prevent adverse effects on economic well-being and the environment.		
Spiny broom is a much-branched spiny shrub <3m tall. Ridged stems with sharp spines. Dark or grey-green leaves, three leaflets hairy underneath and may occur in clusters. Bright yellow flowers followed by flattened seedpods. An invasive plant that is capable of rapidly colonizing and displacing pasture species or disrupting indigenous ecosystems. Spiny broom impacts on conservation values.		
 *Figure 9. Spiny Broom inspections (green are compliant, red non-compliant).*		**Summary data 2022/2023** • 31 sites inspected for spiny broom • Spiny broom was identified at two neighbouring properties in Waihola, with infestation removed at inspection. • No observed expansion in previous or current infestation areas

Draft – 26 October 2023

Progressive Containment Programme

<table>
<tr><td>African Love Grass</td><td>Eragrostis curvula</td><td>Progressive Containment</td></tr>
<tr><td colspan="3">Plan Objective 6.3.3

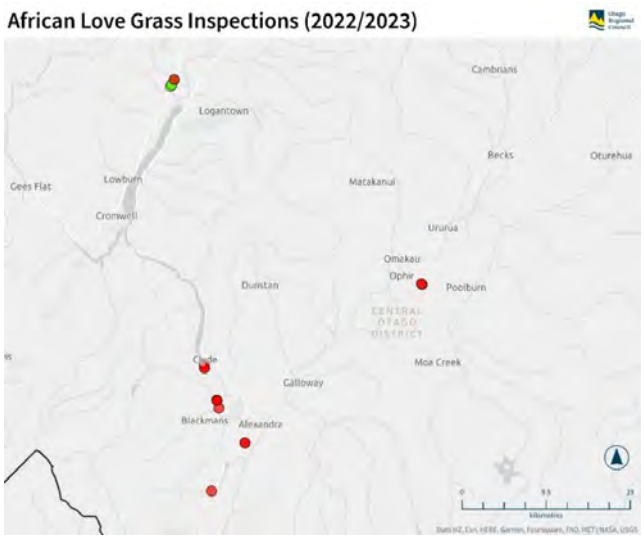
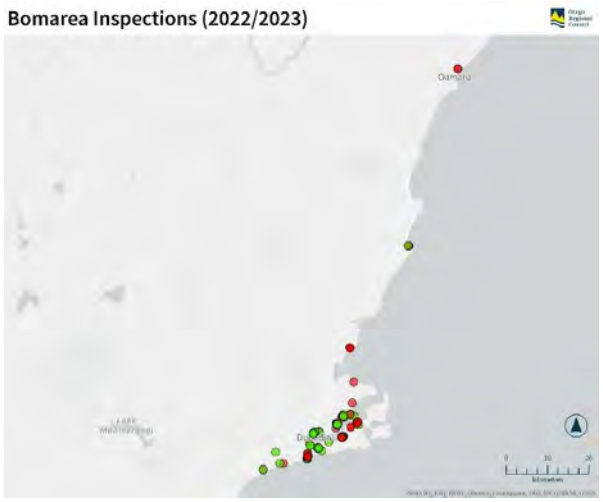
Over the duration of the Plan, progressively contain and reduce the geographic distribution or extent of African love grass at known sites within the Otago region to minimise or prevent adverse effects on economic well-being and the environment.</td></tr>
<tr><td colspan="2">African love grass is a vigorous, clump-forming, perennial grass up to 1.5m tall. It is densely tufted with narrow leaves (harsh to touch) and usually curly at the tips. The leaves are bright green to blue-green (leaves turn bronze-red after a hard frost). It has fibrous roots, up to 50cm deep. The flower heads (panicles) are pyramid-shaped with small, white flowers. Its blackish, olive purple seeds are attached to arching stems over 1m long. Infestations are limited to 20 active sites across the Otago region. The plant is capable of rapidly invading bare and disturbed sites. Once established, it forms dense stands and suppresses other herbaceous species. It is a prolific seeder, has low palatability for grazing animals and is difficult to detect.</td><td> 
Source: Weedbusters</td></tr>
<tr><td colspan="2"> 

Figure 10. African Love Grass inspections (green are absent, red are present but controlled).</td><td>Summary data 2022/2023

• 21 inspections undertaken for African love grass.
• 18 inspections observed African love grass to be present. Infestations grubbed at 12 inspections.
• No observed expansion in previous or current infestation areas</td></tr>
</table>

Draft – 26 October 2023

Bomarea	***Bomarea caldasii B. multiflora***	**Progressive Containment**
Plan Objective 6.3.2 Over the duration of the Plan progressively contain and reduce the geographic distribution or extent of bomarea at known sites within the Otago region to minimise or prevent adverse effects on economic wellbeing and the environment.		
Bomarea is a shade tolerant, multi-stemmed vine that arises from short underground rhizomes, which bear numerous tubers. The flowers are clumped in a dense, pendulous bunch of 15 to 20. The flowers are reddish on the outside and yellow with red spots on the inside and develop into capsules about 2cm in diameter. When ripe, they split open to reveal bright fleshy orange seeds, which can be dispersed over long distances by birds. Known to be present, or has been present, across 650 properties in Dunedin City, Otago Peninsula, and West Harbour areas. The vines grow into the forest canopy, forming large masses, which overtop and smother supporting trees. Large infestations can alter light levels in forests, kill mature trees and prevent seedlings from establishing.		 *Credit: Kirk Robertson*
 *Figure 11. Bomarea inspections (green are absent, red are present)*		**Summary data 2022/2023** • 142 inspections undertaken with 52 inspections showing bomarea to be present. • 35 re-inspections with 17 clear of bomarea.

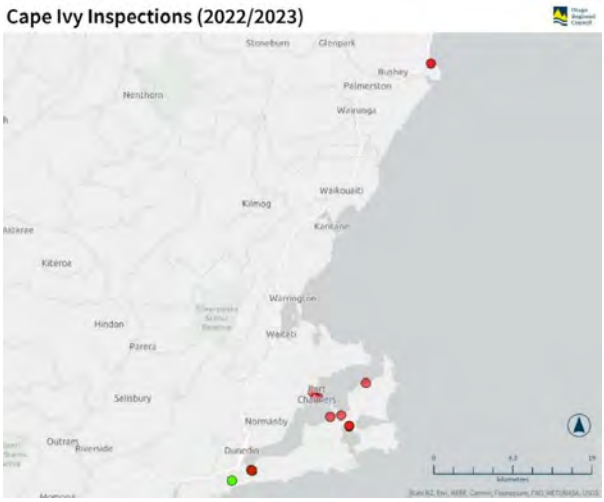
Draft – 26 October 2023

Boneseed	***Chrysanthemoides monilifera***	**Progressive Containment**
Plan Objective 6.3.2 Over the duration of the Plan progressively contain and reduce the geographic distribution or extent of boneseed at known sites within the Otago region to minimise or prevent adverse effects on economic wellbeing and the environment.		
Boneseed is an evergreen shrub reaching up to 3m tall. The leaves are dull green, toothed and covered with a cottony down. Daisy-like flowers are produced in bright yellow clusters from late winter until late summer. Up to 50,000 seeds per plant can be produced in one year and can remain viable for up to 10 years. Seed dispersal occurs locally by birds and by water. Boneseed is established in several sites in and around Dunedin including Portsmouth Drive, Forbury, Port Chalmers, and Aramoana and at Taieri Mouth and Moeraki. A tolerance of dry, infertile soils allows boneseed to colonise and establish easily in coastal areas. Boneseed's vigorous growth will displace desirable plants, shade out native seedlings and reduce public access to coastal and beach areas. It is highly flammable and will regenerate prolifically after fire. It can cause adverse effects to environmental and recreational values.		 *Credit: Weedbusters*
 *Figure 12. Boneseed inspections (green are absent, red are present).*		**Summary data 2022/2023** • 72 inspections undertaken with 24 inspections showing boneseed to be present. • 11 re-inspections with six clear of Boneseed. • ORC Control of plants May 2023.

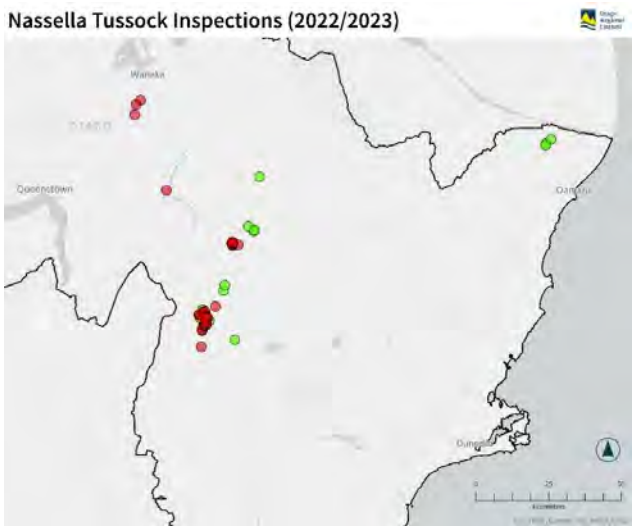
Draft – 26 October 2023

Bur Daisy	***Calotis lappulacea***	**Progressive Containment**
Plan Objective 6.3.2 Over the duration of the Plan progressively contain and reduce the geographic distribution or extent of bur daisy at known sites within the Otago region to minimise or prevent adverse effects on economic wellbeing and the environment.		
Bur daisy is a small, perennial herb (up to 40cm tall and 1m in diameter) with many fine, green branches. Its green, thin (almost linear) leaves are fairly insignificant. The plant produces small, pom pom -like clusters of bright yellow flowers for most of the year, but these are most prolific over the summer. Flowers develop into very hard, brown burs, covered in tiny hooks. This species is found on one 10-hectare block of land at an active site near Georgetown in the Waitaki Valley. Bur daisy is a serious threat to pastoral farming, particularly causing wool contamination. Left uncontrolled, bur daisy replaces other plant species. It produces many seeds that are quickly spread by stock movement and remain viable for many years.		 *Credit: Kirk Robertson*
 *Figure 13. Bur Daisy inspections.*		**Summary data 2022/2023** • Three inspections undertaken for Bur daisy. All three inspections observed Bur daisy to be present. • One re-inspection with Bur daisy still present

Draft – 26 October 2023

Cape Ivy	***Senecio angulatus***	**Progressive Containment**
Plan Objective 6.3.2 Over the duration of the Plan progressively contain and reduce the geographic distribution or extent of cape ivy at known sites within the Otago region to minimise or prevent adverse effects on economic wellbeing and the environment.		
Cape ivy is a scrambling perennial, often forming a dense tangled shrub 2 -3m tall, with wiry to woody stems that are sparingly branched. Very fleshy, leathery leaves have 1 -3 coarse serrations on each side, and the uppermost leaves are smaller, narrower and occasionally smooth edged. Dense clusters of yellow flowers (11mm diameter) are produced from March to August, followed by fluffy seeds. The plant produces many long -lived seeds that are dispersed a long way from parent plants. Moderate growth rate and layering stems, scrambles over shrubs and ground, forms dense, tall thickets. Tolerates salt, wind, drought, semi -shade and damage. It is found mainly in the Dunedin City and Otago Peninsula areas at 65 active sites. Wind spreads the seed, and seed and fragments are spread in dumped vegetation and soil movement. Cape ivy smothers ground and low -growing plants to 3m tall, forming dense, long -lived mats that prevent the establishment of native plant seedlings. Coastal, rocky areas, cliffs, bush edges, regenerating lowland forests and inshore islands are at risk from this plant.		 *Source: Weedbusters*
 *Figure 14. Cape Ivy inspections (green are absent, red are present).*		**Summary data 2022/2023** • 15 inspections undertaken with 13 inspections showing Cape Ivy to be present. • 11 re-inspections with two clear of Cape Ivy.

Draft – 26 October 2023

Nassella tussock	***Nassella trichotoma***	**Progressive Containment**
Plan Objective 6.3.2 Over the duration of the Plan progressively contain and reduce the geographic distribution or extent of nassella tussock at known sites within the Otago region to minimise or prevent adverse effects on economic wellbeing and the environment.		
Nassella tussock is a tufted, perennial, tussock grass with a swollen stem. Its fine, tightly rolled, light green or yellowish -green leaves feel needle -like and very tough when fingers are run along the leaf. The plants are erect when young but slightly drooping with age and grow up to 70cm high and 80cm wide. Flowering usually commences in October and is characterised by purplish tinge. Each mature plant can produce up to 100,000 seeds per year. Roots are deep, matted and fibrous. They have been found growing 1.7m below the soil surface. It is currently known to be present in Roxburgh, Alexandra, Cardrona and Waitaki Valley areas. Nassella tussock adversely affects production values due to reduced pasture quality and it also affects environmental values by displacing native species in tussock grassland. It can be difficult to identify amongst other tussocks.		
 *Figure 15. Nassella Tussock inspections (green indicates compliance, red indicates non-compliance)*		**Summary data 2022/2023** • 61 inspections undertaken with 48 inspections showing Nassella tussock to be present. • Six re-inspections with two clear of Nassella tussock. • Collaboration with Wai Wanka for control of some infestation areas of the Cardrona. • ORC removal of plants from confirmed sites.

Draft – 26 October 2023

Old Man's Beard	***Clematis vitalba***	**Progressive Containment**

Plan Objective 6.3.2

Over the duration of the Plan progressively contain and reduce the geographic distribution or extent of old man's beard at known sites within the Otago region to minimise or prevent adverse effects on economic wellbeing and the environment.

Old man's beard is a deciduous, perennial, climbing, layering vine to 20m tall with very long, woody stems with six prominent ribs (appear as furrows in older vines) and pale, easily rubbed-off bark. Leaves are arranged in opposite pairs on the stems and are made up of five (sometimes three) widely spaced, thin, papery leaflets. Creamy white, fragrant flowers (2-3cm diameter) are produced from December to May, followed by grey, hairy seeds (2-3mm long) with distinctive white plumes (3-4cm long) in dense, fluffy clusters persisting over winter (hence the 'old man's beard'). It is found in exotic forest, native forest remnants, shelterbelts and hedgerows, waste ground, on riverbanks and in gardens. The plant is known to infest 2600 urban properties across the region and is known to occupy several hundred hectares of rural land, riverbeds and margins across the region. It is capable of smothering and killing all plants to the highest canopy and prevents the establishment of native plant seedlings. Its seeds are both wind and water borne.

Summary data 2022/2023

- 638 inspections undertaken with 457 inspections showing Old man's beard to be present.
- 197 re-inspections with 87 clear of Old man's beard
- Biocontrol

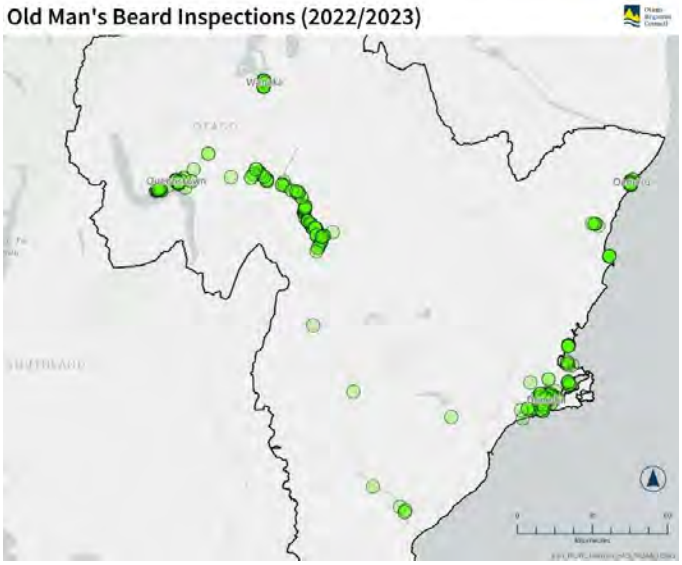


Figure 16. Old man's beard inspections

Draft – 26 October 2023

Biocontrol Agents for Old Man's Beard

The following old man's beard (OMB) biological control agents are known to be present in Otago:

OMB Gall Mite; OMB Sawfly; OMB Leaf Miner; OMB Leaf Fungus

Figure 17. OMB gall mite release site (2021) and mite presence (2023).

Old Man's Beard Gall Mite

Source: Kirk Robertson, ORC Biosecurity Officer

OMB Leaf miner damage

Draft – 26 October 2023

Perennial nettle	***Urtica dioica***	**Progressive Containment**
Plan Objective 6.3.2 Over the duration of the Plan progressively contain and reduce the geographic distribution or extent of perennial nettle at known sites within the Otago region to minimise or prevent adverse effects on economic wellbeing and the environment.		
Perennial nettle can grow up to 1.5m high. Its stems are woody, its flowers are green and its leaf is a lighter colour green than common stinging nettle (*Urtica urens*). It grows taller than common stinging nettle and it has an extensive system of underground rhizomes, whereas common nettle does not have rhizomes. The seeds are 1-1.5mm long, flat, oval and yellow to greyish in colour. Its underground rhizomes can spread 2.5m in a season. It is a particular problem in South Otago mainly Balclutha, Lawrence and Clydevale (along the Clutha River). The sting causes itching and burning which may last for several days. Animals shy away from the plant because of its stinging hairs. Perennial nettle's extensive system of underground rhizomes, and its ability to form tall dense stands means it can easily invade paddocks and dominate good pasture. It tolerates a wide range of conditions, soil types and localities from shade and damp, to very dry. It can be found in pastures, in areas where stock shelter or congregate, waste areas, river banks, roadsides and old house sites.		 *Credit: Kirk Robertson*
 *Figure 18. Perennial Nettle inspections.*		**Summary data 2022/2023** • 10 inspections undertaken with seven inspections showing Perennial nettle to be present. • ORC removal of plants from confirmed sites.

Draft – 26 October 2023

Spartina	***Spartina spp.***	**Progressive Containment**

Plan Objective 6.3.2

Over the duration of the Plan progressively contain and reduce the geographic distribution or extent of spartina at known sites within the Otago region to minimise or prevent adverse effects on economic wellbeing and the environment.

Spartina is a perennial estuarine sward grass, commonly 1m tall and growing in shallow saltwater. It has stiff, upright stems, originating from thick rhizomes. The stems have broad, pointed leaves from their base to the top, where several long fingers contain the seed. New growth occurs from either root pieces or seed. Shoots rapidly sprout from belowground rhizomes, while the seed falls into the water and floats away. Scattered infestations are known to occur in Pleasant River Estuary, Karitane Estuary, the Lower Taieri Gorge and Catlins Lake. Colonies of spartina form dense grassy clumps, and these can spread laterally from underground rhizomes, or by over ground side shoots (tillers). Within the estuarine area, vast meadows can form causing a build-up of sediment. This can increase the risk of flooding and alter the habitat for wading bird species and other estuarine flora and fauna.

Source: Kirk Robertson

Summary data 2022/2023

- Nine inspections undertaken with six inspections showing Spartina to be present.
- Two re-inspections with Spartina still present
- ORC control of plants at Waikouaiti estuary and part of Pleasant River estuary March 2023.

Figure 19. Spartina inspections.

Figure 20. Spartina control.

Draft – 26 October 2023

White-edged Nightshade	*Solanum marginatum*	Progressive Containment

Plan Objective 6.3.

Over the duration of the Plan progressively contain and reduce the geographic distribution or extent of white-edged night shade at known sites within the Otago region to minimise or prevent adverse effects on economic wellbeing and the environment.

White-edged nightshade is a quick growing perennial shrub that can grow up to 5m tall. The large woody stems and green oak-shaped leaves are covered in sharp spines. Its leaves have white veins on the upper surface and dense chalky-white hairs on the underside. In summer white or pale mauve flowers bloom in clusters at the end of branches. Green-yellow tomato-shaped berries grow on the ends of prickly stalks. It is confined to one site near Hampden, but is also known to have existed on Quarantine and Goat Islands in the Otago harbour. The shrub is well adapted to dry areas. Once established, it forms dense thickets that are impenetrable to stock. It also prevents the establishment of native understory on margins of native bush. White-edged nightshade adversely affects economic well-being and environmental values.

Source: Kirk Robertson

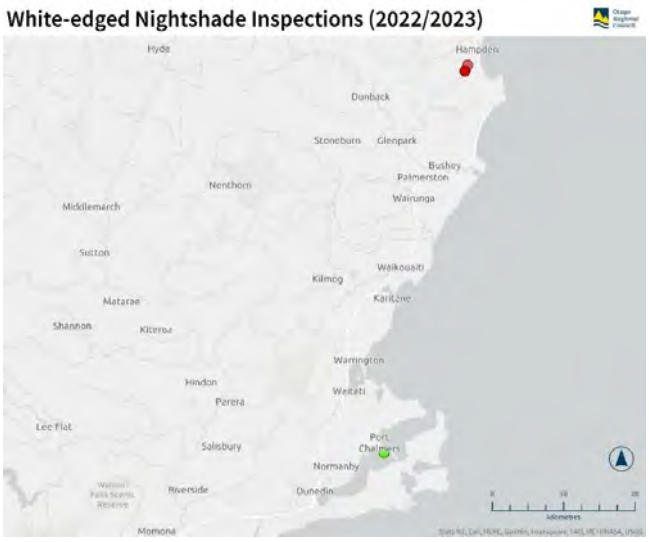


Figure 21. White-edged nightshade inspections.

Summary data 2022/2023

- Six inspections undertaken with five inspections showing White-edged nightshade to be present.
- Five re-inspections with White-edged nightshade still present
- ORC removal of plants from confirmed sites.

Draft – 26 October 2023

Wilding Conifers[1]	**Wilding conifers,**	**Progressive Containment**
Contorta, Corsican, Scots, Mountain, Dwarf Mountain Larch	Pinus contorta, P. nigra, P. sylvestris, P. uncinata, P. mugo Larix decidua.	

Plan Objective 6.3.4

Over the duration of the Plan, progressively contain and reduce the geographic extent of wilding conifers within the Otago Region to minimise adverse effects on economic well-being and the environment. This may involve the destruction of contorta, Corsican, Scots, mountain and dwarf mountain pines and larch.

Wilding conifers can have significant impacts on native ecosystems, particularly those with low-stature vegetation. Wilding conifers grow faster and taller than low-stature native plants and so can shade out many of these species. Where there is dense wilding conifer growth, this can lead to local extinction of native plant communities, the drying of wetlands and riparian areas, and resulting impacts on native fauna through the loss of habitat. Soil and soil fauna are also altered when wilding conifers replace native ecosystems.

Otago's iconic landscape is vulnerable to the invasion of wilding conifers. If not controlled, they would significantly change the landscape and impact on our recreational, hydrological and conservation values. Particularly at risk is our high country and tussock grasslands. The growing problem has been recognised for some years, and as a result, the Wakatipu Wilding Conifer Control Group and the Central Otago Wilding Control Group established themselves solely to fight wilding conifers. A National Wilding Conifer Control Programme has been developed and funded by government agencies, landowners, and local communities to address infestations.

Summary data 2022/2023

- 45,282 hectares of wilding pines cleared across the Queenstown Lakes and Central Otago Districts
- Facilitating delivery of the National Wilding Conifer Control Programme across Otago Wilding Conifer Management Units.
- Education to increase awareness of wilding conifer pest status.
- Development of the Otago Regional Wilding Conifer Strategy.
- Supporting the Whakatipu Wilding Control Group, Central Otago Wilding Conifer Control Group and Upper Clutha Wilding Tree Group to undertake control works.

[1]Wilding conifers are any introduced conifer tree, including (but not limited to) any of the listed species, established by natural means, unless it is located within a forest plantation, and does not create any greater risk of wilding conifer spread to adjacent or nearby land than the forest plantation that it is a part of. For the purposes of this definition, a forest plantation is an area of 1 hectare or more of predominantly planted trees. This also excludes existing planted conifers of less than 1ha, such as windbreaks and shelterbelts at March 2019.

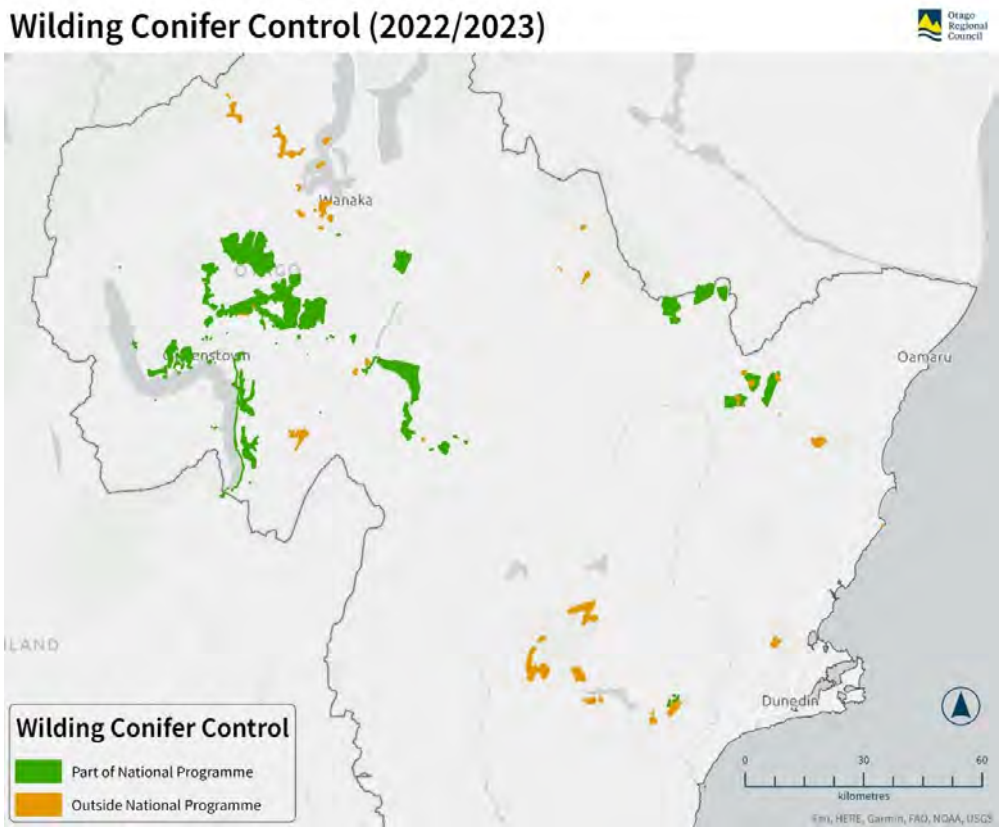


Figure 22. Wilding conifer control (NWCCP data).

Draft – 26 October 2023

Sustained Control Programme

<table>
<tr><th>Gorse and Broom</th><th>Ulex europeaus and Cytisus scoparius Teline monospessulana</th><th>Sustained Control</th></tr>
<tr><td colspan="3">Plan Objective 6.3.2

Over the duration of the Plan, implement sustained control of gorse and broom to ensure land that is free of, or being cleared of, gorse and broom does not become infested, to prevent adverse effects on production values and economic well-being.</td></tr>
<tr><td colspan="2">Gorse is a sharply spinous, woody, deeply rooted, leguminous perennial shrub. It grows up to 4m tall with thick stems. Seeds can be ejected up to 5m from pods and the plant may seed twice a year. Seed may survive in the soil for more than 50 years.</td><td rowspan="3"> 
Gorse
 
Broom
Source: Weedbusters</td></tr>
<tr><td colspan="2">Broom (common) is a leguminous, branched perennial shrub up to 2.5m tall with bright yellow flowers. Stems are green and woody, five ribbed and hairless. Dark ripened seedpods explode during summer, propelling hard seed up to 5m from the parent plant. Seed can remain viable for many years (>50 years) in soil and gravel.</td></tr>
<tr><td colspan="2">Gorse and broom can establish on land throughout the Otago region. However, large areas of Central Otago and the Queenstown Lakes are predominantly clear of infestations. Density varies from light to heavy depending upon the intensity of grazing management. It is most prevalent on lightly grazed and non-grazed areas. Gorse and broom forms dense thickets that prevent stock from grazing infested areas. Seed may be spread by water, birds, roadmaking, gravel extractions, animals and machinery. It is generally perceived as a threat to pastoral values. However, if left undisturbed and in the presence of a seed source, tall indigenous vegetation particularly can overtop and suppress gorse and broom.</td></tr>
<tr><td colspan="3">Summary data 2022/2023</td></tr>
<tr><td colspan="3">• 37 gorse inspections undertaken with 32 inspections showing gorse to be present.
• 109 broom inspections undertaken with 90 inspections showing Broom to be present.
• Inspections of rural-zoned properties and gorse and broom free areas (Figure 23).
• Aerial surveillance of upper Kyeburn river catchment, Central Otago to collect baseline data for New Gorse and Broom Free extension areas to come into effect 2024.
• Biocontrol.</td></tr>
</table>

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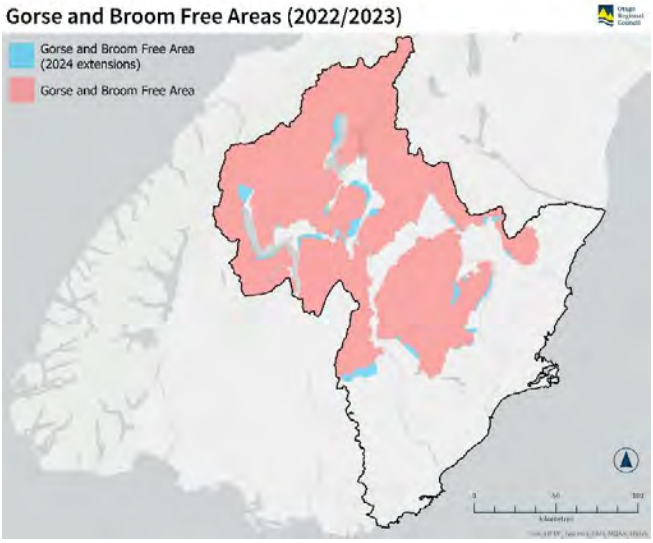


Figure 23. Gorse and Broom free areas defined by the ORC's pest management plan.

Biocontrol Agents for Gorse and Broom

The following gorse and broom biological control agents are known to be present and widespread in Otago:

Broom gall mite; Broom seed beetle; Broom leaf beetle; Broom psyllid; Boom shoot moth; Broom twig miner

Gorse pod moth; Gorse seed weevil; Gorse soft shoot moth; Gorse spider mite; Gorse thrips; Gorse colonial hard shoot moth.

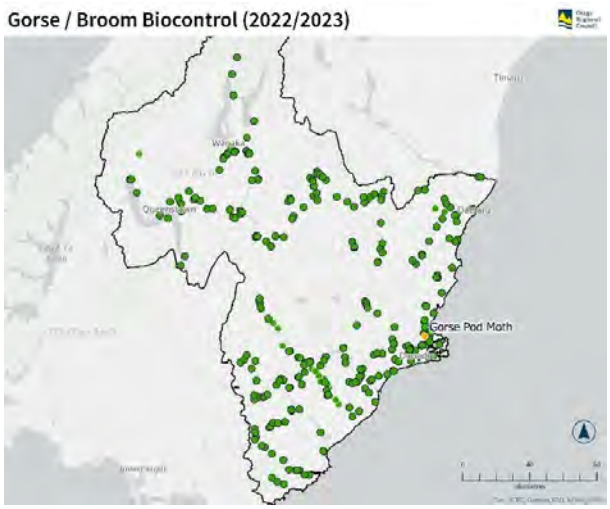


Figure 24. Gorse pod moth release site (yellow) and various broom biocontrol agent locations (green).

Gorse seed weevil

Credit: Kirk Robertson

Draft – 26 October 2023

Nodding thistle and Ragwort	***Carduus nutans and Senicio jacabaea***	**Sustained Control**

Plan Objective 6.4.4

Over the duration of the Plan, implement sustained control of nodding thistle and ragwort on rural zoned land within specified distances of property boundaries throughout the Otago region to prevent their spread in order to minimise adverse effects on production values and economic well-being.

Nodding thistle is an annual or biennial thistle that grows from an over-wintering rosette and is similar to the Scotch thistle, although more erect and spinier. Its flowering stems grow up to 1.5m high bearing large crimson flower heads that droop or "nod" when mature. Nodding thistle is found on sheep farming areas in many parts of Otago. A single mature plant is capable of producing up to 10,000 seeds. It is not readily grazed because of its spiny foliage. Single rosettes can occupy an area greater than one square metre, so large infestations can seriously reduce the stock carrying capacity of affected pasture. The plant is resistant to drought and seed can remain viable for up to 20 years.

Credit: Kirk Robertson

Ragwort is an erect biennial or perennial herb that is commonly 45-60cm tall but can grow to almost 2m high. It produces bright yellow flowers in clusters, from November to April. The plant is toxic to grazing cattle, deer and horses because its poisonous alkaloids cause liver cirrhosis, photosensitisation, jaundice and wasting. Poisoned animals may take some months to die. They do however electively avoid grazing it. Sheep will eat Ragwort without any apparent adverse effects, unless they are continually exposed to it in large quantities, or if they are not used to feeding on it. It can dominate pasture once established, almost completely excluding other pasture species in the worst instances, and significantly reducing the amount of grazing available to stock. Also, the plant is invasive in riverbeds, disturbed forest and shrubland, coastal areas, bare land and other short - stature vegetation types. Ragwort usually disappears when a canopy forms, which decreases light levels reaching the ground layer.

Summary data 2022/2023

- Good Neighbour Rule compliance inspections for both nodding thistle and ragwort.
- No applicable inspections undertaken during 2022/23

Draft – 26 October 2023

Biocontrol Agents for Nodding thistle and Ragwort

The following nodding thistle and ragwort biological control agents are known to be present and widespread in Otago:

Nodding Thistle receptacle Weevil; Nodding Thistle Gall Fly; Nodding Thistle Crown Weevil

Ragwort Flea Beetle; Ragwort Plume Moth; Ragwort Seed Fly; Ragwort Crown Boring Moth and Cinnabar Moth.

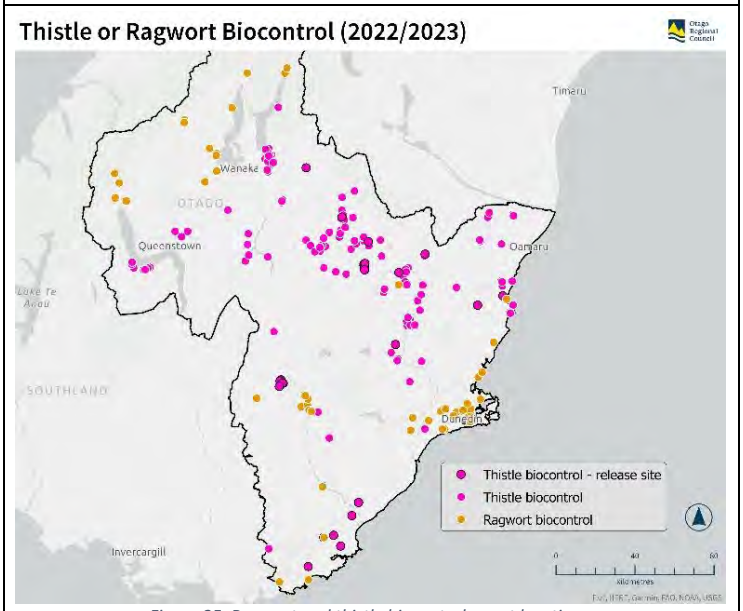


Figure 25. Ragwort and thistle biocontrol agent locations.

Nodding thistle receptacle weevil

Credit: Kirk Robertson

Draft – 26 October 2023

Russell Lupin	***Lupinus polyphyllus***	**Sustained Control**

Plan Objective 6.4.5

Over the duration of the Plan, implement sustained control of the extent of Russell lupin and wild Russell lupin within specified distances from waterways and property boundaries to preclude establishment of wild Russell lupin and to prevent adverse effects on environmental values.

Russell lupin is a quick growing perennial herb, up to 1m tall, with erect flowerhead spikes (15-60cm long) bearing many slightly scented and multiple-coloured flowers (12-20mm) from September to February. The plant produces a large amount of seed that are spread mainly by water and also by humans. The seed remains viable for many years. Russell lupin tolerates wind, warm to cold, flooding and drought, low fertility (fixes nitrogen) and fire. It rapidly invades shingly braided river systems providing cover for predators of the (often endangered) river birds. The dense infestations also alter water flow, changing the ecosystem for the native birds and aquatic species. Increased soil nitrogen may induce change in species composition in plant communities from low fertility species to weed species. Causes sand and gravel to build up, altering shape of rivers and contributing to flooding and erosion.

Summary data 2022/2023

- Aerial surveillance to collect baseline infestation for five of the six at risk catchments detailed in the RPMP (Dart, Rees, Matukituki, Makarora, Hunter). Infestations were sighted in the Dart, Rees, and Matukituki catchments. Skippers Creek, a tributary of the Shotover River, was also surveyed and found to have significant infestation.
- Russell Lupin Strategy developed.

Figure 26. Russell Lupin infestations identified using aerial surveillance.

Draft – 26 October 2023

Feral rabbits	***Oryctolagus cuniculus***	**Sustained Control**

Plan Objective 6.4.6

Over the duration of the Plan, implement sustained control of feral rabbits to ensure population levels do not exceed Level 3 on the Modified McLean Scale in order to minimise adverse effects on production and environmental values within the Otago region.

Feral rabbits (wild European) are a small mammalian herbivore, ranging in length from 34 to 50cm and weighing approximately 1.1 to 2.5kg. They have a high capacity for reproduction and females may be pregnant for 70% of a year, producing a total of 20 – 50 young per adult doe. Females are also capable of adjusting litter sizes to food supply, so rabbit populations are capable of rebounding quickly from natural disasters or control pressures. The rabbits' preferred habitat is grassland below about 1000m altitude, with free draining soils, sunny aspect, and less than 1000mm annual rainfall. They are common throughout the rural areas of the region with such habitat but may also be found in and around lifestyle blocks, rural townships and urban areas. Rabbit Haemorrhagic Disease (RHD) is capable of significantly reducing population levels. However, over time, surviving populations become increasingly resistant to the disease. It is therefore important that alternative control techniques continue to be employed by land occupiers in tandem with RHD to minimise resistant build up. In general, rabbits compete for pasture and crops with other farm animals and cause land degradation.

Credit: Jessica Edwards

Summary data 2022/2023

- Implementation of five community programmes in peri-urban areas: Lake Hayes, Gibbston, Queensberry, Moeraki, Otago Peninsula.
- 255 inspections in community programme areas. 29 first inspections with 14 compliant and 15 non-compliant. 226 re-inspections with 70 compliant and 156 non-compliant.
- ECO Fund rabbit incentive funding distributed to four community projects.
- 289 inspections in non-community areas (i.e. rural farmed areas). 229 first inspections with 176 compliant and 53 non-compliant. 60 re-inspections with 24 compliant and 36 non-compliant.
- Rabbit night counts were conducted in 29 routes over winter/spring 2023 (approx. 439 km). Average density of 4 rabbits per km, however given the highly skewed data the prevalence of rabbits is strongly dependent on location (e.g. hotspots). A provisional report on the 2023 Night Counts is given below.
- Notices of Direction issued for compliance inspections.
- Rabbit action plan developed and implemented.
- Research and development - bait pen trial undertaken using cereal pellets and bait stations.
- Feasibility study of removal of RHDV from Unwanted Organisms list

Draft – 26 October 2023

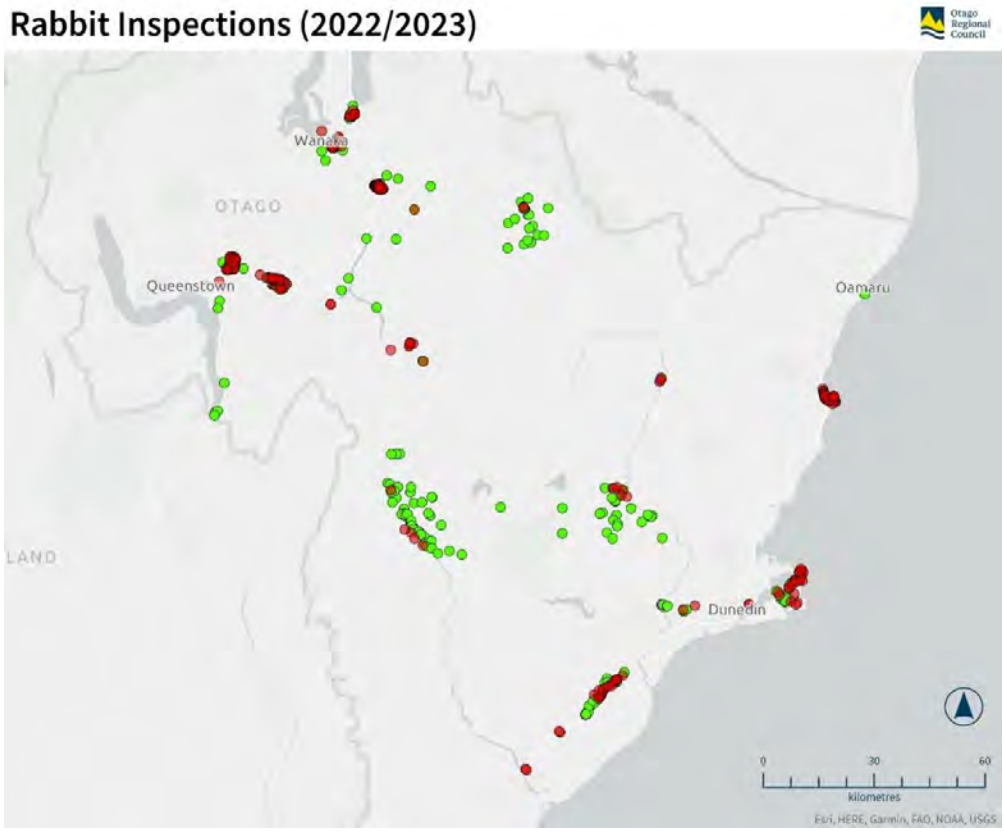


Figure 27. Rabbit inspections (green are compliant, red non-compliant).

Draft – 26 October 2023

Analysis of 2023 Rabbit Night Counts

Background

[1] In 2023, 31 night count routes have been established. Of the 31 routes, 15 are continuation of existing routes with 16 new routes added in 2023 as part of the expansion under the Rabbit Monitoring Programme (Figure A1). Due to land use change and improving regional coverage, two previously established routes (Lindis Crossing and Clifton, South Otago) were discontinued.

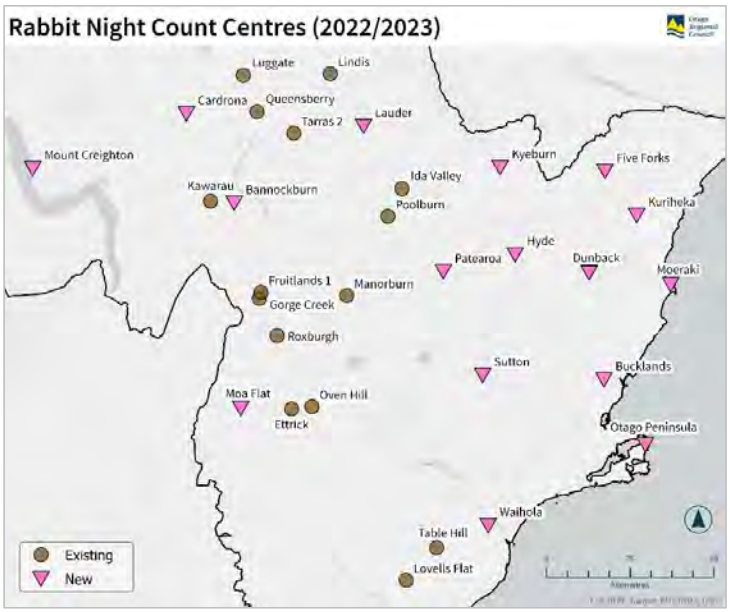


Figure A1: Rabbit night count routes locations in 2023.

[2] The combined route length is, approximately, 466 km. Routes are divided into sections, with each section being nominally one kilometre long.[2]

[3] The routes are located in rural (farmed) areas. Consequently, any inference of the analysis can only apply to such areas. Due to methodology of night counts, they are not appropriate in semi-rural and peri-urban areas (e.g. lifestyle blocks). Due to this, different methods are being trailed to assess the prevalence of rabbits in such places (e.g. trial cameras, inspection data).

2023 Results

[4] As of the 17th October 2023, 29 night count routes have been completed for the 2023 season. Overall, the combined length of routes counted is **439** km (based on 1km per section).

[5] Two routes (Waihola and Luggate) have been delayed due to lambing. These will be completed by end of November. Due to this delay, this report provides a preliminary analysis of the night count data. The analysis will be updated and extended once the final two routes are completed.

[6] Overall, the average density, by route, is **3.6 rabbits per km** (Figure A2). When the data is analysed in terms of each section, the average density increases slightly to **4 rabbits per km**. This difference is due to the spatial

[2] This is a nominal (average) length, and most sections range between 900 to 1,100 metres.

skewness of the rabbit population between routes. More importantly, both these results suggests that the average density of rabbits across Otago is likely to be under the compliance level of MMS ≤ 3[3]. This aligns with data from rabbit inspections in rural (farmed) areas which shows that new inspections had a compliance rate of 76.9% (i.e. MMS ≤ 3).

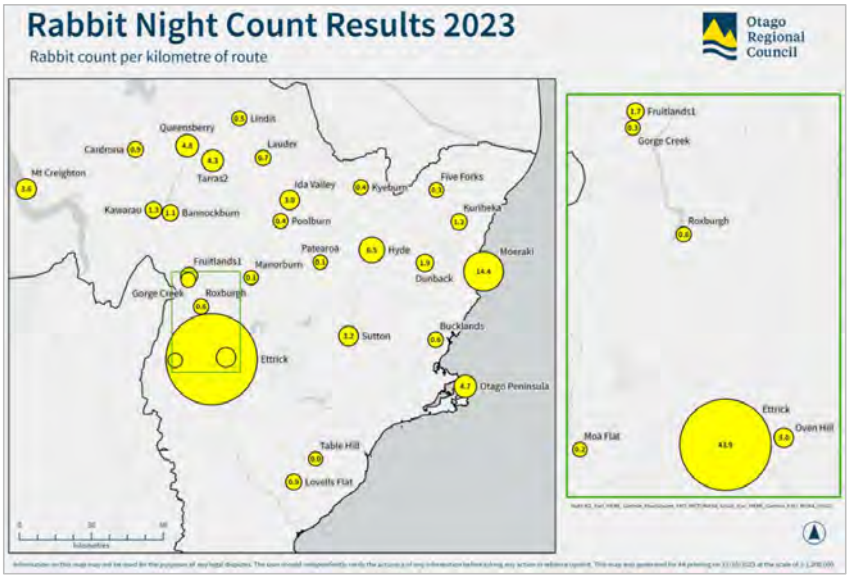


Figure A2: Rabbit density by night count route location

[7] An assessment of sectional data shows that for some 205 sections (46.7%) no rabbits were observed. Only 76 sections (17.3%) had a rabbit count of five rabbits or greater (Figure A3). This distribution of rabbits in consistent with historical sectional data where approximately half the sections were free of rabbits between the period from 2006-2022.

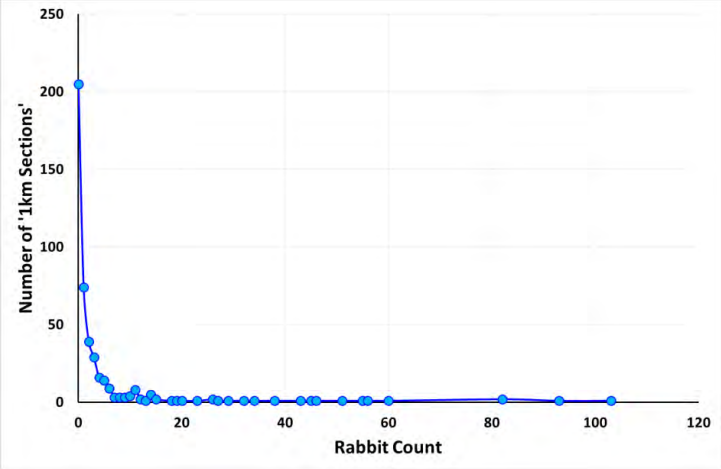


Figure A3: Rabbit counts by Section

[3] Based Parkes (2022) and Bolton (2010), an MMS of 3 approximately equates to a rabbit density of 5 rabbits per km.

Draft – 26 October 2023

[8] Only three routes had a rabbit density over five rabbits/km – these being, Ettrick, Moeraki and Hyde (Figure A4). Ettrick was a notable outlier, even when compared to historic data on the same route. It is important to note that shortly after the Ettrick night count was completed, a rabbit control operation was commenced. The effect of this control is expected to be realised in the 2024 night count.

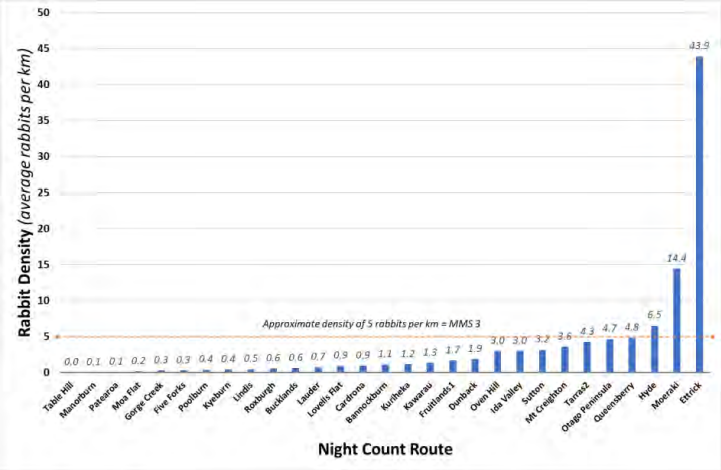


Figure A4: Average Rabbit Density for each Night Count Route

[9] Given the high skewness of the data (sectional skewness = 5.40), the assessment of rabbit densities is that, overall, they are generally low across rural farmed land in Otago (i.e. under the compliance level of MMS ≤ 3). However, the night count analysis also points towards there being notable hot-spot areas where rabbit prevalence remains a challenge.

Trend Analysis

[10] For the 15 existing night count routes that have been retained, the relevant trend analysis has been updated and given below.[4]

[11] When the 2023 survey is added to existing data, no significant change in the trends were observed compared to last year. This includes the result of the 2023 Ettrick survey and is likely to be an outlier due to reasons noted above.

[12] In terms of classifying the trends, six show a decrease while six show an increase with three having an indeterminate trend (Table 1).

Table 1: Trend Classification of Rabbit Night Count Routes

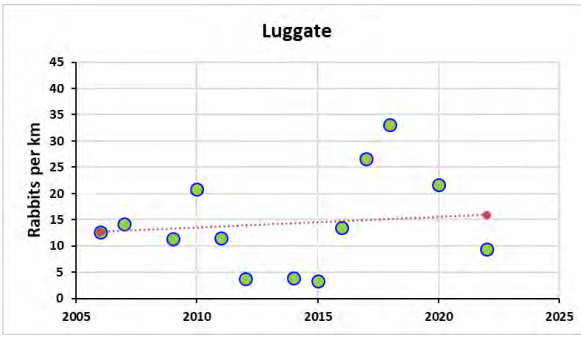
Trend	Count
Decreasing	6
Marginal decrease	0
Trend Unlikely	3
Marginal increase	2
Increasing	4

[13] Formal trend analysis of the new routes will start once a minimum of five surveys have been completed.

[4] The Luggate route analysis is not updated as the 2023 survey has been delayed until early November 2023.

Draft – 26 October 2023

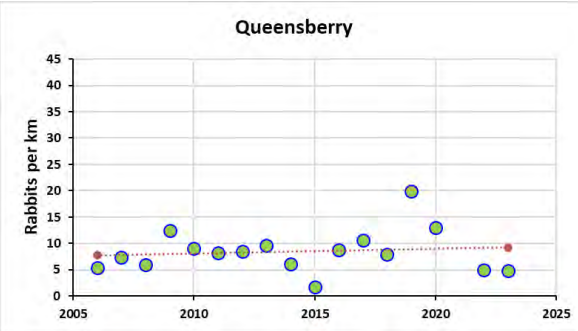
Trend Analysis of Existing Rabbit Night Count Routes



Period: 2006-2022
Sample Size: 13
Average: 14.3 rabbits per km
Equivalent MMS from Average: 4-5

Night count route is likely to have an average rabbit density ***greater than RPMP rules***

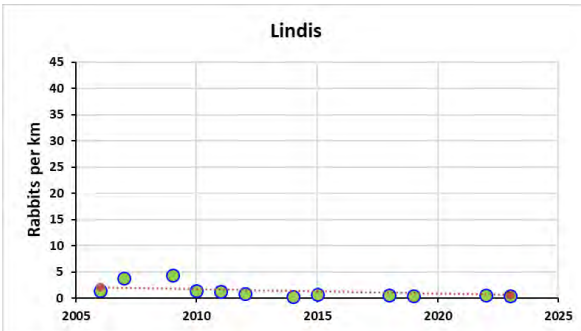
Median annual slope:[5] 0.20
Trend Confidence: Trend unlikely (probability = 0.66)



Period: 2006-2023
Sample Size: 17
Average: 8.5 rabbits per km
Equivalent MMS from Average: 4

Night count route is likely to have an average rabbit density ***greater than RPMP rules***

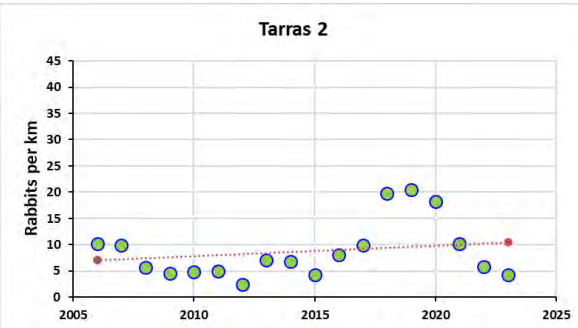
Median annual slope: 0.09
Trend Confidence: Trend unlikely (probability = 0.64)



Period: 2006-2023
Sample Size: 12
Average: 1.4 rabbits per km
Equivalent MMS from Average: 1-2

Night count route is likely to have an average rabbit density ***less than RPMP rules***

Median annual slope: -0.09
Trend Confidence: Decreasing trend virtually certain (probability = 1.00)



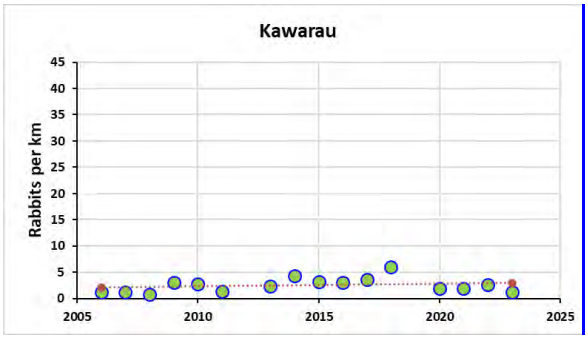
Period: 2006-2023
Sample Size: 18
Average: 8.8 rabbits per km
Equivalent MMS from Average: 4

Night count route is likely to have an average rabbit density ***greater than RPMP rules***

Median annual slope: 0.20
Trend Confidence: Increasing trend about as likely as not (probability = 0.79)

[5] Note: Trendline is based on median annual slope (Mann-Kendall and Sen Slope) and not linear regression.

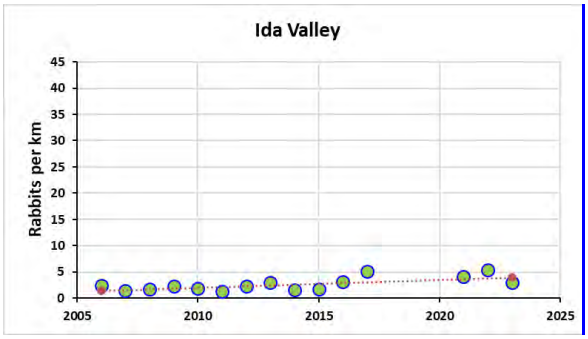
Draft – 26 October 2023



Period: 2006-2023
Sample Size: 16
Average: 2.6 rabbits per km
Equivalent MMS from Average: 2-3

Night count route is likely to have an average rabbit density ***less than RPMP rules***

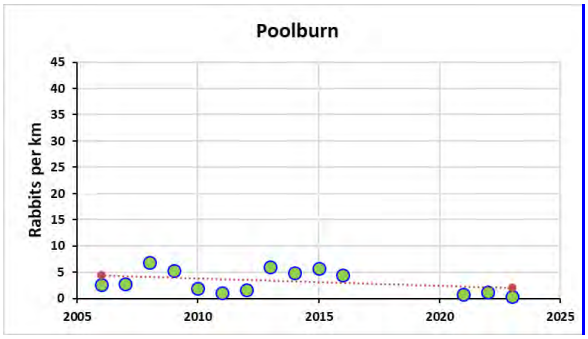
Median annual slope: 0.05
Trend Confidence: Increasing trend about as likely as not (probability = 0.83)



Period: 2006-2023
Sample Size: 15
Average: 2.7 rabbits per km
Equivalent MMS from Average: 2

Night count route is likely to have an average rabbit density ***less than RPMP rules***

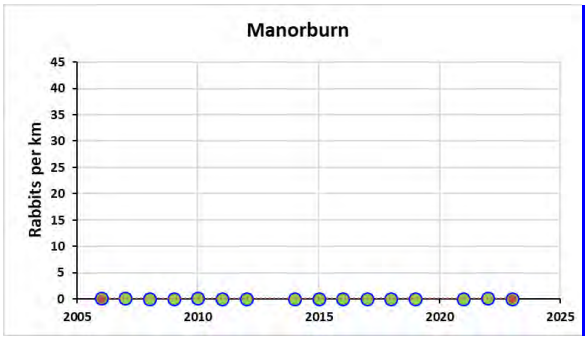
Median annual slope: 0.15
Trend Confidence: Increasing trend very likely (probability = 0.99)



Period: 2006-2023
Sample Size: 14
Average: 3.3 rabbits per km
Equivalent MMS from Average: 2-3

Night count route is likely to have an average rabbit density ***less than RPMP rules***

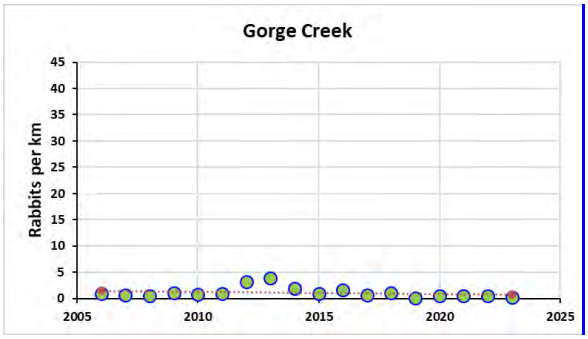
Median annual slope: -0.14
Trend Confidence: Decreasing trend likely (probability = 0.95)



Period: 2006-2023
Sample Size: 16
Average: 0.1 rabbits per km
Equivalent MMS from Average: 1-2

Night count route is likely to have an average rabbit density ***less than RPMP rules***

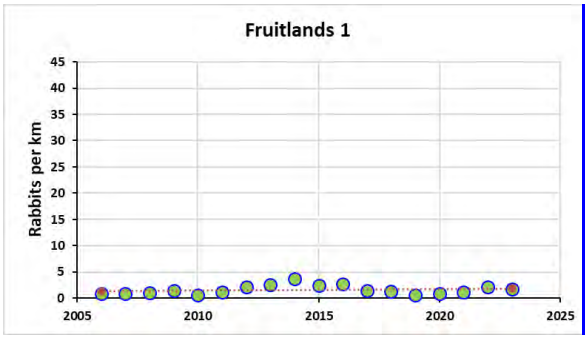
Median annual slope: 0.00
Trend Confidence: Decreasing trend possible (probability = 0.89)



Period: 2006-2023
Sample Size: 18
Average: 1.2 rabbits per km
Equivalent MMS from Average: 1-2

*Night count route is likely to have an average rabbit density **less than RPMP rules***

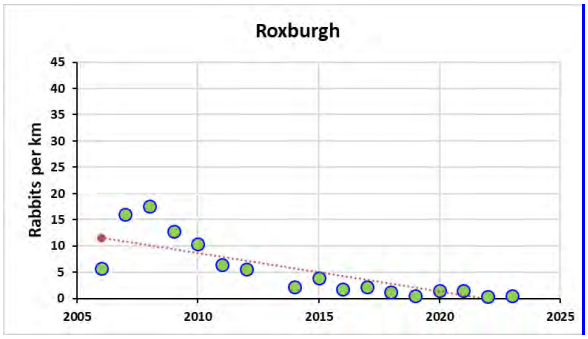
Median annual slope: -0.04
Trend Confidence: Decreasing trend possible (probability = 0.92)



Period: 2006-2023
Sample Size: 18
Average: 1.6 rabbits per km
Equivalent MMS from Average: 1-2

*Night count route is likely to have an average rabbit density **less than RPMP rules***

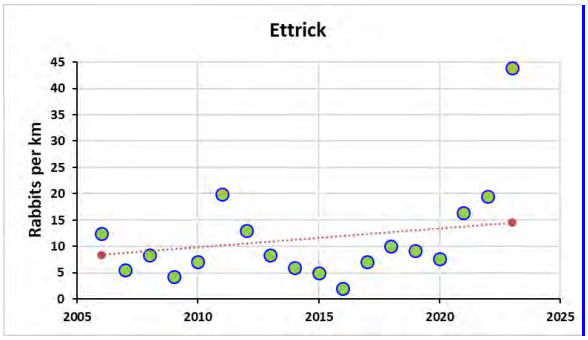
Median annual slope: 0.03
Trend Confidence: Increasing trend possible (probability = 0.86)



Period: 2006-2023
Sample Size: 17
Average: 5.4 rabbits per km
Equivalent MMS from Average: 2-3

*Night count route is likely to have an average rabbit density **less than RPMP rules***

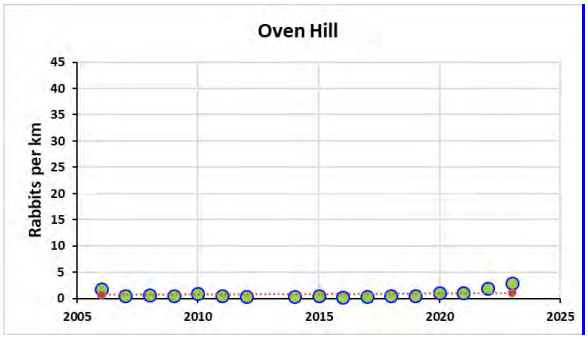
Median annual slope: -0.73
Trend Confidence: Decreasing trend virtually certain (probability = 1.00)



Period: 2006-2023
Sample Size: 18
Average: 11.4 rabbits per km
Equivalent MMS from Average: 4

*Night count route is likely to have an average rabbit density **greater than RPMP rules***

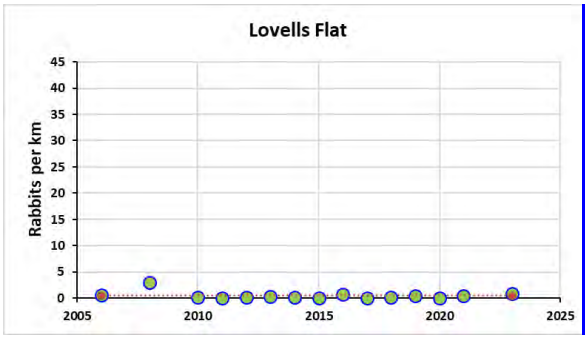
Median annual slope: 0.36
Trend Confidence: Increasing trend possible (probability = 0.92)



Period: 2006-2023
Sample Size: 17
Average: 0.9 rabbits per km
Equivalent MMS from Average: 1-2

Night count route is likely to have an average rabbit density ***less than RPMP rules***

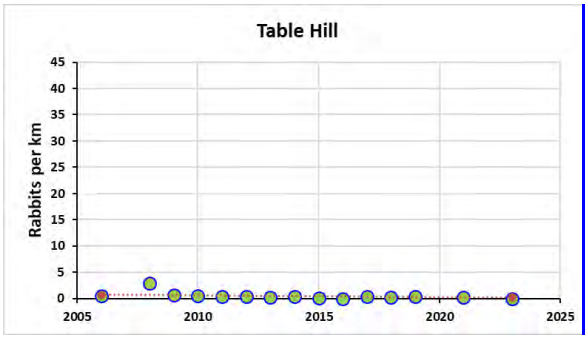
Median annual slope: 0.02
Trend Confidence: Increasing trend possible (probability = 0.84)



Period: 2006-2023
Sample Size: 15
Average: 0.5 rabbits per km
Equivalent MMS from Average: 1-2

Night count route is likely to have an average rabbit density ***less than RPMP rules***

Median annual slope: 0.00
Trend Confidence: Trend exceptionally unlikely (probability = 0.52)



Period: 2006-2023
Sample Size: 15
Average: 0.5 rabbits per km
Equivalent MMS from Average: 1-2

Night count route is likely to have an average rabbit density ***less than RPMP rules***

Median annual slope: -0.03
Trend Confidence: Decreasing trend virtually certain (probability = 1.00)

References

Bolton, N. (2010). Appendix 3. The use of night-vision equipment in pest and predator control. In E. Murphy, M Crowell & W. Henderson (Eds.). *Workshop proceedings: improving efficiency of rabbit eradications on islands* (pp. 61-67). Invasive Animals Cooperative Research Centre, Canberra, Australia.

Parkes, J. (2022). Monitoring rabbits in Otago. Kurahaupo Consulting. Report produced for the Otago Regional Council.

Site-Led Programmes

Dunedin Site Led Programmes

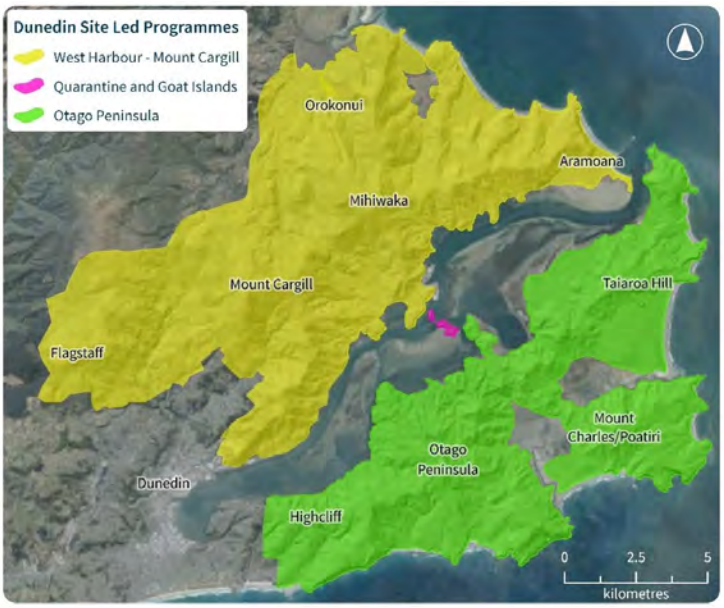


Figure 28. Dunedin site led programmes.

Otago Peninsula

Plan Objective 6.5.4.a

Over the duration of the Plan:
preclude establishment of feral deer, feral goats, feral pigs and Bennett's wallaby; and b) eradicate possums; and c) implement sustained control of feral cats, rats; hedgehogs and; d) progressively contain mustelids on the Otago Peninsula to avoid, mitigate or prevent damage to the indigenous ecosystem values at this site.

Plan Objective 6.5.4.b

Over the duration of the Plan, progressively contain:
a) banana passionfruit; b) Chilean flame creeper; c) Darwin's barberry; d) Sycamore; e) Gunnera; and f) tradescantia on the Otago Peninsula to avoid, mitigate or prevent damage to the indigenous ecosystem values at this site.

West Harbour – Mt Cargill

Plan Objective 6.5.5.a

Over the duration of the Plan:
a) preclude establishment of feral deer and Bennett's wallaby; and b) implement sustained control of feral cats, feral goats, feral pigs, rats, hedgehogs; and c) progressively contain mustelids; and d) progressively contain possums to achieve a 2% RTC at West Harbour – Mt. Cargill to avoid, mitigate or prevent damage to the indigenous ecosystem values at this site.

Plan Objective 6.5.5.b

Over the duration of the Plan, progressively contain:
a) banana passionfruit; b) Chilean flame creeper; c) sycamore; d) gunnera; e) Darwin's barberry; and f) tradescantia at West Harbour – Mt. Cargill to avoid, mitigate or prevent damage to the indigenous ecosystem values at this site.

Draft – 26 October 2023

Quarantine and Goat Islands	
Plan Objective 6.5.6a Over the duration of the Plan: a) preclude establishment of Bennett's wallaby, feral cats, feral deer, feral goats, feral pigs, mustelids, hedgehogs and possums; and b) eradicate rats on Quarantine and Goat Islands to avoid, mitigate or prevent damage to the indigenous ecosystem values at this site. **Plan Objective 6.5.6b** Over the duration of the Plan, progressively contain: a) banana passionfruit; b) Chilean flame creeper; c) Darwin's barberry; d) Sycamore; e) Gunnera; and f) tradescantia on Quarantine and Goat Islands to avoid, mitigate or prevent damage to the indigenous ecosystem values at this site.	
Summary of Actions 2022/2023	
• Formation of the Site-Led Working Group partnering with Te Rūnanga o Ōtakōu and Kāti Huirapa Rūnaka ki Puketeraki. • Site-Led Community Training Initiative – Growsafe Basic Certification training for 13 community group volunteers. • Site-Led Stocktake Assessment to collate community group operational activity. • Threats, Values and Impacts Assessment to evaluate site biodiversity values developed. • Site-Led Community Hui at Ōtakōu marae. • 2023/24 ECO Fund funding distributed to two community groups. Total: $35,928. • 2023/24 ECO Fund Rabbit incentives funding distributed to one community group. Total: $14,067. • 2023/24 ECO Fund funding distributed to three community groups. Total: $83,412. • 2023/24 ECO Fund Rabbit incentives funding distributed to three community group. Total: $49,265.	

Draft – 26 October 2023

Lagarosiphon Site Led Programme

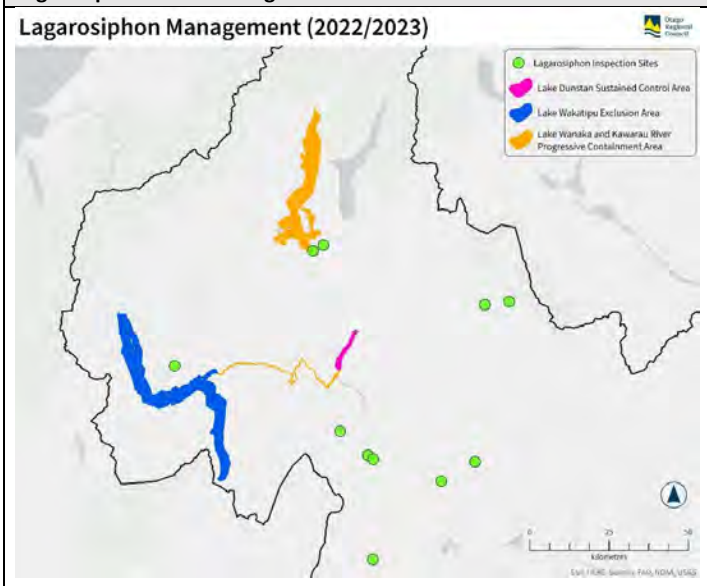


Figure 29. Lagarosiphon management.

Lagarosiphon Management Areas

Plan Objective 6.5.7

Over the duration of the Plan actively manage lagarosiphon to:

a) reduce the extent of lagarosiphon in Lake Wanaka and the Kawarau River through progressive containment over the next 10 years;
b) implement sustained control of lagarosiphon in Lake Dunstan;
c) prevent the establishment of lagarosiphon in Lake Wakatipu;
d) prevent the establishment of lagarosiphon in lakes, rivers and tributaries where it is not already present to avoid, mitigate or prevent effects on the environment, and amenity and recreational values

Summary of Actions 2022/2023

- Check, Clean, Dry Advocates provide education and advocacy at central lakes area during summer months.
- LINZ Stakeholder Work Programme meetings attended and regularly monthly meetings with LINZ.
- ORC Lagarosiphon Action Summary Document developed.
- Revised Check, Clean, Dry signage developed.
- Check, Clean, Dry collateral (buoy-shaped and cork key rings, pencils) purchased.
- Check, Clean, Dry Cleaning Station Kit's developed for central Otago water-related events.
- Toitū Te Whenua, LINZ control programme delivered.
- Monitoring of nine regular non-LINZ sites undertaken with lagarosiphon detected in Bullock Creek and Albert Town retention ponds.
- Installation of new Check, Clean, Dry signage in high use/ high risk locations.
- Bullock Creek infestation controlled.

9.3. Freshwater Restoration and Improvement Update and Opportunities

Prepared for:	Environmental Implementation Committee
Report No.	OPS2336
Activity:	Governance Report
Author:	Libby Caldwell, Manager Environmental Implementation; Melanie White, Project Delivery Specialist – Jobs for Nature
Endorsed by:	Gavin Palmer, General Manager Operations
Date:	8 November 2023

PURPOSE

[1] This report provides an update on the three ORC priority water quality projects: Tomahawk Lagoon, Lake Tuakitoto, and Lake Hayes. It also provides an update on the Toitū Te Hakapupu project (funded by the Ministry for Environment (MfE).

EXECUTIVE SUMMARY

[2] The Otago Regional Council Long Term Plan 2021-2031 details that key projects for delivery under environmental enhancement are the priority site specific projects of Lake Hayes, Tomahawk Lagoon and Lake Tuakitoto (Figure 1).

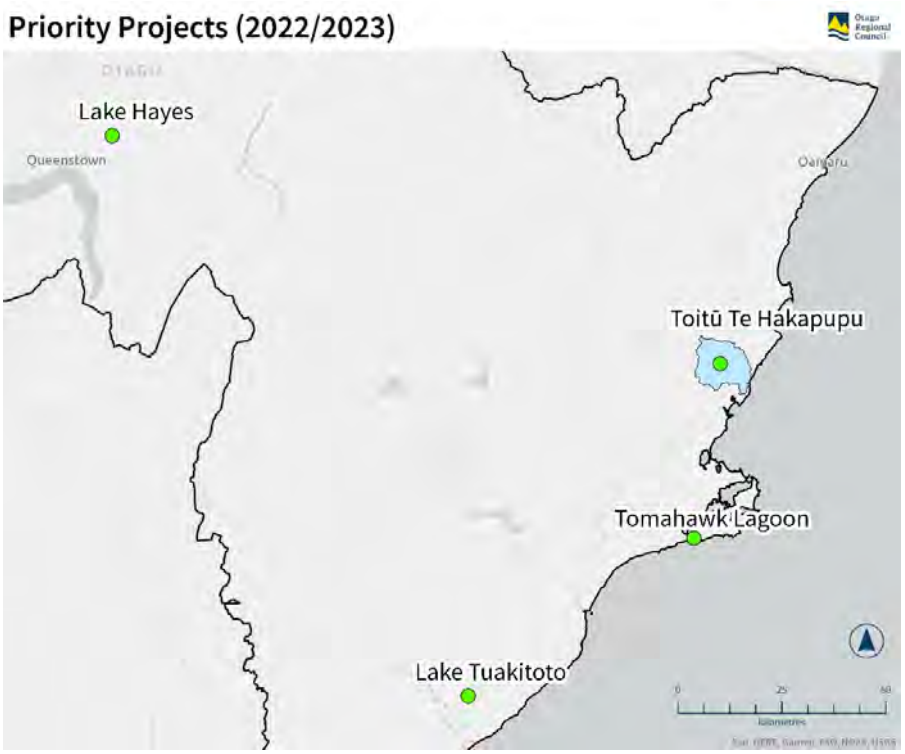


Figure 1: Locations of priority site specific projects and the Toitū Te Hakapupu Essential Freshwater Fund (EFF) project

[3] In July 2023, ORC staff received the Ecological Assessment for Lake Tuakitoto and Tomahawk Lagoon and options for lake rehabilitation.

[4] Implementation plans based on the Ecological Report for Lake Tuakitoto and Tomahawk Lagoon are currently being drafted by staff.

[5] A Stormwater Education programme is being developed for the Tomahawk Lagoon catchment.

[6] A wastewater education programme is being developed for the Lake Tuakitoto catchment.

[7] A cultural values assessment for Wai Whakaata /Lake Hayes has been completed by Aukaha and Te Ao Marama (TAMI). The assessment provides a comprehensive summary of mana whenua values and environmental aspirations and will be used to inform the final refreshed strategy (and other planning and strategic processes concerning the Wai Whakaata catchment).

[8] The Mill Creek (Arrow River water) augmentation works are nearing completion, with installation of the flow meter and control valve the last items of work to be undertaken. Commissioning is programmed for December. ORC is currently establishing a commissioning working group to go through the risks associated with the commissioning process and ensure co-ordinated involvement from all stakeholders.

[9] The Toitū Te Hakapupu project is funded through Ministry for the Environment (MfE) Essential Fresh Water Fund (EFF). MfE have assigned nearly $4 million. ORC will contribute $786,000 as an in-kind contribution. Landowners must contribute 25% of the value of the works on their property. The MfE spend sits at $850,000 as of end Y2 (June 2023).

[10] The Toitū Te Hakapupu project has to date supported landowners to erect 3 km of fencing and plant 17,150 native plants.

[11] There are currently eleven active planting and fencing sites and 25 landowners have been engaged with.

RECOMMENDATION

That the Environmental Implementation Committee:

1) ***Notes*** *this report*.
2) ***Notes*** *the implementation activities that are occurring on the water quality projects being delivered by ORC, partners and the community as detailed in this report.*

BACKGROUND

[12] This report provides an update on the three ORC priority water quality projects Tomahawk Lagoon, Lake Tuakitoto and Lake Hayes. It also provides an update on the Toitū Te Hakapupu project (funded by the Ministry for Environment (MfE).

[13] The Otago Regional Council Long Term Plan 2021-2031 details that key projects for delivery under environmental enhancement are the priority site specific projects of Lake Hayes, Tomahawk Lagoon and Lake Tuakitoto.

[14] A Lake Tuakitoto Management Plan and Tomahawk Lagoon Management Plan, based on community consultation, was approved by Council in April 2022.

[15] The Management Plans identified three priority projects to commence with first. For Lake Tuakitoto this included: an ecological assessment of the catchment, establishment of new water quality monitoring sites and a hydrological assessment. For Tomahawk Lagoon this included: the support and formation of a catchment group, an ecological assessment of the catchment is to be undertaken and a permanent water quality monitoring site to be installed.

[16] In April 2022, Otago Regional Council put a Request for Proposal (RFP) on the Government Tender Services (GETs) website for: "Lake Tuakitoto and Tomahawk Lagoon – Ecological Assessment". In June 2022, ORC awarded the contract to Cawthron Institute to deliver an ecological assessment for both Lake Tuakitoto and Tomahawk Lagoon and identify and provide guidance on where action could be delivered for best investment environmental outcomes.

[17] Otago Catchments Communities are leading the formation of the Catchment Group for the Tomahawk Lagoon area with several community meetings being held in the last quarter to progress this, supported by ORC staff.

[18] The Lake Hayes restoration project aims to improve water quality within Lake Hayes and reduce the risk of flooding along the perimeter of the lake. Currently there are flooding impacts to the existing recreational trail which affects public access, negatively impacts on the Crested Grebe habitat, increases runoff of nutrients from flooded land and impacts adversely on native planting which has been established for local biodiversity restoration along the shores of Lake Hayes.

[19] The Wai Whakaata /Lake Hayes Strategy Group is continuing to support the development of a refreshed strategy. The group focuses on:

- Coordinating actions across member organisations in order to improve water quality.
- Identifying significant existing and emerging issues affecting Wai Whakaata /Lake Hayes and responding appropriately.
- Considering agreements, policies and strategies and all other proposals to achieve integrated outcomes for Wai Whakaata /Lake Hayes.
- Identifying necessary actions by the partner organisations and other relevant organisations.

[20] The group comprises representatives of mana whenua, ORC, Friends of Lake Hayes, Department of Conservation and Queenstown Lakes District Council.

[21] The $4.0m, Ministry for the Environment funded, Toitū Te Hakapupu/Pleasant River Catchment Restoration Project with the objective of improving/protecting water quality in partnership with Kāti Huirapa Rūnaka ki Puketeraki is progressing. The rivers and estuary of Te Hakapupu have had excess sedimentation and nutrients deposited throughout the catchment which impacts on ecosystem habitat and health, cultural values, as well as reducing recreation and amenity values. These signs include areas of dense algal mats, anoxic water conditions, and muddy sediment deposited in river beds and into the estuary. Changing land use in the area, particularly in the upper catchment, over time has contributed to an increase in sediment and nutrients entering the waterways. Erosion, which is associated with land clearance, and weather events have also exacerbated sediment loss to water in the catchment.

DISCUSSION

Tomahawk Lagoon and Lake Tuakitoto

[22] Lake Tuakitoto is a large lowland lake and adjoining swamp near the coast north of the Clutha River/Mata-Au Mouth (refer to Figure 2 and Figure 3). It is fed from the inflow of Lovells Creek at the northern end of the wetland and is the best remaining example in Otago of a previously widespread wetland type (ORC, 2004).

Figure 2: Map showing the catchment for Lake Tuakitoto

[23] Lake Tuakitoto supports a high diversity of indigenous flora and fauna and an exceptionally high diversity of bird life. It is a regionally significant wetland habitat for nationally and internationally rare or threatened species. It provides a breeding habitat for the rare Australasian Bittern (*Botaurus poiciloptilus*) and Banded Dotterel (*Charadrius bicinctus bicinctus*). It is also a breeding area for the uncommon Marsh Crake (*Porzana pusilla affinis*), Spotless Crake (*Porzana tabuenis plumbea*) and South Island Fernbird (*Bowdleria punctata punctata*). Habitat is provided for the threatened giant kokopu (*Galaxias argenteus*). The threatened plant species swamp nettle (*Urtica linearifolia*) and *Isolepis basilaris* are present on the swamp margin (ORC, 2004).

Figure 3: Lake Tuakitoto

[24] A diverse mosaic of vegetation types and wildlife habitats exists within the Lake Tuakitoto area. It is considered a regionally and nationally important habitat for waterfowl, waders and swamp birds which supports a significant proportion of the national population of Mallard (*Anas platyrhynchos*) and New Zealand Shoveller/Kuruwhengi (*Anas rhynchotis variegata*), Grey Teal (*Anas gracilis*) and Black Swan (*Cygnus atratus*). All these species breed here. It is considered nationally important as a freshwater fishery habitat, supporting longfin eel (*Anguilla dieffenbachii*), shortfin eel (*Anguilla australis*), whitebait/inaka (*Galaxias spp*.) and common bully/pako (*Gobiomorphus cotidianus*) populations (ORC, 2004).

[25] Lake Tuakitoto is highly valued by Kāi Tahu for cultural and spiritual beliefs, values and uses, including mahika kai and waahi taoka. The associated wetland is highly valued by Kāi Tahu for its historical associations and as a traditional food gathering area (ORC, 2004).

[26] Lake Tuakitoto provides significant hydrological values including maintaining water quality and low flows or reducing flood flows. Lake Tuakitoto and surrounding wetlands perform a valuable hydrological function. It serves as a flood ponding area and is an integral part of the Lower Clutha Flood Control and Drainage Scheme (ORC, 2004). The lakebed and some of the lake margins are owned by ORC. The opportunity exists for

ORC, as a landowner, to enhance its land in the same way other landowners are enhancing theirs.

[27] In 2004, ORC constructed a walkway around the lake to improve public access to the lake.

[28] Tomahawk Lagoon is located at the southern end of the Otago Peninsula. It consists of two shallow brackish water lagoons which are joined by a narrow channel and weir/gate structure and share a common sea outlet (refer to Figures 4 and 5). Tomahawk Lagoon is a wildlife refuge of 33 hectares that is managed by the Department of Conservation which contains the threatened plant species *Isolepis basilaris* on the margin of the lagoon. The area is important ecologically as it is defined as a marsh and less than 15% of original marshes remain in Otago.

Figure 4: The catchment for Tomahawk Lagoon

Figure 5: Tomahawk Lagoon

[29] Tomahawk lagoon is a regionally significant wetland habitat for waterfowl and waders with a variety of bird species present and is part of a chain of feeding habitats along the coast used by migrating birds. Tomahawk Lagoon is also an important habitat for native fish and eels. Citizen Science water quality monitoring is undertaken by ECOtago monthly. ECOtago are a community group who are working to test and improve water quality within the Tomahawk Lagoon catchment. Their results (found at tomahawkcitizenscience.com) indicate that turbidity, E. coli, nitrates and phosphate levels are all exceeding national guidelines. Cyanobacteria is also regularly found within the lagoon over the summer months which is a toxic bacterium which can be harmful to humans and animals.

[30] On 29 March 2021, a key stakeholder meeting for the Tomahawk Lagoon catchment was held to discuss the draft outline management plan and feedback was provided. At this meeting key stakeholders also had the opportunity to vote for the projects within the plan which they identified as being the highest priority for implementation.

[31] On 29 April 2021, a drop-in session was held at Grant Braes AFC Clubrooms so that the community could vote on the projects that they identified as being the highest priority for implementation for Tomahawk Lagoon. 40 community members attended this session and provided feedback.

[32] In April 2021, online consultation was held with the Tomahawk Lagoon community to complement the drop-in session so they could provide their votes on the projects that they identified as being the highest priority for implementation. 59 people participated in this opportunity and provided their votes.

[33] In January 2022, a key stakeholder meeting for the Lake Tuakitoto catchment was held to discuss the draft outline management plan and feedback was provided. At this

meeting stakeholders also had the opportunity to vote for the projects within the plan which they identified as being the highest priority for implementation.

[34] In January and February 2022, online consultation was held with the community so that they could vote on projects which they identified as being the highest priority for implementation within the Lake Tuakitoto catchment. 59 people participated in this consultation exercise.

[35] In May 2023, ORC hosted a workshop with Cawthron Institute, Aukaha, and community representatives to discuss the key drivers of ecology and water quality in Lake Tuakitoto and Tomahawk Lagoon, and to identify preferred mitigation and rehabilitation approaches to achieve ecological improvement of the lake in advance of their final report being provided to ORC. Approximately 30 people attended the event at Kaitangata Community Hall and approximately 35 people attended the event at Ocean Grove Domain Hall.

[36] In May 2023, ORC sought proposals from suppliers to develop a Stormwater Education Programme for the Tomahawk Lagoon catchment. ORC contracted 4Sight Consulting to lead this piece of work which is intended for delivery in January 2024.

[37] In June 2023, ORC added two water quality monitoring sites to the Lake Tuakitoto catchment. This brings the total number of monitoring sites in the catchment up to three, with the existing site being Lovells Creek. The two additional sites are at Stony Creek and Frasers Stream. These sites are sampled monthly, and sampling will continue for the next two years (2022-2024).

[38] In July 2023, ORC staff received the Ecological Assessment for Lake Tuakitoto and Tomahawk Lagoon and options for lake rehabilitation.

[39] Following receipt of the Ecological Assessment, implementation plans for each of the catchments are currently being drafted by staff. These will be brought back to Council for consideration and to inform decisions on the Long Term Plan funding for 2024-2034. The implementation plan is likely to include consideration of targeted funding for private landowners within these catchments to support fencing, riparian planting, and restoration/rehabilitation of wetlands.

[40] Staff have developed a project plan for a wastewater education programme to be delivered in the Lake Tuakitoto catchment. The aim of this project is to raise awareness around Onsite Wastewater Management Systems and the impacts these can have on water quality when they are not maintained appropriately. This project will provide guidance and resources to those within the catchment around best practice management of their systems. Once the resources are finalised this programme will be initiated within the catchment.

Lake Hayes

[41] The Lake Hayes restoration project aims to improve water quality within Lake Hayes and reduce the risk of flooding along the perimeter of the lake. Currently there are flooding impacts to the existing recreational trail which affects public access, negatively impacts

on the Crested Grebe habitat, increases runoff of nutrients from flooded land and impacts adversely on native planting which has been established for local biodiversity restoration along the shores of Lake Hayes.

[42] A cultural values assessment for Wai Whakaata /Lake Hayes has been completed by Aukaha and Te Ao Marama (TAMI). The assessment provides a comprehensive summary of mana whenua values and environmental aspirations and will be used to inform the final refreshed strategy (and other planning and strategic processes concerning the Wai Whakaata catchment).

[43] Tenders have been received from invited contractors to undertake the downsteam works in Hayes Creek. It is proposed that the downstream works are completed by the end of November 2023, subject to resource consent being granted. At this stage the construction of a new culvert under SH6 is not required but the culvert construction consent is being progressed in the case that the downstream remediation works are not sufficient to support the lake's function/rehabilitation, and this could be used in the future if it is required.

[44] The Mill Creek (Arrow River water) augmentation works are nearing completion, with installation of the flow meter and control valve the last items of work to be undertaken (Figures 6, 7 and 8). Commissioning is programmed for December 2023.

Figure 6: Mill Creek (Arrow River water) augmentation works under construction, manholes and pipework.

Figure 7: Mill Creek (Arrow River water) augmentation works under construction, pipe trench.

Figure 8: Mill Creek (Arrow River water) augmentation works under construction.

[45] ORC is currently establishing a commissioning working group to go through the risks associated with the commissioning process and ensure co-ordinated involvement from all stakeholders. The working group will include representatives from the following groups: ORC, Arrow Irrigation Company (AIC), Friends of Lake Hayes (FOLH), Mana Whenua, project consultants (Egis, Mitchell Daysh) and Base Contracting. Millbrook Resort representatives will also be invited.

[46] The key items for the commissioning working group to consider include the contractual requirements for the physical infrastructure, impact on the immediate environment when flushing begins, and potential mitigation measures, appropriate approvals and blessings from Mana Whenua prior to operating, ongoing monitoring and effectiveness and establishing the operational plan.

[47] The Wai Whakaata Strategy Group continues to provide an effective mechanism to bring all parties together to discuss issues of mutual interest and to act as a liaison point between the community and government agencies. It has facilitated better communication and enabled ORC to quickly engage the views of key stakeholders to ensure acceptable progress is made to deliver the Lake Haye restoration project.

[48] In the next meeting for the group (December 2023), discussion will occur specifically around how to incorporate the cultural values assessments that have been delivered by Aukaha and TAMI.

Toitū Te Hakapupu | Pleasant River Catchment Restoration Project

[49] The objectives for Toitū Te Hakapupu are to improve water quality through identifying erosion hot spots and implementing mitigations. The mitigations include fencing off rivers and wetlands to exclude stock and planting native species in fenced areas to improve stream banks stability, wetland efficacy and biodiversity.

[50] Environmental baselines have been set indicating there are native galaxiids, and taonga species (tuna and koura) present with a high proportion of migratory fish species. There is very little native vegetation remaining. Stream habitat scores were poor to fair and this was reflected in the macroinvertebrate abundance index (degraded to moderately degraded).

[51] Water quality monitoring has been set up with the first round completed last summer. Further monitoring will be undertaken this summer and as the data builds, an assessment of water quality will be undertaken to establish trends that can be compared to regional and national standards.

[52] Kāti Huirapa Rūnaka ki Puketeraki are undertaking cultural health monitoring and producing a capacity and capability plan for the rūnaka as part of this project.

[53] After engaging with a first group of landowners that came forward through an expression of interest exercise run by staff, the project has supported landowners to erect 3 km of fencing and plant 17,150 native plants. Photos showing progress made are included below in Figures 9 and 10. The targets for this year are to install 5 km of fencing and get 25,000 plants in the ground. It is envisaged that the target for this year will be met.

[54] New plantings and fencing are being GPS mapped by staff and details recorded in ORC's GIS system (Figure 12).

[55] There are currently eleven active planting and fencing sites and 33 landowners have been engaged with.

Figure 9: Photo showing planting in the headwaters above Te Hakapupu estuary behind stock exclusion fence.

Figure 10: Photo showing planting on banks adjacent to Regionally Significant wetland that is Te Hakapupu estuary (also now Department of Conservation Marine Reserve – Te Umu Kōau - Figure 11).

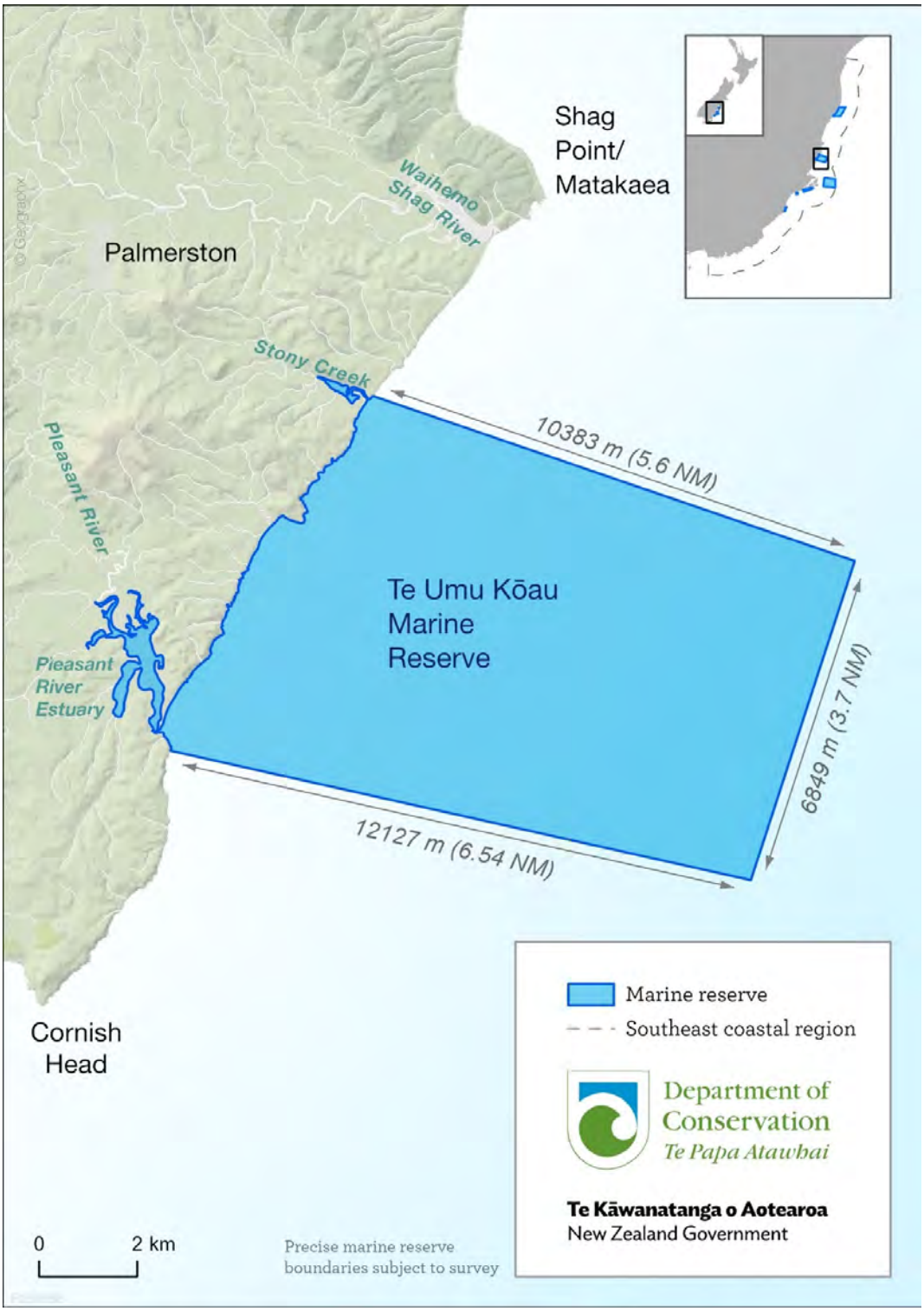


Figure 11: Image showing the extent of the Te Umu Kōau Marine Reserve and that the Pleasant River Estuary is included in this. (Source: te-umu-koau-marine-reserve-map.jpg (2039×2894) (doc.govt.nz)**)**

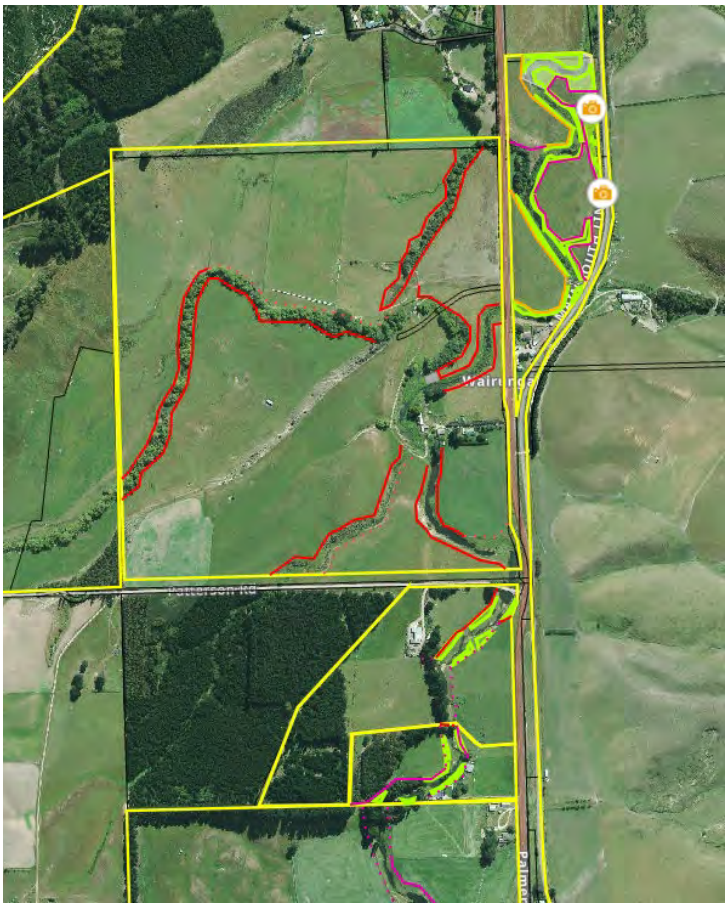


Figure 12: Mapping of new riparian plantings and fencing in Te Hakapupu catchment.
Coloured lines indicate fencing, green polygons indicate plantings, yeallow lines depict property boundaries. Camera points are photo points for monitoring.

[56] Aukaha were awarded a contract for planting to deliver the project in May 2023. They have recruited a planting team to deliver site preparation and planting for the project. 25% of the plants have been planted by landowners and community and the other 75% have been planted by the Aukaha planting team.

[57] Fencing work required to deliver the project is procured through a fencing panel of five ORC approved contractors. The Request for Quote process is used with the fencing panel for each fencing package to ensure best price for best product is attained.

[58] Sediment modelling is complete, with a ground truthing exercise underway to establish hot spots to support prioritisation of further works.

[59] The Partnership Group meets every quarter. ORC have a healthy working relationship with our partners, Kāti Huirapa Rūnaka ki Puketeraki. Mana whenua have been involved in community meetings, community planting days, and school plantings and environment days. East Otago Catchment Group are represented in the Partnership Group and have been crucial in organising, co-ordinating and giving input to communications and engagement.

Figure 13: Photo showing community planting day in Te Hakapupu catchment, 3 September 2023

[60] A community planting day was held on the 3rd of September 2023 in Te Hakapupu catchment, 1200 plants were planted by over 50 people.

[61] A Catchment Action Plan (CAP) is under development. Input has been received from the community and mana whenua. The CAP process will align with other ORC CAP's and include the Forestry Action Plan.

[62] A Forestry Working Group has had four meetings, including a field day, to see harvest activity underway. A Forestry Action Plan will be developed to guide forestry activities in protecting water quality during high-risk cycles.

[63] A Community Science Plan has been created. The Environmental Implementation Team are looking at how this can be implemented to ensure activities are sustainable after the project funding ends.

Figure 14: Waikaouaiti and Kartiane schools at Te Hakapupu river mouth learning about protecting water quality.

[64] Reporting to Ministry for the Environment is up to date. The Annual Work Plan for Year 3 is complete and in the approvals process. The annual audit is underway, due end of October. A change request is underway to ensure all the project objectives can be delivered within budget and timeframe.

[65] The project is funded through Ministry for the Environment (MfE) Essential Fresh Water Fund (EFF). MfE have assigned nearly $4 million. ORC will contribute $786,000 as in-kind contribution. Landowners must contribute 25% of the value of the works on their property. The MfE spend sits at $850,000 as of end Y2 (June 2023).

CONSIDERATIONS

Strategic Framework and Policy Considerations

[66] Our strategic directions commit ORC to delivering integrated environmental management, engaging communities and collaborating to deliver, and this work is consistent with those commitments. Where water quality is degrading, ORC is required to implement an action plan to address the degradation. This work is an early example of such a plan.

Financial Considerations

[67] The budgets for these projects have been accounted for in the Long Term Plan 2021-2031 and subsequent annual plans.

[68] To implement actions in these catchments financial/funding discussions will occur through the Long Term Plan 2024-2034 for future years funding.

Significance and Engagement Considerations

[69] The recommendations of this report are consistent with the council's Significance and Engagement Policy.

Legislative and Risk Considerations

[70] This paper does not trigger legislative or risk considerations.

Climate Change Considerations

[71] Lake Tuakitoto plays a significant role as a catchment ponding area during flood events in the Lower Clutha Flood Control and Drainage Scheme.

Communications Considerations

[72] Nil

NEXT STEPS

[73] Staff will finalise implementation plans for Tomahawk Lagoon and Lake Tuakitoto.

[74] The stormwater education project for Tomahawk Lagoon will be delivered in early 2024.

[75] Finalise the wastewater education programme for Lake Tuakitoto and commence engagement.

[76] The Lake Hayes augmentation project will continue, commissioning for this is to occur end of 2023.

[77] The downstream works for Lake Hayes will commence at the end of November (consent dependent) and this work will be delivered prior to Christmas.

[78] Staff will continue to deliver the Toitū Te Hakapupu project as detailed in the funding agreement with MfE.

REFERENCES

- Otago Regional Council (2004) Regional Plan: Water for Otago. Published by the Otago Regional Council, Dunedin.

ATTACHMENTS

Nil

9.4. Large Funding Requests

Prepared for:	Environmental Implementation Committee
Report No.	OPS2225
Activity:	Governance Report
Author:	Anna Molloy, Principal Advisor Environmental Implementation Libby Caldwell, Manager Environmental Implementation
Endorsed by:	Gavin Palmer, General Manager Operations
Date:	8 November 2023

PURPOSE

[1] To seek endorsement of the criteria for a fund to be set up to support funding requests for large scale biodiversity projects in 2023/24.

EXECUTIVE SUMMARY

[2] In the financial year 2023/24, the Annual Plan provides $300,000 for funding large scale biodiversity projects. It is proposed that this be allocated to community groups through a contestable grant round using the ECO Fund system for processes.

[3] Eligibility and assessment criteria should be based on the existing ECO Fund criteria (where appropriate) and additional criteria added to account for the large-scale grants and biodiversity outcomes. These are outlined in this paper.

[4] Each year the ECO Fund is reviewed to ensure it is still fit-for-purpose. Apart from changes required to accommodate the large-scale funding programme (if approved) and administrative tweaks to the system, there are no changes recommended for ECO Fund this year. A more significant review is recommended in 2024 to align with any decisions made through preparation of the Long-Term Plan 2024-2034 that might affect the fund, such as funding objectives.

RECOMMENDATION

That the Environmental Implementation Committee*:*

1) ***Recommends that the Council endorse*** *the approach of having a fund which supports large scale funding requests which sits alongside the ECO Fund and incentives funding schemes currently in place at Otago Regional Council (Option 1).*
2) ***Recommends that the Council endorse*** *the criteria as detailed in the Eligibility and Assessment criteria section of this report (Option 1).*
3) ***Recommends that the Council notes*** *the ECO Fund and incentives funding schemes available for 2024.*
4) ***Recommends that the Council retains*** *the current application and evaluation processes and criteria for the ECO Fund and Incentives funding schemes.*

BACKGROUND

[5] A paper was provided to the Environmental Implementation Committee on 14 September 2022 regarding large scale funding requests. This discussion paper was in

response to several funding requests made to Council through Long Term Plan and Annual Plan processes. It concluded that ORC does not have any avenues for receiving or assessing large scale funding requests. Several options were explored in that paper (refer to Attachment 1).

[6] As discussed in the September 2022 paper, supporting large scale environmental community projects is an action embedded in ORC's various strategies and plans such as the Long-Term Plan 2021-31, the Biodiversity Strategy and Action Plan, and the Biosecurity Strategy.

[7] Three main options canvased in the September paper are summarised below:

a. Adding Site-led programmes to the Regional Pest Management Plan RPMP – Advantages of this model include an existing framework for adding sites, a formal national biosecurity framework within which the model can run, and the relative ease of adding more groups into an overarching site-led programme. However, the scope of site-led programmes may not allow enough flexibility for all potential proposals to be considered, and adding new sites to the RPMP is untested and may take significant time.
b. Adding a larger funding pool for ECO Fund with ring-fenced funding for large-scale projects or programmes – The benefits of the ECO Fund framework include established criteria, brand and profile, and tested assessment, approval, and administrative processes. However, it would be necessary to modify some established processes for significant investment in large projects e.g., criteria, assessment, project oversight, accountabilities, and funding timeframes, to the point where a separate fund or alternative model may provide for more effective delivery.
c. Partnerships funded through the Long-Term Plan - Would allow for public consultation and Council approval, and potentially allow more transparent evaluation of projects against other strategic priorities. It would also give certainty as to timeframes for proposals to be developed and allow a reasonable time between each assessment round (every 3 years for LTP). Consideration of proposals via this model would need a long lead in time and may be more appropriate for the type of large-scale, long-term investments required for effective operational partnerships.

[8] The process for assessing potential investments in opportunities for large scale environmental outcomes with external parties needs to be consistent, transparent, and equitable.

DISCUSSION

ECO Fund Recommended Process

[9] Each option above has merits, however adding a large-scale fund to the ECO Fund is the recommended option for 2023/24. This is because:

a. The biodiversity budget for 2023/24 includes $300,000 for biodiversity outcomes.
b. The ECO Fund is already an established system and process, and it would not be too difficult or time consuming to add a programme to this.
c. The Long-Term Plan process for 2024 – 34 is underway and may be able to include consideration of large-scale funding programmes, but this will be after 2023/24.

[10] While it is anticipated that requests for funding from external parties will increase significantly in the short to medium term as central government funding initiated through the Covid-19 response (e.g., Jobs for Nature) scales down or stops, the Long-Term Plan consultation can look at this issue more broadly. The recommendation in this paper is only for 2023/24.

[11] A large-scale funding programme as a part of the ECO Fund process would need to include eligibility and assessment criteria. Suggested criteria are outlined in more detail below.

Eligibility and Assessment Criteria

[12] In addition to (or in place of where appropriate) the existing eligibility criteria of the ECO Fund (see attachment 2), it is suggested the following criteria be used for the large-scale biodiversity grants:

a. must be within Otago.
b. must address biodiversity outcomes.
c. are between $50,000 and $150,000.
d. can be completed by June 2025.

[13] Assessment criteria is about consideration of the merits of the project. It is recommended that the assessment criteria be based on the current ECO Fund criteria (see attachment 3) with the following change:

a. Criteria 5 be amended to “Biodiversity Focus Areas” with a score out of 4, as follows:
    i. Project addresses a first-tier biodiversity priority - 4
    ii. Project addresses a second-tier biodiversity priority – 3
    iii. Project addresses a third-tier biodiversity priority - 2
    iv. Project does not address a biodiversity priority but has clear biodiversity outcomes – 1

[14] Biodiversity priorities and tiers are derived from the work undertaken by John Leathwick for Otago Regional Council in 2020. This work was in response to a recommendation by Te Uru Kahika − Regional and Unitary Councils Aotearoa in 2017 for prioritising sites to inform biodiversity management across the regions to secure biodiversity outcomes.

[15] Although ORC completed a key component of this prioritisation process in 2020 using the Zonation software, the lead researcher (Leathwick) for the project recommended that its spatial outputs be thoroughly examined to ensure the full representative range of ecosystems and habitats in the Otago region are captured in the final set of priority sites.

[16] This further examination of priority sites has started based on ecological criteria, drawing on specialist knowledge of the Otago region and its ecosystems and taxa. An expert panel was convened, and they proposed a set of general rules for identifying tiers of priority within the network of sites (the initial zonation mapping results) which was summarised as follows:

a. First tier includes threatened naturally uncommon ecosystems, habitats of threatened taxa endemic to Otago, and habitats of Nationally Critical species.

b. Second tier includes all other naturally uncommon ecosystems and 'unnaturally rare' ecosystems.
c. Third tier includes all other priority sites (as indicated by the Leathwick work but noting this would need ground verification for any projects as the work is modelled data).

ECO Fund 2024

[17] If approved, the large-scale biodiversity grants will be added to the ECO Fund 2024 round. This round should be advertised in early 2024 with the round officially opening in early March 2024 and closing a month later. Successful applicants are usually informed in May.

[18] With this addition, the ECO Fund and other incentives in 2024 would total $900,000 including:
a. ECO Fund General grants - $300,000.
b. Incentives targeted at sustained rabbit management - $100,000.
c. Incentives targeted at water quality - $50,000.
d. Incentives targeted at protected private land, SNAs - $100,000.
e. Incentives targeted at pest plant control and regeneration - $50,000.
f. Large scale biodiversity grants - $300,000.

[19] Apart from the addition of the large-scale biodiversity grants, there are no other recommended changes to the ECO Fund process for 2024. A review will be undertaken following the 2024 round and any Long-Term Plan implications for grant funding will be included in a future paper.

OPTIONS

[20] Option 1 (preferred option): A large scale biodiversity funding round is set up to align with the ECO Fund and incentives funding timing and utilises the criteria as detailed in the Eligibility and Assessment criteria section of this report.

[21] Option 2: The $300,000 is added to the existing ECO Fund and no large scale biodiversity funding requests category is added.

[22] Option 3: No changes are made, including to the ECO Fund and incentives funding schemes for 2024 and the $300,000 is held over for an alternative use during the 2023/24 financial year.

CONSIDERATIONS

Strategic Framework and Policy Considerations

[23] This paper is only relevant to 2023/24 so no strategic or policy considerations are relevant at this stage as it is intended any ongoing large-scale funding be discussed and allocated through the Long-term Plan 2024-34 process.

Financial Considerations

[24] The funding for large-scale biodiversity grants is already allocated in the 2023/24 budget.

Significance and Engagement Considerations

[25] None at this stage.

Legislative and Risk Considerations

[26] Nil.

Climate Change Considerations

[27] There are no immediate climate change considerations for this work, but biodiversity projects can support climate change outcomes.

Communications Considerations

[28] Communications for the ECO Fund will run as usual and include the new large-scale grants (if approved). However, communication about the new large-scale biodiversity grants will commence as soon as practicable to enable sufficient time for applicants to plan their projects.

NEXT STEPS

[29] If approved, systems will be put in place to accommodate the large-scale grants within the ECO Fund process.

[30] Communication around the availability of large-scale grants will commence to ensure any potential applicants have sufficient time to plan their projects.

ATTACHMENTS

1. 2022 09 14 Large Funding Requests Paper [**9.4.1** - 9 pages]
2. Att 2 Eligibility Criteria 2023 [**9.4.2** - 2 pages]
3. Att 3 Assessment Criteria 2023 [**9.4.3** - 3 pages]

7.3. Large Funding Requests

Prepared for:	Implementation Committee
Report No.	OPS2225
Activity:	Governance Report
Author:	Anna Ferguson, Principal Advisor Environmental Implementation & Richard Ewans, Partnership Lead - Biodiversity
Endorsed by:	Gavin Palmer, General Manager Operations
Date:	14 September 2022

PURPOSE

[1] The purpose of this paper is to describe how site-led programmes and predator free partnerships have been addressed by Otago Regional Council (ORC) to date; and to outline current options within ORC for supporting opportunities for biosecurity collaboration for biodiversity outcomes with external parties.

EXECUTIVE SUMMARY

[2] Southern Lakes Sanctuary (SLS) have made multiple requests to ORC for funding in a similar partnership arrangement to Predator Free Dunedin (PFD). This request has been unable to be accommodated by ORC but raises the issue of how ORC can partner with and potentially fund large scale community biosecurity projects (or other environmental based projects).

[3] The ORC does not have any avenues for receiving or assessing large-scale funding requests or partnerships. The only options would be through:

a. Biosecurity Strategy which mentions large and smaller scale initiatives for biosecurity but no detail on how this could work.
b. ECO Fund, but it is limited to $50,000 and not in the same scale as the SLS request.
c. Site-led programmes under the Regional Pest Management Plan which provides a formal structure but not guaranteed funding, and funding to date is not in the same scale as the SLS request.
d. Developing a partnership model and process for receiving and assessing large funding requests in the lead up to each Long-Term Plan.

[4] ORC receives requests for ongoing or multi-year support from various organisations. These are likely to increase given Jobs for Nature funding will end and create a significant gap in funding for community organisations.

[5] Other regional councils do not appear to have formal methods for assessing large scale funding requests (although further investigation could explore this in more detail). Some examples found indicated a similar approach to the ORC which was to include it through their Long-Term Plan consultation and commitments.

[6] This paper provides a starting point for discussion.

RECOMMENDATION

That the Implementation Committee*:*

1) ***Notes** this report.*

BACKGROUND

[7] A resolution from the 1 June 2022 Finance Committee meeting was that the Committee:

a. *Requests an issues discussion paper for potential funding of large site-led community biosecurity projects be brought to the 14 September 2022 Implementation Committee*.

[8] For the purposes of this paper, the scope of the resolution has been interpreted more broadly than being specific to site-led projects in Regional Pest Management Plan 2019-2029 (RPMP) terms.

[9] It is understood that this resolution came from discussion about the 2022/23 Annual Plan; specifically, a request by Southern Lakes Sanctuary (SLS) to encourage ORC to budget for becoming a partner in the SLS project, in a manner similar to Predator Free Dunedin (PFD), to facilitate co-funding of SLS by Predator Free 2050 Ltd (PF2050) and increase predator control work in Otago Upper Lakes.

[10] The staff response to this request in the Committee papers was that "*the Council considered this matter very carefully during the Long-Term Plan (LTP) process (May 2021) and decided that it could not increase its funding support for this type of pest control activity without changing its overall prioritisation of Council-wide service delivery and/or increase its funding impost on Otago ratepayers. Council notes that rate sourced funding constraints have, if anything, become greater since adopting the LTP in June 2021.*"

[11] The SLS request illustrates that a more strategic approach to investing in large scale (site-led or otherwise) community biosecurity projects is appropriate, rather than ad hoc consideration of such proposals at draft annual plan stage. Currently ORC does not have a consistent process for considering proposals like PFD and SLS.

[12] This paper outlines issues and options related to potential funding for large scale community biosecurity projects for discussion. It does not describe a process or strategy for assessing potential investment in such projects.

DISCUSSION

[13] Supporting large scale environmental community projects is an action embedded in ORC's various strategies and plans. Key commitments are outlined in Table 1 below.

Table 1: Key commitments to Biosecurity and biodiversity collaborative projects.

Strategy / Plan	Commitment
Long-Term Plan	Provide support and funding to selected initiatives and

	organisations across the region which deliver biosecurity, biodiversity and environmental outcomes that align with our strategic objectives.
	Collaborate with iwi, DOC, and other key organisations to develop, coordinate, and deliver a programme of actions to enhance indigenous biodiversity.
Biosecurity Strategy	Support, facilitate and participate in other non-regulatory (i.e., non RPMP) landscape scale approaches to manage harmful organisms; & provide facilitation support to smaller non-regulatory site-based approaches at a community, group, and individual level where appropriate.
	Contribute to the development of the Predator Free Dunedin 2050 'whole of site' management plan/s by December 2020; & within 18 months of establishing the [whole of site management plan], develop a plan of action for ORC's role in the delivery of the plan outcomes (e.g., service delivery, monitoring, research).
Biodiversity Strategy	Partner with city and district councils, Kāi Tahu, DOC, Fish and Game, and other organisations on key projects.
	ORC will promote opportunities for communities to get involved in initiatives that support enhanced indigenous biodiversity by supporting and promoting community initiatives that provide opportunities for people to get involved; & encouraging new community initiatives where there are significant opportunities or issues.
Biodiversity Action Plan	Build on existing predator and weed control initiatives to develop and implement landscape scale programmes.
	Support community groups working to enhance biodiversity by providing advice, connections, and funding.

Predator Free Dunedin and Southern Lakes Sanctuary requests

[14] In March 2017, ORC signed a Memorandum of Understanding which, among other things, proposed to develop a formal relationship to collaborate on a project called 'Predator Free Dunedin' and for that relationship to be known as the 'Predator Free Dunedin Partnership'.

[15] In 2018 PFD submitted to the LTP 2018-2028 requesting ORC contribute to a shortfall in funds required to receive substantial funding from PF2050.

[16] At the time it was noted that:

a. the PFD bid to PF2050 was among the top two bids in the country however PF2050 wanted to see a stronger commitment from both the DCC (Dunedin City Council) and the ORC. Subsequently, the DCC committed $1.4 million to the project.

b. ORC is a signatory to the PFD Memorandum of Understanding and had provided in principle support for funding to be confirmed during the LTP process.

[17] ORC agreed to fund PFD $300,000 per year for five years (2018-2023), a total of $1.5 million.

Implementation Committee 2022.09.14

[18] ORC also supported PFD by including a site-led programme in the 2019-2029 RPMP for the main non-urban PFD areas that included the primary target pests.

[19] SLS made a PF2050 application in c.2021. It is understood that SLS was offered $8 million but were unable to secure matching non-crown funding to accept the grant.

[20] SLS then made a submission to the Long-Term Plan 2021-31 requesting ORC "renew its relationship with SLS and work collaboratively going forward in planning, discussion and ultimately funding". No funding amount was specified but SLS referred to funding in a manner like the support provided to PFD.

[21] A response to SLS in July 2021 advised that funding to directly support SLS was unable to be included in the LTP 2021-31.

[22] SLS submitted again to the 2022/23 Annual Plan to encourage ORC to budget for becoming a partner in the SLS project in a manner similar to PFD to facilitate co-funding funding with PF2050 Ltd and increase predator control work in Otago. This was unable to be supported, but discussion on that issue highlighted the lack of a consistent, transparent, and equitable process for dealing with large funding requests or partnerships.

[23] It is noted that SLS received c. $3 million in funding through Jobs for Nature in 2021 and both PFD and SLS have received ECO Fund grants for aspects of their projects either directly, or via their constituent groups.

OPTIONS

Biosecurity Strategy

[24] The Biosecurity Strategy outlines three different ways landscape scale and site scale biosecurity initiatives can be progressed:

a. Site-led programmes in the RPMP – for existing larger scale initiatives
b. Adding new site-led programmes – for new and future larger scale initiatives
c. Other site and landscape scale initiatives – for smaller scale initiatives

[25] The Biosecurity Strategy does not provide any guidance on what is considered 'larger scale' and 'smaller scale'; however, the categories imply larger scale initiatives should be formally included in the RPMP using Appendix 2 of the Biosecurity Strategy as guidance, and that smaller scale initiatives could be pursued outside the RPMP process.

[26] There is no further guidance on how these other initiatives are to be implemented or resourced. However, providing facilitation, support and participating in non-regulatory approaches would be something staff undertake through 'business as usual'. Any extra resourcing would need to be met through existing budgets, through ECO Fund applications, or through annual plan / LTP reviews.

[27] As outlined in the previous section, previous large scale biosecurity project opportunities have been considered through LTP or Annual Plan processes.

[28] ORC also directly funds some biosecurity projects through the provision of contestable funding (ECO Fund).

ECO Fund

[29] The ECO Fund was established in July 2018. To date, the ECO Fund has funded 89 projects totalling just over $1 million over 8 rounds. Each round has averaged around 27 applications being submitted and has been oversubscribed by around 300% on average.

[30] Additional contestable incentives community funding totalling $180,000 was provided for the following strategic LTP 2021-2031 priorities in the April 2022 round: sustained rabbit management ($100,000), native planting after wilding pine removal ($50,000) and native planting for water quality ($30,000). Council approved administration of this funding using ECO Fund processes on 23 February 2022. The additional incentives funding was ringfenced for each priority.

[31] Applications are limited to a maximum of $50,000 per project per application. This means that ECO Fund is generally supporting smaller scale projects or components of larger projects. In its current form, the ECO Fund in unable to support PFD and SLS-type partnerships. It is noted that the annual funding amount for PFD ($300,000) exceeds that of total ECO Fund ($290,000).

[32] To support large scale community biosecurity projects a larger funding pool for ECO Fund with ring-fenced funding for large-scale projects or programmes could be considered. This could be available less often e.g., every 3 years to coincide with the LTP development.

[33] The benefits of the ECO Fund framework include established criteria, brand and profile, and tested assessment, approval, and administrative processes.

[34] However, it would be necessary to modify some established processes for significant investment in large projects e.g., criteria, assessment, project oversight, accountabilities, and funding timeframes, to the point where a separate fund or alternative model may provide for more effective delivery.

[35] In addition, the scale of funding would need to increase significantly, e.g., $1 million every three years in addition to the existing ECO Fund.

RPMP Site-led programmes

[36] The RPMP includes a category of “pests to be managed under site-led programmes”. Site-led programmes seek to manage pests whose presence, at or nearby, threaten the values that are special to particular sites (protecting the values at the place).

[37] The Biosecurity Strategy provides for the addition of site-led programmes, or the amendment of an existing programme in the RPMP, where this meets the requirements of the *Biosecurity Act 1993* and results in positive benefits to the environment and people.

[38] Appendix 2 of the Biosecurity Strategy provides guidance for the addition of site-led programmes, but further detail and clarity of interpretation needs to be developed,

along with an agreed process, to enable a consistent and transparent approach for assessing for proposals.

[39] The RPMP identifies 4 site-led programmes: Otago Peninsula, West Harbour – Mt Cargill, Quarantine & Goat Islands (all in support of PFD), and management of lagarosiphon in Lake Wānaka, Kawarau River, Lake Dunstan, and Lake Wakatipu.

[40] ORC's focus for site-led programmes is education, advocacy and coordination, however regulatory and operational actions are in scope from an RPMP perspective.

[41] Funding allocated to the current four site-led programmes is $200,000 for 2022/23. This resourcing is for ORC to take a lead role in supporting community groups and agencies in achieving desired levels of protection for the sites.

[42] To support large scale site-led community biosecurity projects in a similar way to PFD, and as requested by SLS, significant additional budget would be required for the RPMP site-led programme.

[43] Advantages of this model include an existing framework for adding sites, a formal national biosecurity framework within which the model can run, and the relative ease of adding more groups into an overarching site-led programme.

[44] However, the scope of site-led programmes may not allow enough flexibility for all potential proposals to be considered, and funding may be less secure.

Partnerships funded through Long-Term Plan (LTP)

[45] Funding partnerships through Long-Term Plan commitments is a version of how previous requests for large funding by community groups (PFD & SLS) have been considered, that is, requests made through submissions to the draft Long-Term Plan.

[46] Both PFD and SLS requests were about contributing to a partnership arrangement. They were not specifically related to establishing site-led management programmes in the RPMP. However, PFD was successful and SLS was not. This outcome could have been influenced by timing and ORC having formally signed up to a partnership with PFD, but without a formal evaluation process it is difficult to explain the specific reasons for difference in outcome.

[47] Formalising this model would require development of a process and criteria for assessing proposals prior to the development of the draft Long-Term Plan so that any proposals that meet the criteria could then be consulted on. Strategic guidance that would assist in decision-making include the Biosecurity Strategy, Biodiversity Strategy, Biodiversity Action Plan and RPMP.

[48] This model (consideration of proposals through the Long-Term Plan development) would allow for public consultation and Council approval, and potentially allow more transparent evaluation of projects against other strategic priorities. It would also give certainty as to timeframes for proposals to be developed and allow a reasonable time between each assessment round (every 3 years for LTP).

[49] Consideration of proposals via this model may be more appropriate for the type of large-scale, long-term investments required for effective operational partnerships.

[50] However, the 3 years gap between opportunities to receive partnership funding may be too restrictive for some groups where co-funding is contingent on other funders e.g., SLS and PF2050 and is the funding window is time constrained.

Other considerations / opportunities

[51] An agreed model, process, and criteria for considering for biosecurity collaboration for biodiversity outcomes (or any other environmental partnerships) with external parties would be timely. It is anticipated that requests for funding from external parties will increase significantly in the short to medium term as central government funding initiated through the Covid-19 response (e.g., Jobs for Nature) is likely to be down-scaled leaving significant funding shortfalls for some groups and projects.

[52] In addition, ORC partnership funding to PFD is due to cease in 2023 and a thorough review of this project's outcomes should inform assessment of future investment alongside other partnership options. It is noted that this coincides with a significant reduction in government funding for the National Wilding Conifer Control Programme. The National Programme finishes in June 2024.

[53] SLS and PFD are not the only groups seeking large scale, long-term funding. ORC receives several informal and formal requests for funding or support each year. Some examples include the Marine Science Centre for citizen science programmes, Nga Whenau Rahui to meet a shortfall in funding a project in Otago, QEII for Remarkable Station rehabilitation, and NZ Landcare Trust for Owhiro stream catchment management and modelling.

[54] As of February 2022, 25 large projects in Otago have been funded by Jobs for Nature (J4N). These projects are worth $53m to the region and will be delivered over several years. Of these it is estimated between 10-20 could be expected to seek further large funding sources if J4N funding is not renewed. Note, that this includes catchment projects as well as biodiversity/biosecurity projects. In addition, large-scale site-led type projects are anticipated such as those seeking to implement ongoing possum control after OSPRI retreats from areas.

[55] Although it is unlikely that current levels of funding for Jobs for Nature (and other) community group-run projects can be maintained by the government sector, there is an opportunity for ORC to partner with already successful groups where there is a high likelihood that positive long-term environmental outcomes can be sustained.

[56] Such partnerships could achieve strategically aligned actions in the Biosecurity Strategy, Biodiversity Strategy, and Biodiversity Action Plan via proven projects with existing infrastructure, rather than having to start from scratch, which would be an efficient and potentially more effective way of establishing the core of an embedded operational partnership programme within ORC.

[57] The proposed Catchment Action Plans (Integrated Catchment Management) when developed, are likely to identify priorities and opportunities for large scale funding partnerships or other approaches for landscape scale outcomes. But this would also require some level of cross FMU / rohe comparison or assessment. Whatever the

process for assessing potential investments in opportunities for large scale environmental outcomes with external parties, it would need to be consistent, transparent, and equitable.

Other Regional Council Approaches

[58] Most other Regional Councils invest in biodiversity projects in some way. This can be via contestable community funding or direct partnerships such as that with the QEII National Trust, for example Hawke's Bay and Greater Wellington. Available Regional Council Biodiversity Strategies usually refer to community partnerships, funding and coordination but are not prescriptive in how they deal with large funding requests.

[59] An example from Taranaki Regional Council's Biodiversity Strategy 2017 (Section 5.3.4 "Iconic' and 'Significant' projects) states that "the Council works with other agencies or community groups on a small number of 'big-ticket' projects that contribute to the protection of a network of 'biodiversity-jewels' in the Taranaki 'crown', particularly those that showcase Taranaki's biodiversity and the value of communities and diverse groups working together. These projects are referred to as either iconic or significant projects. The level of TRC involvement is assessed on a case-by-case basis taking into consideration:

a. The project being based on sound scientific/ecological information
b. The project covering sites and areas recognised as having regionally significant biodiversity values
c. Strong and sustainable community and landowner support and active involvement
d. The ability for the Council to assist by providing technical support and/or leveraging funds from the community or central government
e. The ability of the project to become a public showcase of Taranaki's biodiversity (i.e., educational opportunities, level of public access etc), and
f. The benefits of investing ratepayer resources."

[60] Environment Canterbury (ECan) has supported the Predator Free Banks Peninsula project (110,000 ha) though funding of $600k each year. This partnership appears to be similar to ORC's involvement in PFD, in that a memorandum of understanding was entered into with multiple organisations, community groups and runaka for a community-led project (Banks Peninsula Conservation Trust). The Banks Peninsula Predator Free project proposal linked to ECan's Regional Biodiversity Strategy and other strategies. The MoU did not commit ECan to any financial obligations.

[61] Increasing funding and control of pests on Bank Peninsula was consulted on as a part of ECan's Long-Term Plan in 2018. In 2019/20 ECan decided to fund the Predator Free project through a portion of targeted rates.

[62] Predator Free seems to be the most common purpose for which Regional Councils enter into partnerships with community-led projects.

CONSIDERATIONS

Strategic Framework and Policy Considerations

[63] This paper is for discussion only so no strategic, or policy considerations are relevant at this stage.

Implementation Committee 2022.09.14

Financial Considerations

[64] None at this stage.

Significance and Engagement Considerations

[65] None at this stage.

Legislative and Risk Considerations

[66] Nil.

Climate Change Considerations

[67] There are no immediate climate change considerations for this work.

Communications Considerations

[68] None at this stage.

NEXT STEPS

[69] These depend on decisions of Council.

ATTACHMENTS

Nil

Implementation Committee 2022.09.14

Attachment 2 – ECO Fund Eligibility Criteria 2023

Who can apply for funding?

Funding is available for groups in the Otago region who are working on projects that will protect, enhance or promote the environment, including:

- Community groups
- Iwi/hapu
- Incorporated societies
- Community trusts
- Resident and ratepayer groups
- Landowner groups
- Educational institutes
- Individual landowners (Incentives Funding - biodiversity enhancement of protected private land only)

Projects must engage or involve the community (except for Incentives Funding - biodiversity enhancement of protected private land).

What can I get funding for?

The ECO Fund is available for projects that protect and/or enhance the environment including:

- Biodiversity (e.g., regeneration or planting of native vegetation)
- Biosecurity (e.g., pest plant or animal management)
- Water quality (e.g., riparian planting or wetland restoration)

The types of activities the ECO Fund can be used for includes:

- on-ground works
- education and capacity building
- awareness raising
- administrative support (up to 50% of the cost)

Funding is available for projects up to 3 years.

Funding is capped per project at:

- $50,000 (ECO Fund general & Incentives Funding - sustained rabbit management).
- $15,000 (Incentives Funding - biodiversity enhancement of protected private land, native planting for water quality, native planting after plant pest removal).

What won't be funded?

The ECO Fund does not provide funding for:

- Individuals (except for Incentives Funding - biodiversity enhancement of protected private land)
- government agencies or territorial authorities
- commercial or private gain
- projects created to comply with Resource Consent conditions
- responses to any actual or potential enforcement action
- the purpose of seed capital
- maintenance for existing projects

- retrospective costs

Applicants can only submit one application per funding round.

Applicants that have not completed reporting for previous grants are not eligible for funding.

Attachment 3 – Assessment Criteria 2023

Description	Scoring & guidance	
1. Project objectives are realistic, and actions are likely to achieve the objectives	• Setting a clear project objective helps track the success of the project. Objectives should be realistic and able to be achieved within the timeframe of the project. • The project should also outline what actions will be undertaken to achieve the objective. There should be a clear linkage between the action and the intended outcome. • Consider overall group objectives and assess specific project actions in application in terms of contribution to that overall group objective / vision. • Projects that are implementing existing catchment group plans could be considered as higher scoring.	4 = Objectives are realistic and highly likely to be achieved within the timeframe. Obvious links between actions and objectives 3 = Objectives are realistic and likely to be achieved within the timeframe. Some linkage between the actions and objectives 2 = Objectives could be achievable, but project planning does not clearly demonstrate how proposed actions will lead to objectives 1 = Objectives are limited, and actions are not linked to the project objectives and unlikely to be achieved within the timeframe 0 = Objectives are unrealistic, irrelevant or unachievable.
2. Project is technically sound	• The likelihood of a successful project is increased when the applicants are well informed or experts in the area. • Projects should demonstrate that the planned approach is technically feasible and reflects best management practice. • This could be through the expertise of the project applicants or through information they have sought and intend on implementing	4 = Proponent has sought appropriate advice and/ or have the relevant expertise. Best practice is clearly being proposed. 3 = Proponent has sought some advice and/ or has some relevant experience. Best practice is mostly being proposed. 2 = Proponent has sought some advice and/ or has some relevant experience. Best practice is not being proposed or is not clear. 1 = Proponent has not demonstrated advice was sought or what relevant experience is being utilised. Best practice is not being proposed or is not clear. 0 = Best practice is not being implemented and proposed techniques are questionable.
3. Impact of the project - scale	The impact a project can have can be assessed by: - Scale, how effective and far reaching will the project outcomes be - Longevity, how enduring will the project outcomes be - Intervention level, is the project addressing the cause or symptom of a problem	4 = Significant environmental benefits at a district or regional scale. 3 = Moderate environmental benefits at multi-site or local scale. 2 = Benefits are site scale. 1 = Benefits are likely but are indirect and/or intangible. 0 = No clear benefits to the environment.

4. Impact of the project - timeframe	The impact a project can have can be assessed by: - Scale, how effective and far reaching will the project outcomes be - Longevity, how enduring will the project outcomes be - Intervention level, is the project addressing the cause or symptom of a problem	4 = Environmental benefits for long-term. (20+ years) 3 = Environmental benefits medium-term (6-20 years). 2 = Environmental benefits short-term (<5 years). 1 = Benefits are likely but are indirect and/or intangible and timeframes are difficult to assess. 0 = No clear benefits to the environment over any timeframe.
5. Special site values	Projects that protect or enhance sites with special environmental values add value to the outcomes ECO Fund is seeking. Special site values could include: - At-risk or threatened species, - Rare or much reduced-ecosystem types. - Important or distinctive habitat types.	2 = Project involves both at-risk or threatened species and important ecosystem or habitat types. 1 = Project involves either at-risk or threatened species, or important ecosystem or habitat types. 0 = Project involves common species and/or ecosystem or habitat types.
6. Level of community engagement	A key objective for the ECO Fund is community involvement. This criterion assesses how much community involvement is being proposed and how far reaching that involvement may be.	4 = Project is led by a community group and engages with other members of the community. 3 = Project is led and implemented by a community group with some community engagement. 2 = Not led by community but involves community in the implementation 1 = No community groups involved but outcomes will benefit or be utilised by the community. 0 = No community involvement or benefit.
7. Value for money	• Considering any level of investment contributed by the applicant, that is, their level of investment is a good measure for value for money. • See Funding Details section in application. • Applicant investment can include in-kind contributions such as labour or volunteer hours ($20 per hour minimum), monetary input from the group itself or project partners. • However, contributions from other grants are not considered applicant's investment and should not be used to leverage funding.	4 = Project is more than 1:1 cost sharing between fund requested and fund contributed 3 = Project is 1:1 (or within 5%) cost sharing 2 = Project is 1:2 applicant vs ECO Fund requested 1 = Project has some applicant contribution but not clear or costed 0 = Project relies solely on ECO Fund and/or other grants

8. New applicants	• It is good to encourage new applicants to access funding. • However, previous applicants are also typically involved in good works and maintaining momentum can be good. • Some previous successful applicants may not have completed all previous commitments, e.g., reporting.	2 = New applicant or previously unsuccessful applicant to the ECO Fund (with eligible project) 1 = Previous successful applicants with all requirements completed on time 0 = Previous successful applicant with outstanding reports or other commitments
9. Other funding	• ECO Fund has many repeat applicants and some with significant other funding to achieve their objectives, enabling them to commit resources to applying for additional funding. • Community groups without significant additional funding should receive a boost to their score to encourage new groups, new projects and a diversity and spread of ECO Fund projects.	2 = Community group has no other significant funding sources (total <$100k) 1 = Community group has other significant funding sources (total $100-$500k) 0 = Community group has other significant funding sources (total >$500k)

9.5. Future of the ICM working Group

Prepared for:	Environmental Implementation Committee
Report No.	OPS2343
Activity:	Governance Report
Author:	Anna Molloy, Principal Advisor Environmental Implementation Sophie Fern, Catchment Action Planner
Endorsed by:	Gavin Palmer, General Manager Operations
Date:	8 November 2023

PURPOSE

[1] To seek a pathway forward for the continued oversight of the Integrated Catchment Management (ICM) Programme now that the work of the Integrated Catchment Management Working Group (ICMWG) is complete, the pilot Catchment Action Plan (CAP) is underway, and the ICM programme is moving into a new area.

EXECUTIVE SUMMARY

[2] The ICM Programme comes from the ORC's Long-Term Plan 2021-31 (LTP) commitment to "lead the development, implementation, and review of integrated Catchment [Action] Plans in collaboration with iwi and community". While this is the LTP text, the intent of the ICM Programme is for ORC and iwi, in partnership, to work with the community and stakeholders to develop a plan of action for the long-term management of the catchment.

[3] An Integrated Catchment Management Working Group (ICMWG) was established to ensure that mana whenua, community and others were involved in the ICM process. The ICMWG includes representatives from the Catlins community, Otago Catchments Community (OCC), ORC councillors, representatives from Aukaha and Te Ao Marama, and staff from ORC. The ICMWG began meeting in February 2023. The Group's Terms of Reference state that "The ICM Working Group's role will be revisited once the CAP development is underway".

[4] The pilot Catchment Action Plan (CAP) area is the Catlins Freshwater Management Unit (FMU) and the CAP development process began in October 2023.

[5] On the 20 September 2023, the Council endorsed a CAP rollout sequence where the programme progresses to the Upper Lakes rohe in April 2024 and the Taiari FMU in October 2024.

[6] This paper presents a recommendation for the continued oversight of the ICM Programme.

RECOMMENDATION

That the Environmental Implementation Committee recommends that Council:

1) ***Notes** this report.*
2) ***Adopt** Option 1 as the preferred option, being the continuation of the Integrated Catchment Management Working Group (ICMWG) to provide oversight of the ICM Programme.*

3) ***If Option 1 is adopted, agrees*** *to the Terms of Reference in Attachment 1*
4) ***Notes*** *the proposed timeframe for continued work on the ICM programme during 2023 - 2024.*

BACKGROUND

[7] Integrated Catchment Management (ICM) was first proposed to Council in a workshop in October 2020. Council signalled its intent to pursue an ICM approach through the Long-term Plan 2021-31 by including the performance measure for ORC to "Lead the development, implementation, and review of integrated Catchment Plans (ICP) in collaboration with iwi and community".

[8] At the 10 August 2022 Strategy and Planning meeting, the ICM Working Group (ICMWG) was endorsed, the Working Group's key tasks were identified, and the Catlins Freshwater Management Unit (FMU) was selected as the pilot CAP. An update on the progress on these tasks was presented to Council on 28 June 2023, and the 9 August 2023 Environmental Implementation Committee Meeting agreed to the next two rohe and FMU in the CAP rollout sequence (Upper Lakes rohe and Taiari FMU).

[9] The 20 September 2023 Council meeting agreed to the formation of the Catlins Integrated Catchment Group (ICG) to develop the Catlins CAP. This group began meeting in October 2023, and its work is scheduled to be complete in October 2024. As the Catlins is the pilot CAP, the CAP development process will be independently evaluated, and the findings of the evaluation will be incorporated into future CAP processes.

[10] Now that the ICMWG's tasks are complete and the CAP development process is underway, the ICMWG's role needs to be re-visited and a framework needs to be developed for the continued oversight of the ICM programme.

DISCUSSION

Why does the ICM programme need a continued Working Group?

[11] The ICMWG's 28 September 2023 meeting discussed the future of the ICMWG. The meeting agreed that the ICMWG has worked very well. The group's Catlins community members have provided invaluable advice and opened doors to the community, and that community members are really important and help frame the Terms of Reference specific to the area. Furthermore, the meeting agreed that a group similar in structure and remit to the existing ICMWG should continue.

[12] The current ICMWG suggested that such a group should contain a core membership to keep a consistent focus (Chair, Aukaha, Te Ao Marama, Otago Catchment Community, and ORC staff), and add members with strong community ties (community members and ward Councillors) relevant to each FMU/rohe as the ICM work progresses.

[13] The ICMWG also suggested that the new Working Group meet quarterly rather than the current monthly meeting schedule. However, to meet intended timeframes it is recommended that the ICMWG meet at least every two months or more frequently if needed.

[14] The Terms of Reference (ToR) for the Catlins ICG (the group that is developing the Catlins CAP) reinforce the need for a continued Working Group. The ToR includes

recourse to the ICMWG should there be vacancies or a need to replace an individual in the Catlins ICG, and as dispute resolution, should that occur.

[15] These points suggest that there is a need for a continued ICMWG with an updated Terms of Reference incorporating learnings from the current ICMWG.

Options

[16] Option 1: the ICMWG continues in a revised form as oversight for the ICM Programme.

[17] Option 2: The ICMWG ceases and oversight of the ICM Programme is held within ORC.

[18] Option 1 is recommended as the ICMWG has enabled ORC to partner with mana whenua more effectively in the development of the ICM Programme and the CAP development framework, provided very valuable insights and connections to the community, and supported communication and promotion of the ICM Programme in the region.

[19] Option 2 would remove these benefits.

Revised Terms of Reference for a continuing ICMWG

[20] If a continuation of the ICMWG is approved, a draft revised Terms of Reference is included at Attachment 1 for consideration. Key changes are outlined below.

[21] The revised purpose of the ICMWG is suggested as "to implement and review the ICM framework and to provide guidance on place and community specific issues as they pertain to the CAP rollout".

[22] The ICMWG's suggested new tasks include but are not limited to:

a. Review and input to a stocktake of current and planned iwi, catchment and community group, and ORC initiatives before Catchment Action Plans are begun in each FMU or rohe.
b. Review and recommend an appropriate collaborative group format for each new CAP area as it rolls out.
c. Review and discuss CAP development (including the appropriate collaborative format as above) across the region.
d. Be involved in the evaluation of the Catlins Pilot CAP including reviewing evaluation questions with the ICM Team and external evaluator and providing evidence where appropriate.
e. Making recommendations to Council for the ongoing implementation of the ICM Programme (as relevant to the ICMWG's purpose).

[23] The proposed revised membership of a continuing ICMWG is:

a. A core group consisting of:
    i. ICMWG Chair - 1
    ii. Aukaha representative - 1
    iii. Te Ao Marama representative - 1
    iv. Otago Catchment Community representative - 1
    v. ORC staff – 2 - General Manager Operations and Strategy Manager (or their representatives).

b. Additional members added as the ICM Programme progresses to each new CAP area consisting of:
    i. Community members with strong ties and networks within the community – an appropriate number (but maintaining and manageable working group size).
    ii. ORC Councillor – a Councillor with connection to the area

These members terms would cease once the relevant CAP is underway.

Timeline

[24] Depending on approval of the above recommendations, an approximate timeframe for work over 2023 - 2024 is outlined in Table 1 below. This is approximate and subject to change as this is a new process with unknowns, and the ability to adapt and change direction if needed is essential.

Table 1: ICM Programme Indicative Timeframe 2022-2024

Activity	Timing	Comment
Establish revised ICMWG	November-December 2023	Depends on availability and response from nominated representatives.
Catlins CAP development evaluation begins	November 2024	A draft evaluation plan will be reviewed by the ICMWG
Determine Upper Lakes CAP approach	December 2023	ICMWG to advise on this.
Upper Lakes community meeting(s)	February 2024	Depending on the approach determined above a community meeting may be held similar to the Catlins approach.
ICMWG recommend Upper Lake collaborative group membership (if appropriate). Stocktake of Upper Lakes activities review	March 2024	ICMWG to review expressions of interest and recommend membership to Council for appointment.
Upper Lakes CAP development starts	April 2024	
Determine Taiari CAP approach. Recommend next CAP rollout to Council	May-June 2024	ICMWG advise on this.
Taiari community meeting(s)	July 2024	Depending on the approach determined above a community meeting may be held similar to the Catlins approach.
ICMWG recommend Taiari collaborative group membership (if appropriate). Stocktake of Taiari activities review	Early September	ICMWG to review expressions of interest and recommend membership to Council for appointment.
Taiari CAP development starts	October 2024	
Determine next CAP area approach (if appropriate)	November 2024	ICMWG to advise
Catlins CAP Evaluation ends	December 2024/January	ICMWG and those involved in

	2025	Catlins initiation review evaluation.

CONSIDERATIONS

Strategic Framework and Policy Considerations

[25] The ICM Programme is a significant new approach for ORC. It is implementing the commitment of Strategic Directions to deliver integrated environmental management through an ICM approach.

[26] The development of CAPs will align with the current Land and Water Regional Plan policy approach and action plans to meet the National Policy Statement for Freshwater Management requirements will be incorporated into the CAPs.

Financial Considerations

[27] The cost to ORC for facilitating the Working Group has been accounted for in the ICM budget.

[28] Members of the group will not be remunerated by ORC.

Significance and Engagement

[29] The co-design process used by the ICM programme fosters collaboration between mana whenua, community, ORC and other stakeholders.

Legislative and Risk Considerations

[30] There are no legislative requirements that need to be considered at this stage.

Climate Change Considerations

[31] There are no immediate climate change considerations for this work.

Communications Considerations

[32] A communications plan for the ICM programme has been developed with the ICMWG and is currently being used.

[33] Advice on communications in individual FMU/rohe will be sought from the community representatives and ward councillors who are added to the core ICMWG in each FMU/Rohe.

NEXT STEPS

[34] If approved, the next steps will be to progress the actions specified in the recommendations.

ATTACHMENTS

1. ICM Working Group Updated Terms of Reference DRAFT [**9.5.1** - 4 pages]

OTAGO INTEGRATED CATCHMENT MANAGEMENT (ICM) WORKING GROUP UPDATED TERMS OF REFERENCE – NOVEMBER 2023

1. ICM PROGRAMME VISION

The overall vision for the ICM programme is that:

- ICM is an accepted way of operating throughout Otago, and
- ICM is implemented through catchment action plans (CAPs) developed and delivered in collaboration with mana whenua, community and other stakeholders.

2. SCOPE OF THE ICM PROGRAMME

The ICM Programme comes from the ORC's Long-Term Plan commitment to "lead the development, implementation, and review of integrated Catchment [Action] Plans in collaboration with iwi and community". While this is the LTP text, the intent of the ICM Programme is for ORC and iwi, in partnership, to work with the community and stakeholders to develop a plan of action for the long-term management of the catchment. This is broadly grouped into three phases:

- 2021/22 - commence development of an integrated catchment planning programme and report to Council on progress by 30 June.
- 2022/23 - commence spatial systems and analysis to inform and define ICP programme by 30 June.
- 2023/24 - Prepare Integrated Catchment [Action] Plan.

The pilot CAP process began in the Catlins Freshwater Management Unit (FMU) in October 2023, the next CAP will begin in the Upper Lakes rohe in April 2024, followed by the Taiari FMU in October 2024. Further discussion and approval will be sought from Council for the other areas of Otago where CAPs are to be developed and the order this will occur.

3. PURPOSE OF THE ICM WORKING GROUP

The new ICM Working Group's purpose is to implement and review the ICM framework and to provide guidance on place and community specific issues as they pertain to the CAP rollout.

4. TASKS OF THE ICM WORKING GROUP

The key tasks for the new ICM Working Group include (but may not be limited to):

a. Review and input to a stocktake of current and planned iwi, catchment and community group, and ORC initiatives before Catchment Action Plans are begun in each FMU or rohe.
b. Review and recommend an appropriate collaborative group format for each new CAP area as it rolls out.
c. Review and discuss CAP development (including the appropriate collaborative format as above) across the region.

Document Version: 1.1
Date: 30 October 2023

d. Be involved in the evaluation of the Catlins Pilot CAP including reviewing evaluation questions with the ICM Team and external evaluator and providing evidence where appropriate.
e. Making recommendations to Council for the ongoing implementation of the ICM Programme (as relevant to the ICM Working Group's purpose).

The ICM Working Group's role will be revisited once the Taiari CAP development is underway in October 2024.

5. RESPONSIBILITIES OF ICM WORKING GROUP MEMBERS

Individual ICM Working Group members should:

- Review and analyse any documents or material provided for ICM Working Group meetings.
- Actively participate in meetings through attendance, discussion, bringing ideas and working with other members.
- Communicate the objectives and progress of the ICM programme to their networks internally and externally (where appropriate).
- Provide input relevant to their area of expertise or experience to support the tasks of the ICM Working Group.
- Provide for an alternate representative to attend meetings if required or appropriate.
- Advise if any risks arise that are likely to affect delivery of the tasks above and to be part of the risk reduction process.

6. RESPONSIBILITIES OF THE PROGRAMME COORDINATOR

The Programme Coordinator is the Principal Advisor Environmental Implementation. The responsibilities of the Programme Coordinator are to:

- Coordinate and support the activities of the ICM Working Group.
- Develop draft proposals, plans or deliverables for ICM Working Group review and input.
- In collaboration with the Chair, set the agenda and purpose for each ICM Working Group meeting based on input from the ICM Working Group where appropriate.
- Report on progress of the ICM Working Group to the appropriate Council Committee.
- End each meeting with a summary of decisions and actions and confirm responsibility.

7. GENERAL

7.1 CORE MEMBERSHIP

The table below lists the core membership of the ICM Working Group.

Organisation	Role	Name
Aukaha	Principal Planner - Mana Taiao	Sandra McIntyre
Te Ao Marama	Kaitohutohu Matua	Maria Bartlett
Otago Regional Council	Deputy Chair	Cr Lloyd McCall
Otago Regional Council – Staff	General Manager Operations	Gavin Palmer
Otago Regional Council – Staff	Manager Strategy	Hilary Lennox

Document Version: 1.1
Date: 30 October 2023

7.2 FMU/ROHE SPECIFIC MEMBERSHIP

Additionally, approximately six months before work begins in a new FMU/rohe, community members and a councillor from that FMU/rohe will be invited to join the ICM Working Group to provide FMU/rohe specific advice. These FMU/rohe specific members will remain on the ICM Working Group until an Integrated Catchment Group (if appropriate) is established in that FMU/Rohe.

7.3 CHAIR

The chair of the ICM Working Group will be nominated and agreed to by core members of the ICM Working Group at their first meeting. The Chair roles will be re-nominated and agreed every 12 months.

The Chair of the ICM Working Group's role is to:

- Set the agenda for meetings (in collaboration with the Programme Coordinator).
- Encourage broad participation and discussion from all members.
- Maintain focus of the ICM Working Group on key tasks and purpose.
- Review and endorse meeting papers, where appropriate.
- Liaise with the Integrated Catchment Group Chairs if/as required.

7.4 QUORUM

A minimum number of four core ICM Working Group members are required for effective advisory purposes.

7.5 FREQUENCY AND LOCATION OF MEETINGS

The ICM Working Group will meet bimonthly at a time and place suitable to the Group members. Additional meetings will be canvassed with the Group's members if extra meetings are required.

Meetings will aim to be held in person, with an online option available.

7.6 AGENDA, MINUTES, AND SUPPORTING PAPERS

Where possible, a package will be sent to members at least three business days in advance of an ICM Working Group meeting. This package will include the following:

- Agenda for upcoming meeting.
- Minutes of previous meeting.
- Any other documents/information to be considered at the meeting.

7.7 ALTERNATES

Core members of the ICM Working Group can send alternates to meetings. Alternates are entitled to participate in discussion and provide expert advice. ICM Working Group members will inform the Programme Coordinator as soon as possible if they intend to send an alternate to a meeting.
The chair may also appoint an alternate in their absence.

Document Version: 1.1
Date: 30 October 2023

7.8 TERM OF THE ICM WORKING GROUP

The term for the ICM Working Group is from the first meeting (provisionally December 2023) and the need, purpose and/or membership for the ICM Working Group will be reviewed by ORC once the Taiari CAP process is underway (estimated to be in October 2024).

Document Version: 1.1
Date: 30 October 2023