Our Ref A1023771

Committee meetings Wednesday 2 August 2017

Following are the agendas for the Committee meetings to be held on Wednesday 2 August 2017, commencing at 9:00am

The venue is the Council Chamber, 70 Stafford Street, Dunedin, and members of the public are welcome to attend.

Any full detailed reports referred to in the agendas are available on the Council website, or by contacting the Committee Secretary – see contact details below.

Committee agendas

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OTAGO REGIONAL COUNCIL

Agenda for a meeting of the Communications Committee to be held in the Council Chamber, 70 Stafford Street, Dunedin on Wednesday 2 August 2017, commencing at 9:00am

Membership:
Cr Michael Deaker (Chairperson)
Cr Carmen Hope (Deputy Chairperson)
Cr Graeme Bell
Cr Doug Brown
Cr Trevor Kempton
Cr Michael Laws
Cr Ella Lawton
Cr Sam Neill
Cr Andrew Noone
Cr Gretchen Robertson
Cr Bryan Scott
Cr Stephen Woodhead

Apologies: Cr Noone

Leave of Absence: Cr Neill

In attendance:

Please note that there is an embargo on agenda items until 08:30am on Monday 31 July 2017

CONFIRMATION OF AGENDA

CONFLICT OF INTEREST

PUBLIC FORUM

MINUTES

The minutes of the meeting held on 14 June 2017, having been circulated, for adoption.

ACTIONS

Status report on the resolutions of the Communications Committee.

Report No.	Meeting	Resolution	Status
2017/0848 Waiwera River Catchment Water Quality Study	14/6/17 Technical Committee	*That a stakeholder engagement proposal is brought to the next Communications round.*	CLOSED. Item 1 of the agenda.

PART A – ITEMS FOR NOTING

Item 1
2017/0906 **Stakeholder Engagement Report.** Acting DSE, 14/07/2017

Reporting on the community, stakeholder and staff engagement activities carried out by Stakeholder Engagement directorate staff for the period 27 May to 14 July 2017

Three appendices to the report, circulated with the agenda:

1. A list of upcoming events the Stakeholder Engagement directorate are involved in, as at 14 July 2017.

2. The Otago Regional Council report *"Our Lakes – How the Communities of Queenstown and Wanaka use and value their lakes"*

3. The Otago Regional Council's *"Waiwera Water Quality Community Engagement Plan"*

Item 2
2017/0958 **Communications Committee – New Website, July 2017.** Acting DSE, 14/07/2017

The report highlights the redvelopment progress of the ORC's website to improve the user experience and allow for more self-service when engaging with ORC online.

OTAGO REGIONAL COUNCIL

Minutes of a meeting of the Communications Committee held in the Council Chamber, 70 Stafford Street, Dunedin on Wednesday 14 June 2017, commencing at 5:43pm

Membership:	**Cr Michael Deaker** (Chairperson) **Cr Carmen Hope** (Deputy Chairperson) **Cr Graeme Bell** **Cr Doug Brown** **Cr Trevor Kempton** **Cr Michael Laws** **Cr Sam Neill** **Cr Andrew Noone** **Cr Gretchen Robertson** **Cr Bryan Scott** **Cr Stephen Woodhead**
Apologies:	Cr Deaker Apology accepted.
In attendance:	Peter Bodeker (CEO) Nick Donnelly (DCS) Michele Poole (acting DSHE) Gavin Palmer (DEHS) Scott MacLean (DEMO) Fraser McRae (DPPRM) Lauren McDonald (Committee Secretary)

Cr Hope chaired the meeting in the absence of Cr Deaker

CONFIRMATION OF AGENDA
No changes to the agenda.

CONFLICT OF INTEREST
No conflicts of interest advised.

PUBLIC FORUM
No public forum held.

MINUTES

The minutes of the meeting held on 3 May 2017, having been circulated, were adopted on the motion of Crs Woodhead and Noone.

Ms Poole provided an update on the community papers included in media monitoring. She advised two community papers have been added, the Clutha Leader and the Waitaki Herald. A request was made for the Cromwell News to be included in the clippings service.

ACTIONS

Status report on the resolutions of the Communications Committee.

Report No.	Meeting	Resolution	Status
2017/0664 Director's report	22/3/17	*That ORC construct a simple explanation of water issues and how they interact, for water quality and water quantity.*	CLOSED To be included in the next publication of ORC Waterlines due for release by 30 June 2017

PART A – ITEMS FOR NOTING

Item 1
2017/0814 **Stakeholder Engagement Report.** DSE, 26/05/2017

The report outlined the community, stakeholder and staff engagement activities carried out by Stakeholder Engagement directorate staff for the period 14 April to 26 May 2017 and included a list of upcoming events the Stakeholder Engagement directorate are involved in.

The report *Otago Regional Council's Water Quality Awareness Survey – May 2017* was appended to the report.

Discussion held on the Water Quality Awareness Survey

Concerns were expressed in regard to the sample size of the survey (300 participants) and the value of the statistics gained, level of uptake for water quality testing by farmers, and progress of change of attitude/behaviour at 'grass roots' level.

Mr Bodeker confirmed the survey was undertaken as an Annual Plan target and a large survey would require additional funding.

Cr Bell left the room at 5:54pm and returned at 5:57pm.

Discussion was held on what communications would assist in affecting change of water quality behaviours and practice, i.e. reinforcing of compliance requirements.

Mr Bodeker commented that Council had the responsibility and ability to affect behaviours through an enforcement method, which will come in force in 2020. The current approach has been on education and communication rather than compliance.

Ms Poole advised for future research a review of the communications strategy could be undertaken, including the methodology, sample size and outcomes.

Mr Bodeker advised an update would be provided to Council through his CE report on monitoring and communications needed to see improvement on water quality compliance (including environmental risk assessments) to the 28 June Council meeting.

A request was made for a copy of the Pollution guidebook to be provided to councillors prior to its distribution.

Moved Cr Noone
Seconded Cr Neill

That this report be noted.

Motion carried

The meeting was declared closed at 6:15pm

Chairperson

Otago Regional Council

REPORT

Document ID: A1015176
Report Number: 2017/0906
Prepared For: Communications Committee
Prepared By: Stakeholder Engagement Directorate
Date: 14 July 2017

Subject: **Communications Committee – Activity Report July 2017**

This report records stakeholder engagement activity between 27 May and 14 July 2017.

1. WATER QUALITY

Our staff have undertaken engagement activities and events under the council's rural water quality programme (W3) with a range of stakeholders. The specific objective for stakeholder engagement activity, as outlined in the 2016-17 Annual Plan, is to achieve 90 percent landholder awareness of the rules. This is measured using a stakeholder survey and was achieved at 91%.

1.1. Field days, workshops, and presentations

1.1.1. Industry-led activities

i. North Otago Dairy Working Group – 29 May

Liaison staff hosted a meeting of the North Otago Dairy Working Group along with ORC Environmental Monitoring staff, who gave an overview of the season from ORC's perspective and the group reviewed their season to date.

Over the last 12 months the NODWG has provided on-farm advice and plans to 12 dairy farmers. The discussions helped farmers understand the water plan and also helped them put solutions in place to solve any issues that they had. We have also helped at-risk farms with 20 WOF's on farm to help improve effluent management and identify their risks. The principal benefit of the NODWG is assessed as improving communication between stakeholders in North Otago, understanding the issues that farmers face, joint communications and events from the group and addressing at-risk farms in the area.

ii. Clinton School visit – 1 June

Liaison staff talked to Rooms 3 and 4 at the Clinton School about water in their local stream. Unfortunately, the weather prevented a field trip to the Kuriwao stream, but there was a good discussion on where their water comes from, what is living in it, and why it is important to protect it. Some of the students had also brought in water from their home properties which they inspected through the clarity tube.

iii. Mid Otago Farm Forestry Field day – 9 June

Liaison and Environmental Monitoring staff attended a field day at the Fulton Hogan forestry block at Henley with 12 farmers and forestry people.

The focus of the field trip was to visit an operational skid site with an opportunity to discuss the requirements and technology now available for the logging industry. There were questions around working around waterways, but the main message from Council staff was that environmental considerations need to be addressed in the planning stages of any new block being logged and at planting.

iv. Pomahaka Water Care Group – Water test summary meetings Clinton and Tapanui – 14 June

Liaison staff attended the meetings which were presented by group chairman Lloyd McCall and Landcare Trust Project Facilitator Craig Simpson. Over 25 people attended the Clinton meeting and more than 30 attended at Tapanui.

The meetings were an opportunity for people in the catchment who are involved with the project to get an overall summary of the results for the season. Council staff answered questions regarding the implementation of the Water Plan rules.

v. Clutha Development Trust Project Meeting – 19 June

Liaison staff attended a meeting of the project team including representatives from industry groups and other organisations such as Federated Farmers, DairyNZ and Fish and Game to discuss the summary of findings from the last year's testing. It was also noted that the group will need to consider its income streams as its funding from the Sustainable Farming Fund is in its last year.

vi. Beef and Lamb Land Environment Plan level 2 (LEP) workshop – 21 June

Six staff from the AgResearch team at Invermay attended this LEP workshop. The day comprised a brief rundown of the LEP1 programme, a presentation on the Water Plan for Otago rules from ORC Liaison staff, and then the staff completed the LEP level 2 workshop using the Invermay farm as an example.

This was the first opportunity that some of the staff have had a chance to discuss our Water Plan.

vii. ANZ Bank Rural Professionals Presentation – 21 June, Dunedin

ORC Liaison staff presented to fifteen ANZ Bank Rural Professional staff. The presentation gave an overview of the Water Plan rules, landowners' compliance requirements, and the various catchment initiatives occurring throughout Otago.

Discussion then moved on to how the bank can advocate and support their customers to get the best environmental results. There seemed to be a real willingness for the bank to become more involved in this area.

viii. Meeting with Primary Land Users Group (Waikato) – 27 June

Group Chairman Lloyd McCall and Landcare Trust Project Facilitator Craig Simpson joined Liaison staff in meeting with representatives from the Primary Land Users Group (PLUG) in Waikato to discuss the catchment group model and how the group was established.

PLUG was particularly interested in why the Pomahaka Water Care Group formed, what was involved in keeping it going and what results had been achieved so far. Liaison staff answered questions regarding the Water Plan and how it influenced the actions of the group and how this Council supports catchment groups.

Figure 1: Discussions about the Pomahaka Water Care Group (PWCG) Project. From left: Rebecca Begg (ORC), Lloyd McCall (PWCG), Jim Cotman (PLUG), Leanna Birch (PLUG), Craig Simpson (Landcare Trust).

ix. Beef+Lamb wintering field day Heriot – 28 June

Liaison staff attended a wintering field day held by Beef and Lamb at the Heriot Hall which attracted more than 40 people. The focus of the day was wintering stock on fodder beet, environmental management with a case study of some riparian planting at a local farm and a farm accounting segment. While ORC Liaison staff did not have a speaking role, there was significant discussion around our Water Plan rules which were able to be clarified with the group on the day.

1.1.2. Community-led activity

North Otago Sustainable Land Management Society (NOSLaM) – 6 July

The North Otago Sustainable Land Management Society recently advertised for the vacant coordinator/facilitator position for its flagship initiative in North Otago. There were a significant number of applications and interviews were held on 6 July in Oamaru. ORC Liaison staff were on the interview panel. It was pleasing to see the quality of candidates and exciting that a coordinator will soon be appointed.

Once the coordinator is appointed, further pod group meetings for other areas in the Kakanui catchment are planned over the next few months.

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1.2. Media and promotion for rural water programmes

1.2.1. Irrigation NZ Magazine

The winter issue was printed in June and we are now preparing for the spring issue. Articles will include a case study of irrigation in South Otago, updates on developing a plan change for residual flows, and the Arrow River/Wakatipu Basin minimum flow consultations, and a general update on work ORC has been doing.

1.2.2. Waterlines

The winter edition of Waterlines newsletter was distributed in late June and includes write-ups about an estuary study, a wetland restoration project, 2016/17 dairy inspection results, North Otago farmers working together to improve water quality, tips for winter grazing, a day in the life of an environmental officer (lake testing), a case study about a farmer using technology to help with irrigation, a profile of Fish and Game, and information about deemed permit transitions. We are currently planning the spring issue. In response to feedback from readers, one of the articles will outline ORC's enforcement process and options.

1.2.3. 'Good Water in Otago – ORC' Facebook page

There are currently 620 'likes', and we post approximately twice a week. Total reach from 27 May to 3 July was 2832, which is a decrease on the last reporting period.

1.2.4. On-Stream

The seventh issue was emailed to 279 subscribers on 19 June. It included a feature on the results for the water quality survey, and winter grazing, as well as the regular summaries from the four liaison specialists.

2. WATER QUANTITY

We have led several engagement activities and events under the council's Water and Deemed Permit renewal project (W4) with a range of stakeholders in the last month. The objective for this activity is to support permit holders to form groups to manage water availability at a local level.

2.1. Water and deemed permit renewal project

i. Water user group meetings

The following meetings with priority groups have been held or are scheduled:

Meetings held	
Crown Terrace	10 May
Coal Creek (Teviot)	10 May
Upper Manorburn	13 June

Upcoming meetings	
Statutory bodies	Early August
Planning consultants	Mid-August
Manuherikia tributaries	4 meetings TBC

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ii. Round 1 and 2 meetings

Round 1 (overview of the deemed permit replacement programme) and round 2 where the statutory bodies (iwi, DoC, and the Otago Fish and Game Council) meet with catchment groups have been completed for priority groups. The statutory bodies group are referred to as affected parties with respect to permit applications.

The two rounds of meetings pave the way for consultants to lead groups through an important step of facilitating discussions between deemed permit holders and the affected parties regarding residuals flows, leading to written approvals to accompany the application to replace their deemed permits. Fish and flow data is required to assist with discussions. In particular, the fish data must be of an appropriate and consistent standard.

Following meetings and discussion with the three statutory bodies, a protocol for fish survey data has been completed which will ensure there is consistency amongst the professional group involved in fish surveys. In addition to the quality of fish survey, certainty is required for the number of surveys required per tributary. The numbers per tributary were being compiled at time of writing and were to be available by the end of July.

With regard to flow data, the Council can provide this information for tributaries where flow recorders are installed. Alternatively, modelled flows can be provided.

Once the information has been collated it provides the basis for discussing and setting a suitable residual flow to maintain existing instream values and or the natural character of that particular waterway and is a key part of the Environmental Assessment section for replacing a deemed permit.

iii. Round 3 meetings

Topics for a series of round three group catchment meetings is being prepared and will include the following topics:

- Outlining fish survey requirements per tributary (number of sites per tributary, quality of surveys, and potential Council involvement and assistance)
- Flows per tributary, availability and method
- Group sharing of water within tributaries during lower flows
- The need to apply for section 417 easements where water is conveyed across neighbouring properties from the point of take

2.2. Media and promotion for water quantity programmes

2.2.1. Retiring deemed permits forum follow-up survey

In follow-up to March's Retiring Deemed Permits Forum, attendees and others are being invited to complete an online survey to find out more about their experience at the forum and what ORC can do to help them with their transition to a new RMA water permit.

A letter outlining where to find information from the Forum, as well as inviting participation of the survey was to be sent in late July so not to conflict with information about the Clarifying Residual Flows consultation, which is taking place in early August. The schedule of community meetings for the latter consultation is included as Annex 1 to this report.

2.2.2. Waterlines

The winter edition of the Waterlines newsletter has been distributed. It included articles on

- Otago Fish and Game
- National interest in the expiring deemed permits
- ORC advice on how to get the information you need to replace your deemed permit
- A diagram showing the water quantity and quality projects being undertaken at present

2.2.3. Arrow River and Wakatipu Basin Aquifer minimum flows

ORC communications staff provided all the promotion and materials for the drop-in sessions held in Arrowtown and Frankton in June. Around 70 people attended the sessions, and our liaison specialists supported policy and science ORC staff at those sessions.

3. ENVIROSCHOOLS

As set out in the Annual Plan 2016-17, ORC provides the regional coordination of the Enviroschools programme in Otago.

3.1 Year 7-10 Hui

In all, 24 students from six Dunedin schools attended the Enviroschools Puaka Matariki hui held at the Otago Museum. The Museum made the planetarium available free of charge and gave a show featuring the Matariki stars. Students learned how to make Manu Aute (Kites) from flax and raupo. Students and teachers spent some time in the afternoon planning their school garden plantings for spring.

3.2 Otago Girls now a Green/Gold school

Enviroschools are encouraged to undertake a holistic reflection every three years. They celebrate their achievements and plan the next steps in their sustainability journey. A Green/Gold school has a sustainability lens across the whole school, including policies, in the curriculum and everyday practices. Otago Girls is the first secondary school to reflect at Green/Gold in Otago. Congratulations to students and staff at Otago Girls on their achievements.

Figure 2: Otago Girls' students with their Green/Gold certificate

3.3 Sustainable heating in Otago Schools project

Toimata Foundation, the Enviroschools' National body, is leading a collaborative project in Otago exploring how school communities can move away from coal fired boilers. Potential partners in this project are Otago Enviroschools, ORC, DCC, the Ministry of Education and the Ministry for the Environment. The aim is to develop practical solutions for sustainable school heating and teaching resources to support this work.

3.4 Carisbrook Students present their petition on plastic bags

Last year Carisbrook School investigated waste and a group of students launched a petition to ban the single use plastic bags. They presented this petition to MP Claire Curran on the steps of Parliament on the 28 June. Students learned by participating in the political process and are very motivated to continue working on the waste issue.

3.5 Otago and Southland Enviroschools facilitator workshop

Sandy Bell-Jameson from Toimata Foundation led a workshop for Otago and Southland facilitators in Dunedin on 26 June. This provided valuable professional development and also a great opportunity to build relationships across the two regions. We aim to make this an annual event.

4. GENERAL PUBLIC AWARENESS ACTIVITY

As set out in the 2016/17 annual plan, we are committed to promoting community knowledge and awareness of the council's activities, and encouraging community participation in both decision-making processes and projects that promote sustainable use of resources. The following outlines a range of activities that have been undertaken to support this target.

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4.1 General media

Ten media releases were distributed during the reporting period. ORC featured in 236 print media articles, and ten broadcast media stories. Many of the stories related to the Annual Plan, public transport, and the Dunstan by-election.

4.2 Websites

i. www.orc.govt.nz

There have been 49,137 visits to the ORC website since the last committee report, up 6.6% on the same time last year

ii. www.lawa.org.nz

There have been 699 visits to the Otago section of the LAWA website, up 7.2% on the same time last year.

iii. www.otagocdem.govt.nz

There have been 1,394 visits to the Otago CDEM website, up 265% on the same time last year.

4.3 Social media

We had 2095 followers on our ORC Facebook account at the end of this reporting period. The reach during February was 49,949 people for the Otago Regional Council Facebook page. An Otago CDEM Facebook account has recently been set up, with 278 followers at time of writing.

4.4 Public transport changes – communication strategy

With changes to the Dunedin network coming on 18 September, the bus hub becoming operational, the launch of the new service in Queenstown later this year, and changes to ticketing coming for both services in early 2018, it is a period of relatively complex, though ultimately positive change in Otago public transport. A communication strategy and plan for this phase of change is in place and being implemented.

Key principles for communication in Dunedin include ensuring users and stakeholders understand the changes and their broader context, engaging potential future bus users, and visibility for ORC as the service provider. The intention is to communicate the context and principles behind the changes and to be transparent about the complexities of implementation. We have also discussed with DCC staff the likely impact that the bus hub and additional buses on the road may have on motorists. We will be factoring this audience into our communication plan.

Key communication channels regarding the Dunedin service will include the Star (weekly advertorial column), social media (including video content), direct engagement with stakeholder groups and targeted localised context to community groups for dissemination via their newsletters and other channels.

In Queenstown, key strategic principles include positioning the bus as the first-choice transport option for locals and visitors and high awareness around the new subsidised service.

We are intending to engage a local communications agency and to leverage their local knowledge to ensure comprehensive reach in the area.

Alongside core communications around the service launches, a new visual identity and name for the service is being established, to be used in both Queenstown and Dunedin. Review of how we structure printed timetable and route information is also underway, with a user groups session held in June. This session was attended by representatives from Age Concern Otago, Bus Go, Disabled Persons' Assembly, NZTA, Dunedin and VICTA (Visual Impairment Charitable Trust), with apologies received from DCC, Blind Foundation, OUSA, OPSA and Dunedin Youth Council. Follow up sessions were held with Dunedin Youth Council and People First.

Factoring feedback received, the role of printed information alongside online information (including our website and the real time bus tracking capacity soon to be available), and the staged changes occurring across the Dunedin and Queentown services, a plan to move towards representing route information on larger (fold out) maps is in place. The current intention is to move to this approach first for the Queenstown service launch later this year and to implement it subsequently in Dunedin alongside the new ticketing system early in 2018.

4.5 Air quality

In June our staff supported a dual approach to promoting clean burning techniques and the Clean Heat Clean Air subsidy. 13,000 flyers about air quality, clean burning techniques and the subsidy were delivered to households in AirZone 1 (Arrowtown, Cromwell, Clyde and Alexandra) and Milton. Clean burning also promoted via a two week radio campaign in Central Otago and Dunedin; another two-week period will follow in the second half of June. A media release about the relocated air quality monitoring station in Alexandra was published on 1 June. Another media release about the home heating survey was sent out on 14 June.

The Clean Heat Clean Air subsidy was also promoted via:

- A Facebook slideshow, geotargeted to the towns eligible for the subsidy had a reach of 5,800 and generated nearly 200 click-throughs to more information on our website.
- Web advertising, with over 22,000 impressions.
- Three weeks of print advertising in the Clutha Leader and the Central Otago News.

4.6 Science, Hazards and Engineering

i. 'What lies beneath' project

Bayfield and Kings High School students have completed their investigations of groundwater in South Dunedin. Six students presented the results of their five-week project to the community in a public session at the Kings and Queens Performing Arts Centre on 5 July.

The joint project with the International Science Festival, GNS and the University saw pupils engaging with issues around climate change, sea level rise and natural hazards. Members of the natural hazards team led fieldwork and classroom sessions with the students. The project has driven significant community engagement and resulted in positive media profile across several stories.

Figure 3: Natural Hazards Analyst Hugo Bloor working with Year 10 students (left); Dr Gavin Palmer congratulating prize-winning students (right)

4.7 Environmental Operations

i. Pollution guidebook

A guidebook to promote 'Only drain rain' and give information for households and businesses has been written and is in the design phase. It outlines common urban activities (both household and workplace) that can pollute waterways if they enable contaminants to go into stormwater drains. This will be used Otago-wide.

ii. Mooving Day promotion

Stakeholder engagement staff promoted messages around keeping muck off the roads and cattle away from waterways in the ODT, Otago Southland Farmer, Oamaru Mail, Clutha Mail and on the ORC and Good Water in Otago Facebook pages. We also provided editorial for The Clutha Leader.

4.8 Biosecurity

i. Wallaby meeting – 25 July

Further to the success of the two wallaby meetings held in May, an additional meeting is being held in Duntroon in July, in conjunction with Environment Canterbury. The purpose is to educate landowners about what the signs of wallaby are, and what to do if they see them (identify, report and destroy). ORC is currently requesting access to local Facebook pages such as Oamaru Today and Queenstown Trading so we can give immediate updates to local communities if wallabies are seen in these areas. The wallaby guidebook has been reprinted due to its success.

Liaison staff are continuing to promote ORC's wallaby biosecurity response at appropriate opportunities and asking for members of the public to report sightings.

iii. Starters and Strategies teachers' magazine

This magazine featured biosecurity month in the July issue and ORC, along with the majority of councils throughout NZ, placed an advertisement about wallaby control to increase awareness of this pest animal and the work we do in our region.

iv. Otago University Science Communications students project

Stakeholder engagement staff are working with two students from Otago University to develop a communications plan on rabbits. The objective of the plan is to educate peri-rural audiences about their rabbit control responsibilities. The plan has been completed and we are due to receive it within weeks.

5. CATCHMENTS OTAGO REPORT FOR NOTING

Catchments Otago has provided a copy of a recent report evaluating community attitudes to Lakes Wanaka and Wakatipu. The report is appended for your information and hard copies will be distributed at the meeting.

The report was prepared by Dr Fabien Medvecky and Dr Vicki Macknight (Centre for Science Communication, Otago University) on behalf of Catchments Otago. It is based on a survey undertaken during two community events on the lakefronts earlier this year, with follow-up telephone interviews.

6. RECOMMENDATION

It is recommended that this report is noted.

Michele Poole
Acting Director Stakeholder Engagement

Annex: **Stakeholder Engagement Events Calendar (as at 14 July 2017)**
Annex: **Our Lakes – How the Communities of Queenstown and Wanaka Use and Value their Lakes**
Annex: **Waiwera Water Quality Community Engagement Plan**

ORC Event Calendar

July

14 **Southern Dairy Hub Opening, 10 30 – 3pm**
Wallacetown Community Centre, 57 Dunlop Street, Waikiwi, Wallacetown

25 **Wallaby meeting**
Duntroon Hall, 11:00 am-1:00 pm

August

4 **Clarifying Residual Flows discussion session: Tapanui**
2:00 pm West Otago Community Centre, 3 Suffolk St, Tapanui

7 **Clarifying Residual Flows discussion session: Roxburgh**
10:00 am Roxburgh Memorial Hall, 120 Scotland Street, Roxburgh

7 **Clarifying Residual Flows discussion session: Wanaka**
3:30 pm Wanaka St John, 4 Link Way, Wanaka

8 **Clarifying Residual Flows discussion session: Omakau**
10:00 am Matakanui Rugby Clubrooms, Omakau Domain

8 **Clarifying Residual Flows discussion session: Ranfurly**
2:00 pm Maniototo Rugby Clubrooms, 1 Dungannon Street, Ranfurly

9 **Clarifying Residual Flows discussion session: Middlemarch**
10:00 am Strath-Taieri Community Centre, Cnr Swansea St and Browns Road Middlemarch

9 **Clarifying Residual Flows discussion session: Outram**
2:00 pm West Taieri Memorial Hall, Holyhead St, Outram

10 **Clarifying Residual Flows discussion session: Maheno**
2:00 pm Maheno Hall, 6 Maheno Kakanui Road, Maheno

TBC **Deemed Permit replacement: Statutory bodies meeting**

TBC **Deemed Permit replacement: Planning consultants meeting**

23 **Urban Water Quality Strategy Workshop (invite only)**
Cellar Door, Alexandra

REPORT

Document ID: A1021671
Report Number: 2017/0958
Prepared For: Communications Committee
Prepared By: Stakeholder Engagement Directorate
Date: 14 July 2017

Subject: **Communications Committee – New Website July 2017**

This report highlights the redevelopment progress of ORC's website.

1. DEVELOPMENT

The project to redevelop the Otago Regional Council website www.orc.govt.nz is nearing the end. We are in the process of migrating content from the current site as well as creating new content.

The new website will improve the user experience, allow for more self-service for ratepayers, residents and other users who wish to engage with ORC online, and better integrate the WaterInfo, Otago CDEM, journey planner and rate calculation tools.

Looking ahead, it provides a better platform for further enhancements, including the ability for property owners to pay their rates online and a broader range of on-line forms to enable people to apply for more services through the website.

The new site will be operational at the beginning of September, before changes to the Dunedin bus timetables come into effect. This timing has been chosen to allow users the opportunity to get used to the new layout of bus timetable information. While we believe the new website improves the ease of use of timetables, we will have both the old and new website live for a transition period to help users adapt to the new website.

The website will also be a key information source for Queenstown bus users once the new Wakatipu services are underway towards the end of the year.

2. RECOMMENDATION

It is recommended that this report is noted.

Michele Poole
Acting Director Stakeholder Engagement

Image 1: New home page design

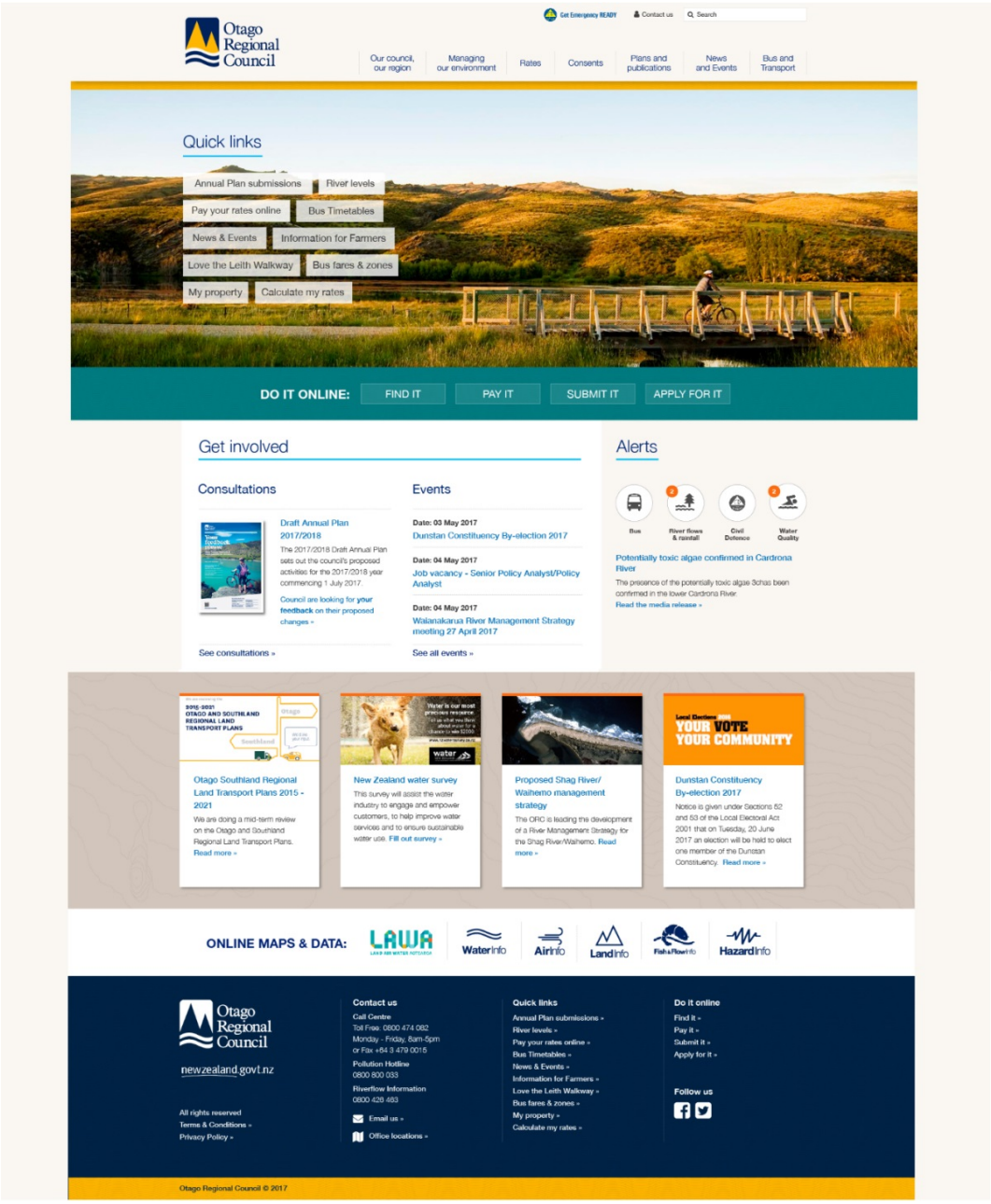


Image 2: New Public Transport page

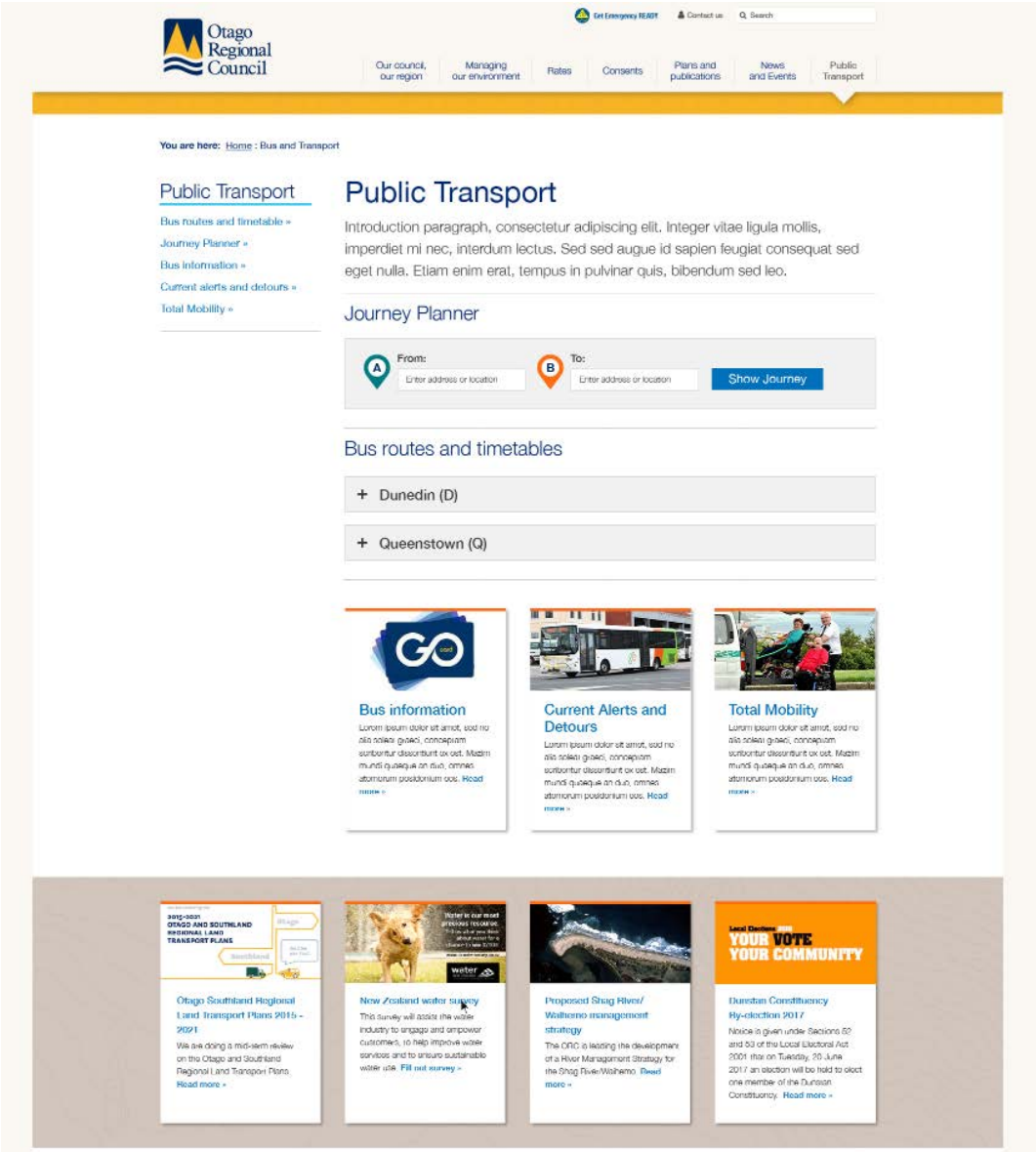
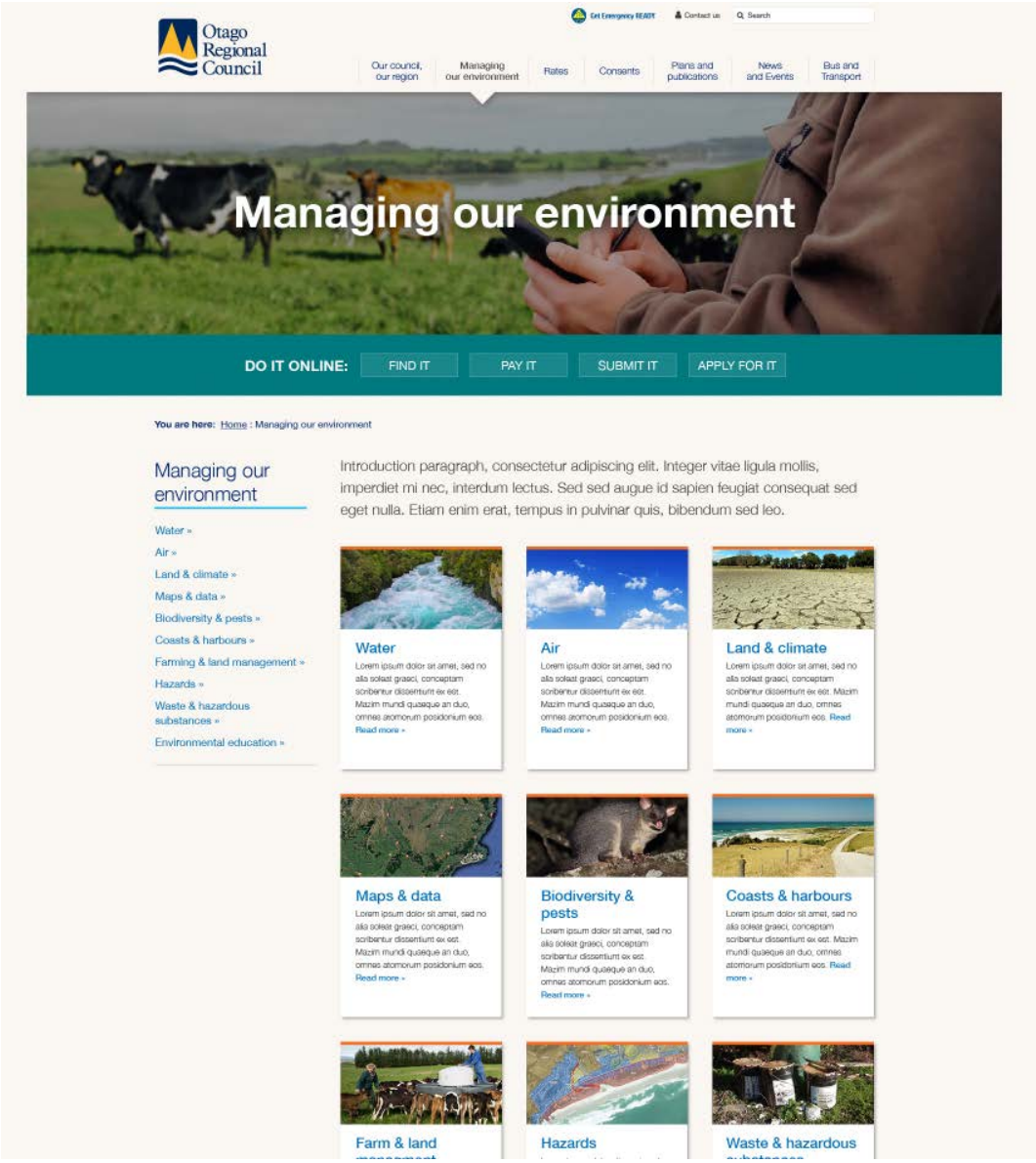


Image 3: New 'Managing our environment' page



Our Lakes:

How the communities of Queenstown and Wanaka use and value their lakes.

Catchments Otago

Report prepared by:

Dr Fabien Medvecky
Centre for Science Communication
University of Otago

Dr Vicki Macknight
Centre for Science Communication
University of Otago

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Executive summary

This report summarises survey and interview data on local beliefs, attitudes and concerns towards lakes Wanaka and Wakatipu, with an emphasis on lake Wanaka. While there are some differences between these communities, they also share much in common.

The main findings are:

- The local community shouldn't be thought of as simply those permanently residing in the area but also includes those living further afield who have a strong and regular connection to the lake through holiday-home ownership or through regular visits to the area.
- There is consistency in environmental values, with most viewing the environment as valuable in-and-of-itself. The is a marked preference for active management of the environment.
- The main uses of the lakes are walking, biking, sitting and picnicking besides them.
- Work and business accounted for very little of the community's use of the lakes.
- Both lakes are primarily valued for their aesthetic value, both for itself and for what it brings to the area.
- Most community members are confident that their lake is healthy.
- A substantial component of the Wanaka community are pessimistic about the current health of their lake.
- There is a very strong and consistent view that the water should be maintained to a high drinking-quality standard; there is less consistency on water clarity.
- Rubbish in the lake or lakeside, lake snow/snot, and water cleanliness are the primary concerns.
- Two-thirds of the local community have concerns about the well-being of the lake over the next 20 years.
- Cleaner water and fewer invasive species are the community's main aspirations.
- Interviewees express a fear that the quality of lake water is deteriorating, or will in the near future.
- Some people who are very engaged with the lake don't want to talk about it.

Table of Contents

Introduction.

Lakes Wanaka and Wakatipu are jewels in Otago's natural environment. Not only are they valuable for their own sakes, but they are special to residents and memorable for tourists. They are a central part of the cultural, social, recreational and economic life of the region.

However, along with other fresh water bodies in New Zealand, there are increasing concerns about the health of the Lakes. Due to dairying and other farming, and urban development, many New Zealand rivers and lakes are experiencing rising levels of nitrogen, with some experiencing problems with phosphorus and E. Coli. This is made evident by significant declines in native fresh water flora and fauna. Many waterways are also suffering from infestations of invasive fresh water plants, such as lagarosiphon and lake snow/snot. (Ministry for the Environment and Stats NZ, 2017)

Lakes Wanaka and Wakatipu are administered and monitored by the Otago Regional Council. The Council recognises that for this environmental work to be successful, more engagement with the local community is needed. The local governing bodies rightly have an interest in knowing and understanding local the community's concerns and aspirations for their lakes, and this understanding will enable better communication and engagement.

For communication and engagement to be successful it has to be a cooperative effort involving scientists, decision makers, and members of the local community. This report serves two joint purposes then: one, it gives scientist and decision makers a better understanding of how the local communities (broadly construed) use, value and worry about their lakes; two, it provides an opportunity for the voices of local people to speak to scientists and decision makers.

How do members of the community use their lake? What concerns them? How do the community feel about their lakes now and into the future?

This report summarises survey and interview data on local beliefs, attitudes and concerns towards lakes Wanaka and Wakatipu, with an emphasis on lake Wanaka.

Methodology

This study took a two-step approach: a general quantitative survey and some follow-up phone interviews.

Survey data was gathered from the 31st of March to the 2nd of April. Wakatipu data was collected in paper surveys during an evening event jointly run by the ORC and Catchment Otago to inform engage the community about lake health, monitoring and management.

Wanaka data was collected as part of a day-time event, again jointly run by the ORC and Catchment Otago. This event was meant to attract families and the local community more broadly, by including child friendly activities such as face-painting, dress ups and Lab-in-a-Box, as well as informative displays aimed toward adults. These surveys were collected by iPad. Despite differences in collection method and lake named, the survey questions were identical. (See appendix A) We had 67 respondents to the Lake Wanaka survey, and 32 respondents to the Lake Wakatipu survey, giving us a total of 99 responses. This sample size, while too small to be comprehensively representative of the local community, is sufficient, especially when combined with the interview data, to provide a core understanding of the community's values, concerns and aspirations.

To supplement the quantitative data gathered in the survey, we also gathered more in-depth qualitative information through interviews and open-ended questions (see appendix B) with local residents. These questions covered much of the same ground as the survey, but gave community members a chance to enlarge upon their answers. Qualitative data fleshes out the numerical information we present, giving residents a voice to speak of how they use, value and worry about their lake. (Gomm, 2008)

How to use this report

To present the information in the most accessible and meaningful way, this report provides data from both the broad survey and the in-depth interviews for each topic.

The report is divided into 4 topics:

- ⇨ Who is the community
- ⇨ The use and value of the Lake
- ⇨ Lake health and water quality
- ⇨ The Lake and its future

In each section, the general survey data is presented first, and a box (like this one) entitled "Voices from the Community" follows to add more details and to paint a fuller picture of the views expressed. In these "Voices from the Community" boxes, you'll find both quotes that show views and values expressed during the interviews and answers to open-ended survey questions.

Neither the survey data nor the interview data alone should be taken to provide a complete understanding. These should be read together and taken as complementary.

Who is the community?

Our survey population was representative of the target population and largely comparable to the general Otago populations and the population surveyed by the ORC for their Waterways Research (2016). The one distinction is that this report's population is slightly older as we primarily targeted Wanaka. **Wanaka has a median age of 41.1 years of age** compared to 36.4 for the Queenstown-Lakes District (QLD) (Stats NZ), and 33.6 for Otago more broadly.

Age	This report	Otago Pop	ORC (Otago-wide) survey
18-35	11%	31%	22%
35-59	68%	41%	44%
60+	22%	28%	33%
Gender			
M	47%	48%	42%
F	53%	52%	58%

Our population was 90% from the Otago region, with 75% of our population coming from the QLD. In particular, 42% came from Wanaka and 23% from Queenstown. Of the 10% that came from beyond the Otago region, 7% came from other parts of NZ, including a number from Canterbury, and 3% from overseas. **The non-QLD population is an important part of the Wanaka and Queenstown communities as a number of them are holiday-home owners who regular visit and contribute to these places.**

From Wanaka	42%
From Queenstown	23%
From elsewhere in the QLD	10%
From elsewhere in Otago	15%
From elsewhere in NZ	7%
From Overseas	3%

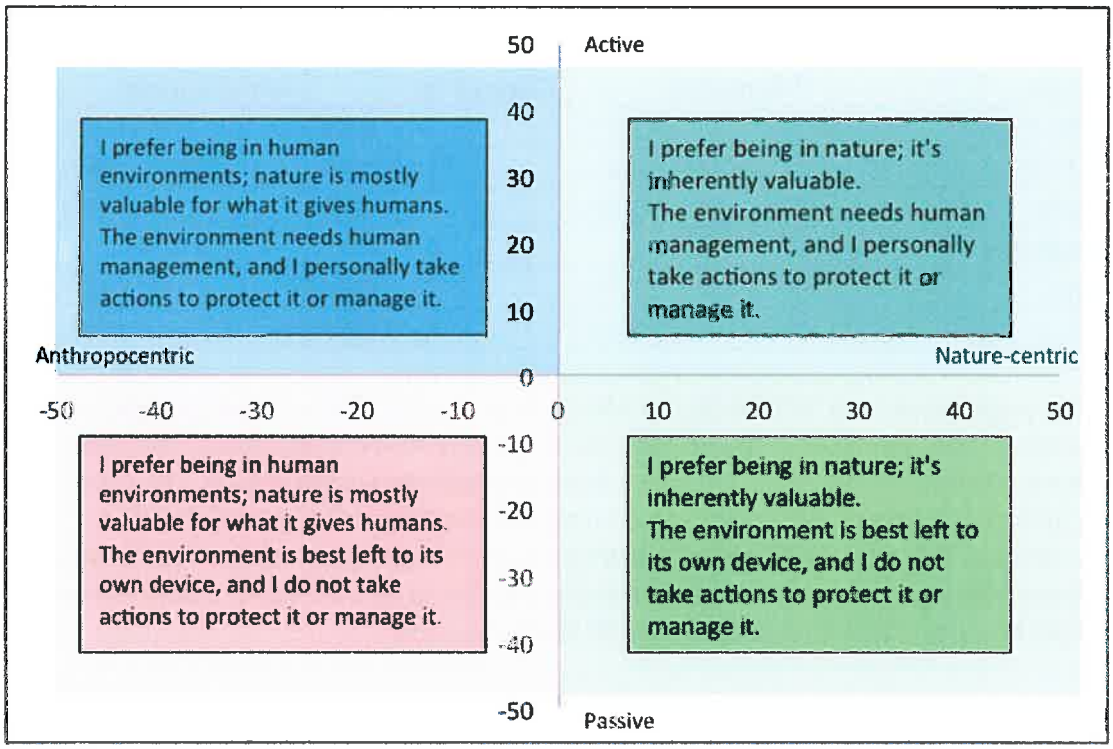
The surveyed population worked in a wide variety of industries including the arts and entertainment, business and financial, information technology, construction, education, farming, healthcare, management, office and administrative, sales and retail, tourism, and retired.

Environmental values

The local community showed a remarkably consistent set of environmental values when assessed on the following two dimensions:

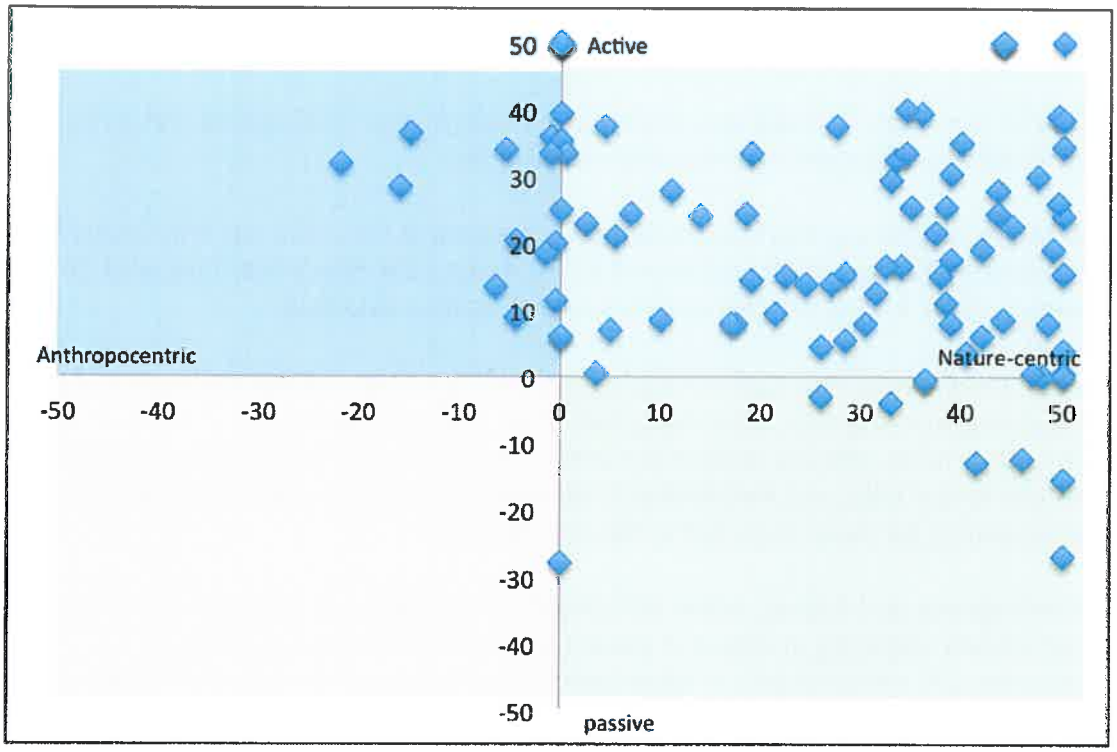
a) Anthropocentric values (that the environment is valuable first and foremost for what it brings to humans) vs nature-centric values (that the environment is valuable in and of itself, and
b) Active management (that humans should actively participate in the management of the environment) vs passive management (that the environment should be left to its own devices)

These two dimensions give the 4-field matrix below:



The local community is remarkably consistent, with the vast majority sitting in the top-right Active/Nature-centric quadrant. Although scattered throughout that quadrant, there are two dominant clusters: the largest cluster expresses strong preferences active management and hold the environment to be inherently valuable, and the second, smaller cluster, expresses ambivalence towards human interaction and management, while still holding the environment to be inherently valuable.

About a quarter of the respondents (26.3%) did not share the majority nature-centric view, but did all express a preference for active management. Just under 15% expressed a preference for passive management, alongside heavily nature-centric values (except for one outlier). No respondent expressed the view of the bottom left, 'anthropocentric values' × 'passive management'.



Summary

The local community is slightly older than Otago more generally, and comes from a diverse background in terms of employment. Importantly, the local community shouldn't be thought of as simply those permanently residing there. The local community also includes those living further afield who have a strong and regular connection to the lakes through holiday-home ownership or through regular visits to the area.

The local community has a consistent take on environmental values, mostly viewing the environment as valuable in-and-of-itself, though its value to humans is not negligible, and there is a marked (and quite strong) preference for active management of the environment.

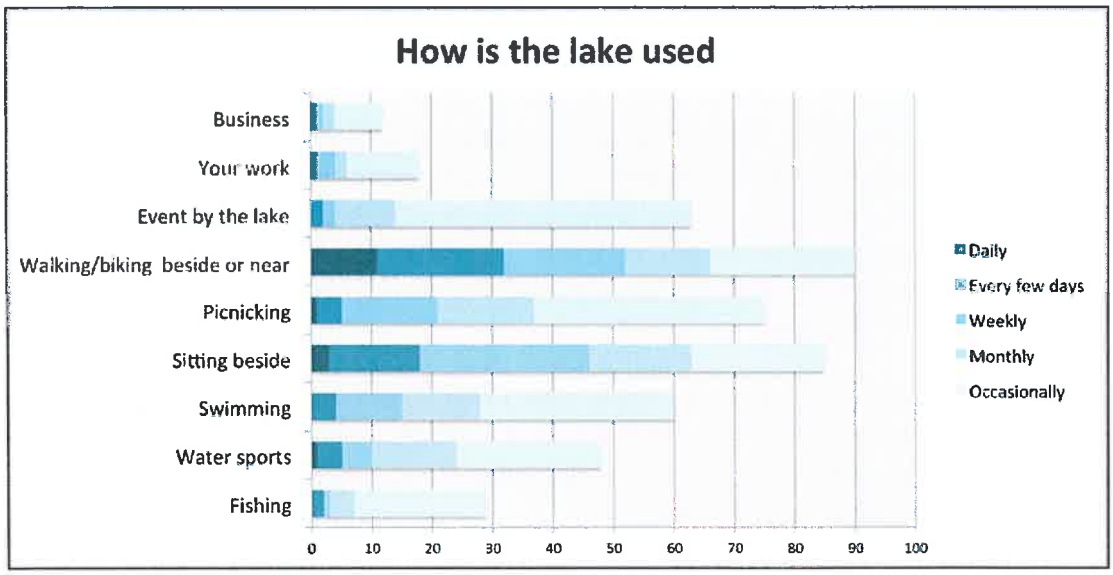
The Use and Value of the Lake

People use lakes Wanaka and Wakatipu in many ways, both active and passive, for business, pleasure, exercise and community.

Of the surveyed population, we found that the most common use was lakeside walking or biking. 11% said they did this daily, 21% every few days, and 20 weekly. Only 4 % of the respondents said they never do this.

Many people also reported sitting beside the lake as one of the main uses, with 3% doing so every day, 15% every few days, and 28% weekly.
The other most popular uses of the lake were picnicking by the lake, attending events by the lake, and swimming in the lake, all of which were done at least occasionally by more than half of the community.

Water sports and fishing, while still popular, were less so, with less than half the population engaging in either of these (48% and 29% respectively).
Interestingly, respondents predominantly had not used the lake for business (12%) or work (18%).



Some respondents also told us other ways they use, or would like to use, the lakes. For Lake Wanaka a number of respondents said they especially enjoyed looking at it, the view, and taking photos; the aesthetics of the lake. Another reoccurring use was as drinking water. The lake is also used for educational activities (with local primary schools), and to gather as a social meeting place, with family and friends.

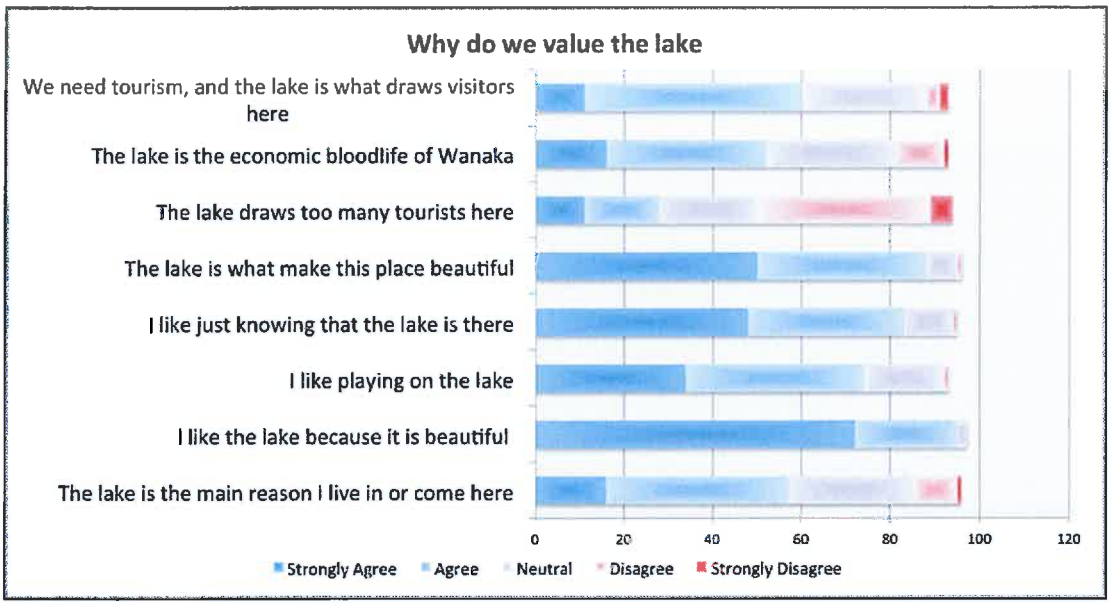
For Lake Wakatipu other uses include access for hunting/fishing, the peace, quiet and communing with nature it provides.

Voices from the Community
When asked about what they want from their lake, some responses explicitly focused on the health of the lake – 'just to keep it clean', 'drinkable water', and 'lagarosiphon free!'. One respondent wished for 'mahinga kai', and one cheeky respondent called for 'slushies (or smoothies)'. 'I sail at least once a week during the day light saving season. I coach sailing too ... I'm probably on the lake sailing 2-3 days a week'. (Male, 35-59, Wanaka) 'Our usage is just an everyday part of our lives ... [the lake] is very present in our lives on a daily or weekly basis'. (Male, 60+, Wanaka)

People's reported values of the lake were again both active and passive, with aesthetics clearly very important to people. 72% of respondents strongly agreed with the statement 'I like the lake because it is beautiful', and 50% of respondents strongly agreed that 'the lake is what makes Queenstown/Wanaka beautiful'.

Active enjoyment was also important to respondents, but the Wanaka and Queenstown communities saw this quite differently. 47% of Wanaka respondents strongly agree that 'I like playing on the lake' and 44% agree. Wakatipu respondents, however, were slightly less agreeable, with only 14% strongly agreeing and 41% agreeing, while 41% remained neutral.

Perspectives on the value of the lakes for the economy and tourism were more complex. While 49% of respondents agreed (and 11% strongly agreed) that their community 'needs tourism and the lake is what draws visitors here', nearly 30% of respondents agreed or strongly agreed with the statement 'the lake draws too many tourists here'.



Voices from the Community
'The fact that you can dive off your boat in the middle and swim in it and drink it, and I know how rare that is internationally' (Male, 35-59, Wanaka) 'Some people have become negative because of the people it draws, and feel that is detracting from Wanaka. But I think because it draws so many diverse people that's what makes it so pleasant'. (Male, 35-59, Christchurch) 'It's quite a clean lake, really. It is swimmable. If your child accidently swallows a bit of water you're not worried they're going to come down with something.' (Male, 35-59, Wanaka)

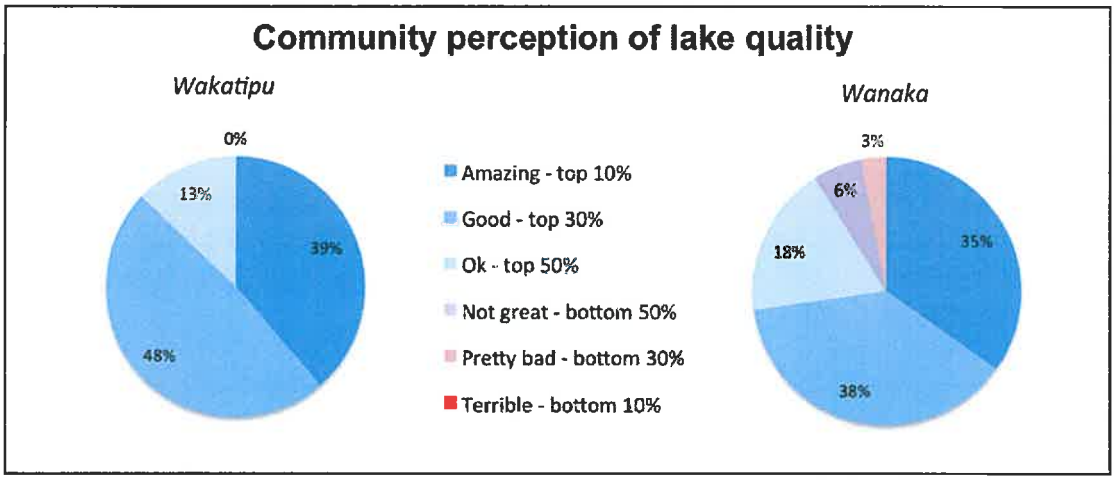
Summary

The main uses of the lakes are walking, biking, sitting and picnicking besides them, while work and business accounted for very little of the community's use of the lake.

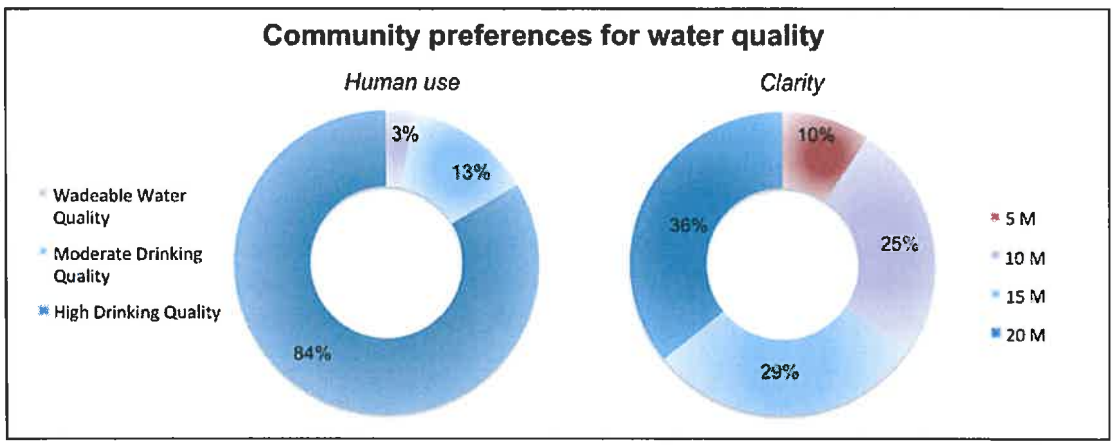
The lake is primarily valued for its aesthetic qualities, both for itself and for what it brings to the area. Playing on the lake is also valued highly by the local community, and more so in Wanaka than in Queenstown.

Lake health and Water Quality

In general, people felt very confident that their lake is healthy and has high water quality compared to other lakes in New Zealand. About a third of respondents thought both lake Wakatipu and lake Wanaka were in the top 10% of New Zealand lakes. Both lakes are indeed very healthy in terms of water quality, and both lakes rate in the '*Very good*' category for water quality based on *LAWA*'s trophic level index (LAWA). But while, lake Wakatipu was believed to be in the top 50% by all respondents, lake Wanaka got more mixed reviews, with about 10% believing Lake Wanaka to be in the bottom 50% of New Zealand lakes, including 3% believing it to be in the bottom 30%.



When asked 'what do you think a "healthy lake" means', over 80% of respondents agreed that it should meet a strict drinking water standard. There was a greater range of responses around the water clarity of a healthy lake. When asked about how clear the water should be (clarity to 5; 10; 15; or 20 metres), just over a third responded that a healthy lake should have clarity to 20 metres, with more lenient options deemed acceptable by most respondents.



People reported to finding out about lake health from a variety of sources. The most common source was through the media (60%), followed by organisations

such as the Otago Regional Council, University of Otago, and Guardians of the Lake (57%). Surprisingly, less than half relied on people they knew such as friends (41%). Many people also reported finding out about the lake's health through personal experience and interaction with the lake. A few also mentioned social media, and about 5% said they didn't know or hear much about lake health.

Voices from the Community
I know about the lake ... 'by looking at it & swimming in it'; 'I'm in the lake weekly, so self-monitor'; 'can see it has deteriorated since I was a kid'. 'It is easy to lose quality, and very hard to regain it. ... If we do not put money now into assessing the quality of our lakes, not just Wanaka, but Wakatipu, Hawea, we could very quickly reach a tipping point where it's too late . ... Prevention is much more cost-effective than cure'. (Male, 60+, Wanaka) 'We're always very impressed how proactive all the administrators in the area are about the lake ... we're impressed how all the groups work together, and the communication with all the different groups. I think it's outstanding actually'. (Male, 35-59, Christchurch) 'I think the most important is water quality. I think that's the one that's most endangered, and I think that's the one that we can possibly make some difference on. ... It's just a bit more soupy than it used to be.' (Female, 60+, Wanaka)

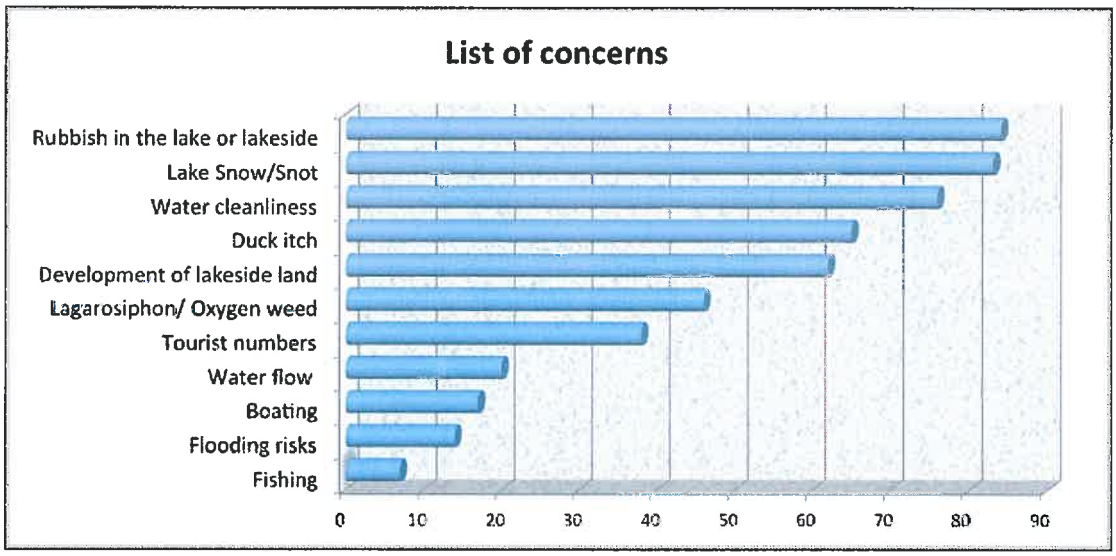
Summary

The local community is largely confident that their lake is healthy (as indeed they both are), though a substantial component of the Wanaka community are pessimistic about the health of their lake with just under a third believing it to be in the bottom 70% of NZ lakes.

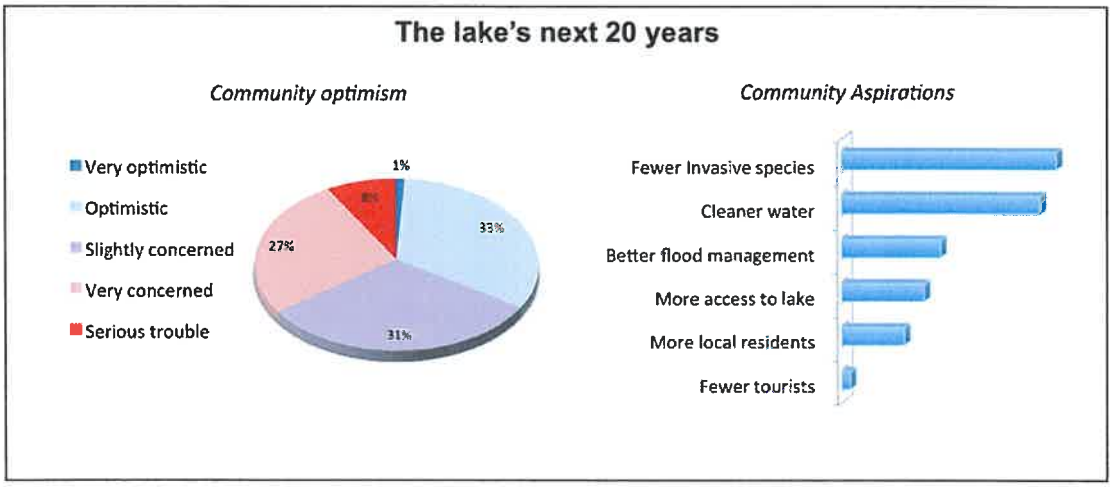
There is a very strong and consistent view that the water should be maintained to a high drinking quality, and, while views on water clarity is less consistent, there is a marked preference for clarity to 10 metres or beyond.

The Lake and its Future

Though people tended to claim Lakes Wanaka and Wakatipu are in reasonable health, they are worried about many things they fear will lead to declines in quality and lake health. Leading the charge are concerns over rubbish in the lake or lakeside, lake snow/snot, and water cleanliness. Lake snow/snot was clearly much more of an issue for the Wanaka community (95%, compared to 65% for the Wakatipu community), while tourist numbers (52%) and flood risks (32%) were a greater concern for the Wakatipu community compared to the Wanaka community (33% and 6% respectively).



These concerns were reflected in the community's dulled optimism about their lake's future over the coming 20 years, and many ranked cleaner water and fewer invasive species as their primary aspirations. The local community also expressed an aspiration for some increase in the local population, while holding the tourist numbers reasonably steady.



Voices from the Community
My concerns are that it deteriorates to a stage we can't drink in it and play in it. Or to a point that we can't recover it. It would be nice to have grandchildren who are able to drink it and play in it too'. (Male, 35-59, Wanaka) 'My husband's interesting. He's been a very good fisherman, a very keen fisherman, but when he's getting old and depressed, he sighs 'the lake is not what it used to be', he's very grumpy about that. You probably wouldn't get him talking about it.' (Female, 60+, Wanaka) 'Growth needs to be managed better to mitigate further storm-water run-off into the lake'. (Male, 35-59, Wanaka) 'The main thing is the spin-off from tourism, getting the tourism revenue back into conservation ... I think that's somewhere tourism falls short on in New Zealand, putting funding from tourism back into conservation'. (Male, 35-59, Queenstown)

Summary

Rubbish in the lake or lakeside, lake snow/snot, and water cleanliness are the primary concerns and two-thirds of the local community have concerns about the well-being of the lake over the next 20 years.

Cleaner water and fewer invasive species are their main aspirations.

Closing words from the community

The community also spoke about issues that were not directly addressed in the questions, but came out during the interview and which are of concern.
We close the report with these as final thoughts.

Voices from the Community
'The lake is one of Wanaka's best natural features, we do just need to look after it, and be aware of what might go down the drain.' (Male, 35-59, Wanaka) I just think there should be more roading access, and pull over points. There should be better walking access. (Male, 35-59, Queenstown) Some of our little creeks seem to be brushed aside. The ORC has just given consent for a fish farm to be built, just 2 or 3 k out of Wanaka ... I think that was a really dumb idea. You're not allowed to put cows in the water so why fish? (Male, 35-59, Wanaka) I think the water is very valuable and I'd hate to think we're going to sell the water or anything. (Female, 60+, Wanaka)

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Appendices

Appendix A – Lake Survey

(Lake Wakatipu survey was identical except Wakatipu named instead of Wanaka)

1. In the last six months have you used Lake Wanaka for (and how often):

	I haven't	Daily	Every few days	Weekly	Monthly	Occasionally
Fishing	○	○	○	○	○	○
Water sports	○	○	○	○	○	○
Swimming	○	○	○	○	○	○
Sitting beside	○	○	○	○	○	○
Picnicing	○	○	○	○	○	○
Walking/biking beside or near	○	○	○	○	○	○
Event by the lake	○	○	○	○	○	○
Your work	○	○	○	○	○	○
Business	○	○	○	○	○	○

Other (please specify)

2. Is there anything else you'd like to use the lake for or get from the lake?

3. Do you agree or disagree with the following statements?

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
The lake is the main reason I live in or come to Wanaka	○	○	○	○	○
I like the lake because it is beautiful	○	○	○	○	○
I like playing on the lake	○	○	○	○	○
I like just knowing that the lake is there	○	○	○	○	○
The lake is what make Wanaka beautiful	○	○	○	○	○
The lake draws too many tourists to Wanaka	○	○	○	○	○
The lake is the economic bloodlife of Wanaka	○	○	○	○	○
Wanaka needs tourism, and the lake is what draws visitors here	○	○	○	○	○

4. Where do you think the quality of Lake Wanaka is compared to other lakes in NZ?

- ○ Amazing - top 10%
- ○ Good - top 30%
- ○ Ok - top 50%
- ○ Not great - bottom 50%
- ○ Pretty bad - bottom 30%
- ○ Terrible - bottom 10%

5. What do you think a "healthy lake" means (part 1: water quality)?

- ○ A lake with that meets only a wadeable standard of water quality
- ○ A lake that meets only a moderate drinking water standard
- ○ A lake that meets a strict or high drinking water standard

6. What do you think a "healthy lake" means (part 2: water clarity)?

- ○ A lake with a water clarity of 5m
- ○ A lake with a water clarity of 10m
- ○ A lake with a water clarity of 15m
- ○ A lake with a water clarity of 20m

7. How do you know about the health of the lake?

- ☐ Media (newpapers, TV, radio, internet news and info sites, etc)
- ☐ Friends and people I know
- ☐ Organisations like Uni Otago, Guardian of the lake, ORC, etc
- ☐ Other (please specify)

8. Do any of these issues worry you?

- ☐ Oxygen weed
- ☐ Lake Snow/Snot
- ☐ Duck itch
- ☐ Boating
- ☐ Fishing
- ☐ Flooding risks
- ☐ Development of lakeside land
- ☐ Water flow
- ☐ Tourist numbers
- ☐ Water cleanliness
- ☐ Rubbish in the lake or lakeside

9. How optimistic are you about the future well-being of the lake over the next 20 years?

- I'm very optimistic. I think the lake will be fine
- I'm quite optimistic, though we need to remain vigilant
- I'm a little concerned we're not taking good enough care of the lake
- I'm very concerned that unless we take some serious steps to manage our lake, we'll be in serious trouble before too long
- I think we're already in serious trouble. It's not a matter of managing the lake, it's a matter of saving it
- I don't think about what the lake will be like in 20 years

10. If you think of the lake 20 years from now, what would like to see?

	More/better		Same		Less/fewer
Access to and ability to enjoy the lake					
Clean water					
Invasive species					
Local residents					
Tourists					
Flood management					

11. Could you place your beliefs on these lines #1

Nature is valuable for what it gives humans — Nature is valuable for its own sake

12. Could you place your beliefs on these lines #2

I feel good when I'm in natural environments — I feel good when I'm in human-made environments

13. Could you place your beliefs on these lines #3

I take actions to protect and improve the environment — I don't take actions to protect improve the environment

14. Could you place your beliefs on these lines #4

I believe humans are best at deciding what to do

I think nature should be left to look after itself

15. What is your age?

- 18 to 34
- 35 to 59
- 60 or older
- Prefer not to answer

16. What is your gender?

- Female
- Male
- Prefer not to answer

17. Where do you live?

- Wanaka
- Queenstown
- Elsewhere in the Queenstown Lakes District
- Elsewhere in Otago
- Elsewhere in NZ
- Not in NZ

18. Which, if any, of the following industries do you work in?

- ◯ Arts, design, entertainment, sports and media
- ◯ Business and financial
- ◯ Community and Social Service
- ◯ Computer and mathematical
- ◯ Construction and extraction
- ◯ Education and training
- ◯ Farming
- ◯ Fishing
- ◯ Food preparation and serving
- ◯ Forestry
- ◯ Healthcare
- ◯ Installation, maintenance and repair
- ◯ Legal
- ◯ Management
- ◯ Office and administrative
- ◯ Production
- ◯ Protective services
- ◯ Sales
- ◯ Not currently in paid employment
- ◯ Retired
- ◯ Prefer not to answer
- ◯ Other (please specify)

19. In the next two weeks, we would like to interview members of the local community about this topic to find out as much as possible about community views as we can. If you would be willing to take part in a phone interview (approx 30 minutes), please provide us with your email address.
Thanks!

Appendix B

Lake Interviews

1. What are some of your favourite ways to use the lake?
2. What makes the lake valuable to you and to your community?
3. What concerns you about the lake?
4. If there was one thing you would like to have changed or improved about the lake, what would it be?
5. Do you have any other comments you would like to share?

Central Otago lakes science weekend

31st March - 2nd April 2017

Catchments Otago

Report prepared by:

Dr Cynthia Lawrence
Catchments Otago
University of Otago

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Catchments Otago and Otago Regional Council joint Central Otago alpine lakes science weekend

Discussions between Executive Members of Otago Regional Council and Catchments Otago* in 2016 focussed in on identifying the perceptions, goals and aspirations of Central Otago Lakes communities for their lake systems.

Two unique, jointly-hosted Central Otago events were developed to:

1) enable residents an opportunity to learn more about their lakes and the people that use them;

2) facilitate the collection of survey and interview data on local beliefs, attitudes and concerns towards the alpine lakes.

The surveys conducted at both events by *Catchments Otago* researchers specifically explored three key themes from people attending:

1) How is your lake doing;
2) What are we currently doing with your lake (monitoring and management);
3) Taking your lake into the future: what do you want and what could we do.

A separate, companion report has been prepared detailing the survey results from the Community's voice about their lakes for Otago Regional Council.

* Established in 2016, the University of Otago Research Theme Catchments Otago brings together researchers from across the University to help develop land and water management strategies to address some of the challenges the region currently faces, as well as those that might arise in future.

Further information can be found at www.catchmentsotago.org

PechaKucha Night™ QUEENSTOWN

On Friday 31st March, a PechaKucha Night™ themed 'The Lakes and I' was held at Queenstown Primary School, comprising a wide range of speakers discussing their perspectives of the Central Otago alpine lakes. Using the PechaKucha 20 pictures for 20 seconds format, six speakers treated the audience to a visual journey through the local landscape, its history, visitors over the years and even its physical transformation into jewelry.

Randall Aspinall 4th Generation Farmer from Mt Aspiring Station
'Farming in the Lakes Catchment'

Anna Claire Thompson Arrowtown Jewelry Artist
'I love Lake Hayes'

Leah Kissick Wakatipu School Student
'Local History through the eyes of Lake Wakatipu'

Pascal Sirguey School of Surveying, University of Otago
'How much snow and ice is there?'

Peter Langlands Amisfield Winery Restaurant Forager
'Foraging in Central Otago's waterways'

Chris Hankin Queenstown Department of Conservation Ranger
'The natural world of Queenstown's Lakes, large and small'

Randall Aspinall
'Farming in the Lakes Catchment'

Anna Claire Thompson
'I love Lake Hayes'

Lab at the Lake WANAKA

On Sunday 2nd April Pembroke Park in Wanaka was transformed into the 'Lab at the Lake', a family fun day, specifically showcasing what we do and don't know about Lake Wanaka, work currently done, and possible future work. The Lab in a Box, an Otago Museum mobile science laboratory funded by MBIE Curious Minds, housed fish, invertebrate and zooplankton hands-on displays, with live critters captured earlier that morning from Bullock Creek and Lake Wanaka itself.

The marquee housed *Catchments Otago* displays on the Mahu Whenua covenants, snow melt research using drones and a fun freshwater scientist/angler dress up booth. Otago Regional Council displays comprised Good Water Otago, Check Clean Dry, and LAWA. The hands-on displays were hugely popular and consistently busy, with children and adults alike jostling to look down microscopes at the live critters, see the drone, peer along clarity tubes and have their photo taken in the dress up booth.

A local face painter delighted children with her free stunning fish and invertebrate creations, while the Wanaka Branch of the Lions filled tummies with a free sausage sizzle, courtesy of *Catchments Otago*.

The community really embraced having the opportunity to chat with scientists from both Catchments Otago and Otago Regional Council and see critters from Lake Wanaka up close. The atmosphere was overwhelmingly positive, with estimates of over 450 people attending the three hour event. Following the Lab at the Lake event, digital copies of the *Catchments Otago* Lake Wanaka display posters were sent to Wanaka Schools for use in their science curriculums. Teachers from primary and secondary schools have uniformly been extremely positive with feedback about the Lab at the Lake event and the subsequently supplied material.

ORC and Catchments Otago staff at Lab at the Lake

Lab in a Box arrives in Wanaka

Setting up the Lab

Lab at the Lake

Stereo microscopes for hunting invertebrates, algae & zooplankton

Constantly busy with budding freshwater ecologists

Waiting their turn to see the live critters

Nostoc cyanobacteria lake ball bought in by a local youngster

ORC water monitoring & Good Water Otago

Snow melt drone & video flyovers

Mahu Whenua covenants

'Catch of the Day'
Dress up booth

Fishy face painting - rainbow & brown trout

University of Otago staff present

Gerry Closs - Catchments Otago Co-Director
Kath Dickinson - Catchments Otago Co-Director
Phil Seddon - Catchments Otago Co-Director
Fabien Medvecky - Catchments Otago member
Mara Wolkenhauer - Catchments Otago member
Vicki MacKnight - Centre for Science Communication
Cynthia Lawrence - Catchments Otago member
Jason Augspurger - Department of Zoology
Sophie Fern - Department of Botany
Todd Redpath - School of Surveying
Pascal Sirguey - School of Surveying
Rosemarie Neuninger - Department of Food Science

Otago Museum staff present

Craig Grant

Otago Regional Council staff present

Adam Uytendaal
Charlotte Panton
Nicole Foote
Elenanor Ross
Richard Lord

Catchments Otago Lab at the Lake posters

Mahu Whenua Covenants
Zooplankton and Algae in Lake Wanaka
Fish Species in Lake Wanaka
Seasonal snow: seen from above

Advertising material

Seasonal snow: seen from above

Todd Redpath[1,2], Pascal Sirguey[1], Nicolas Cullen[2], Sean Fitzsimons[2]
[1]School of Surveying, [2]Department of Geography

The Clutha Catchment

With an area of approximately 21,000 km^2, the Clutha Catchment is the largest in New Zealand. The Clutha River itself is the largest river in New Zealand by volume, with a mean discharge of around 600 m^{3}s^{-1}. From tributaries rising on the main divide of the Southern Alps, the Clutha traverses a range of landscapes and climatic zones before reaching the Pacific Ocean on the South Eastern coast of the South Island. With an average elevation of ~700 m, seasonal snow plays an important role in the mountainous Clutha Catchment, contributing 13, 11 and 13% of annual in-flow to lakes Wakatipu, Wanaka, and Hawea respectively (Kerr, 2013). Seasonal snow in the Clutha Catchment serves important environmental and economic functions.

Pisa snow study basin

Snow is highly variable in time and space, even at small scales. This variability leads to uncertainty in our understanding of snow processes. To address this, a study basin has been established in the Pisa Range (near Snow Farm NZ) where a drone is being used to measure snow depth using a technique called photogrammetry. Over small areas, the drone can provide a map of snow depth at a level of detail that could never be achieved using traditional techniques such as snow probing. Using measurements of snow density, maps of snow depth can be turned into maps of the amount of water stored in the snowpack (snow water equivalent). Carrying out repeat drone flights throughout the snow season allows changes in snowpack to be understood in terms of weather and climate

Preparing the drone for launch

NASA's TERRA satellite, which carries the MODIS sensor

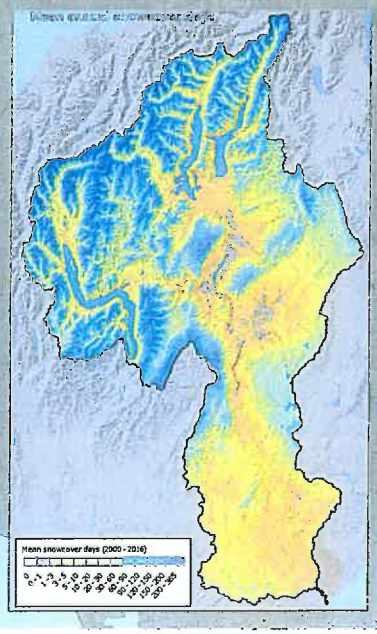
The Trimble UX-5 fixed wing drone

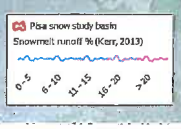
Weather station in the Pisa Snow Study Basin

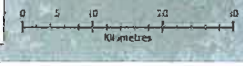
Snow pit for density measurements

Whole-catchment snowcover from space

At very large scales, snowcover (but not depth) can be mapped from imagery captured by sensors aboard satellites in space. One such sensor, MODIS, operated by NASA, has been capturing daily imagery since the year 2000. Processing this imagery to map snow and build a time series of snow cover helps us to better understand how seasonal snow varies in time and space at large scales, how this is controlled by climate processes, and implications for water resources.



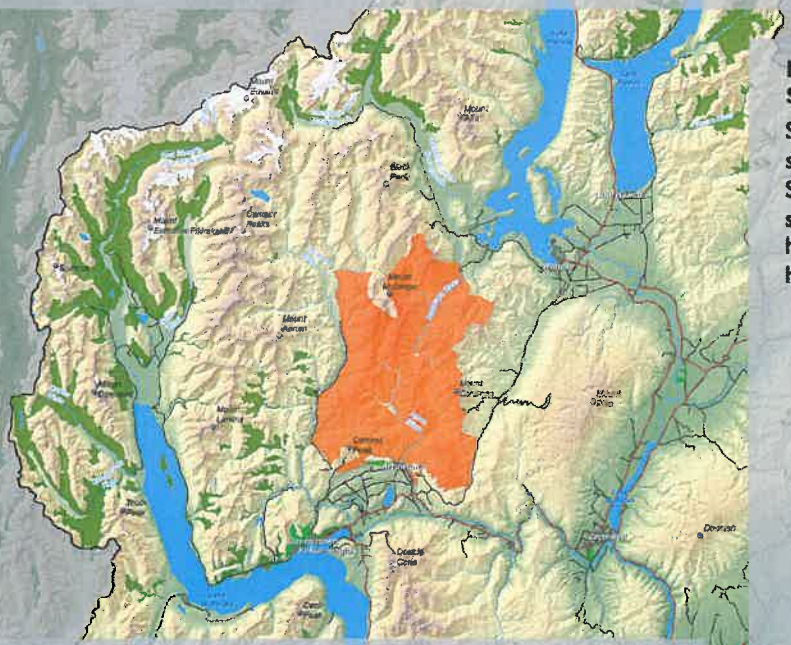




University of Otago
Te Whare Wānanga o Otāgo
New Zealand
School of Surveying
Department of Geography
Catchments Otago

Mahu Whenua covenants

In 2015, the Queen Elizabeth II National Trust celebrated the formal opening of the largest private land covenant agreement ever initiated in New Zealand with the Mahu Whenua covenants. Protecting 53,000ha of contiguous landscape over most of Motatapu, Mount Soho, Glencoe, and Coronet Peak stations, they cover a large part of the country between Lake Wanaka and Arrowtown, and are bordered by the Shotover River and the Cardrona Valley. The covenants protect iconic high country landscapes, the habitat of unique native plants and animals, public access, and important historic, cultural and recreation values.



Freshwater Invertebrate Species

Several charismatic, yet ecologically sensitive, species (including Mayflies, Stoneflies, and Dobsonflies) inhabit streams within Mahu Whenua, indicating high water quality and good fish habitats.

Swimming mayfly; *Nesameletus* *

Green Stonefly; *Stenoperla* *

Dobsonfly; *Archichauliodes* *

Plant species

Snowbank plant communities occur where snow lies for extended periods. Slim snow tussock (*Chionochloa macra*) is found above 1500m, narrow-leaved snow tussock (*Chionochloa rigida*) dominates below 1500m. Between 900–1000m, hard tussock dominate (*Festuca novae-zelandiae*).

Grey shrublands are dominated by tree daisies (*Olearia* species) and mingimingi (*Coprosma propinqua*). Mountain ribbonwood (*Hoheria lyallii*) is largely confined to gullies below 1000m. Mountain beech forest remnants with occasional silver and red beech are common in the Motatapu Valley.

Animal species

Grey warblers, silvereye (waxeye), riflemen, fantails, bellbirds, tomtits, South Island oystercatcher, spur-winged plover, harrier hawk, paradise shelduck and the Eastern falcon inhabit the covenant's shrublands and forests. Kea frequent the mountain tops and New Zealand Pipit are widespread in the grasslands.

Skinks live in amongst the tussocks and rocks, as do insects including Hamilton's Mountain Black butterfly, the giant ghost moth, the rare butterfly *Erebiola butleri*, colourful grasshoppers, flightless stoneflies, and giant dragonflies.

Eastern Falcon [1]

Mountain Black butterfly [2]

Kea [3]

* © Steve Moore (deceased); [1] © Craig MacKenzie
[2] © Te Papa; [3] © Mark Fraser;

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Zooplankton and Algae in Lake Wanaka

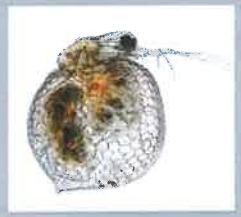
Zooplankton

Zooplankton come in a huge range of sizes; some are visible to the naked eye and others are microscopic. They are mostly grazers that eat algae and are a vital part of freshwater food chains.

Water Fleas - Cladocerans

Some of the largest zooplankton found in Lake Wanaka, cladocerans reproduce asexually (clones) and range in size: *Daphnia pulex* 3mm, *Ceriodaphnia dubia* 1mm, *Bosmina meridionalis* 0.5mm.

Daphnia



Ceriodaphnia

Bosmina

Copepods

Reproducing sexually, *Boeckella dilatata* range in size: females 1.3mm and males 0.9mm

Boeckella

Rotifers

Often termed 'wheel animals', they show bilateral symmetry and range in size from 0.1-0.5mm.

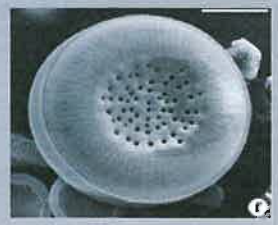
Rotifer

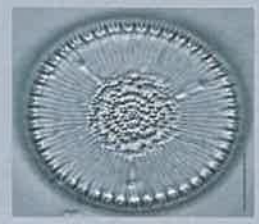
Algae (Phytoplankton)

Phytoplantkon are usually only visible under a microscope, unless individual cells clump together. They can live as single cells or as long strings. Phytoplankton convert sunlight and carbon dioxide into food, with oxygen as the by-product.

Lindavia or Lake Snow

Lake snow is an aggregation of *Lindavia intermedia*, a single celled diatom that is joined into clumps by mucous. The mucous makes Lake Snow very sticky, but it is non-toxic, both to humans and pets. It can spread fast as only one cell can start a new bloom.





Other Diatoms

Diatoms have distinctive transparent cell walls made of silica, like glass, and are often termed 'algae in glass houses'. Consisting of two halves called valves, they have elaborate perforation patterns on the surface.

Aulacoseira

Navicula

Cyclotella

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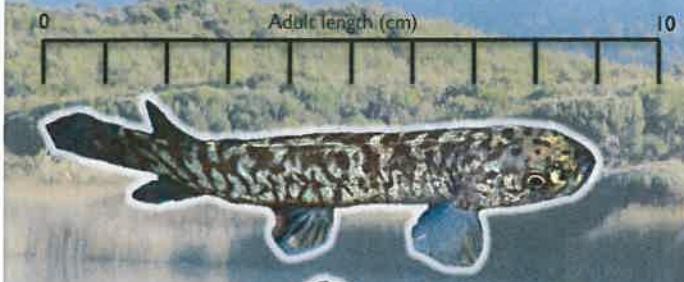
Background photo courtesy of Marc Schallenberg

Fish species in Lake Wanaka

The deep glacial lake of Lake Wanaka is New Zealand's fourth largest lake and the source of the Clutha River, the second longest river in the country and longest in the South Island. The lake has two main inflowing tributaries, the Matukituki and Makarora Rivers, and is home to three New Zealand native fish species (Koaro, Common Bully and Long Fin Eel) and three self-sustaining introduced fish species (Land-locked Chinook Salmon, Rainbow Trout and Brown Trout).



Koaro *

Juveniles are one of the five whitebait species, identifiable from the other four species as long, tube-shaped and surprisingly good at climbing up rocks and waterfalls. They are classified as being "at risk" for extinction, with their population declining.

Average adult size shown: 8-10 cm; 5-10 g

Common bully *

Present throughout New Zealand, adult males make a nest, attract females to it and guard the hatchlings. They are well camouflaged fish who feed on small insects.

Average adult size shown: 5-7cm; 4-6 g

Long fin eel or Tuna

Before the introduction of trout and salmon, long fin eels were the biggest predators in Lake Wanaka. They can live up to 100 years in freshwater and head out to sea to spawn before dying. Due to habitat modification, their numbers are declining.

Average size caught: 100 cm; over 20 kg

Chinook or Quinnat Salmon *

First introduced to Lake Wanaka in 1918 from California, Chinook Salmon spend their entire life in the lake, rather than going out to sea soon after they hatch. Adults only spawn (lay eggs) once in their lives, then die.

Average size caught: 35-40cm; 0.4-0.8kg; adult shown

Rainbow Trout *

Native to California and introduced to Lake Wanaka in the 1900's, Rainbow Trout live in the deeper waters of the lake, feeding mostly on small fish. They only live 4-5 years and inhabit warmer waters than brown trout, so are spread throughout New Zealand.

Average caught: 45-50 cm; 1.2-1.5kg; adult shown

Brown Trout *

Native to Europe and introduced to Lake Wanaka in 1885, Brown Trout eat large insects and small fish. They are very shy, hiding if they see movement on the lakeside. Adults can live for 8-10 years and spawn (lay eggs) every year.

Average caught: 45-50cm; 1.2-1.5kg, adult shown

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* Photos courtesy of Stella McQueen
# Photo courtesy of Fish and Game New Zealand
% Photos courtesy of Rachel Paterson
Background photo courtesy of Marc Schallenberg

Otago Regional Council

Catchments Otago

Otago Regional Council Waiwera science study

Objective:

To communicate the results of the science study that Otago Regional Council (ORC) undertook in the Waiwera catchment, and advise what will happen next.

Audiences:

- Waiwera catchment community
- South Otago – those interested in water quality as well as the wider public
- Wider Otago – those interested in water quality as well as the wider public
- ORC staff/councillors
- Environmental extension group members (industry stakeholders)

Messages:

- What the study involved
- Why it was done
- What the results are
- What the results mean
- What happens next

Background: The goals for this study were to assess patterns in water quality in relation to land-use activities, compare water quality with State of Environment limits (Schedule 15 of the Water Plan), and assess in-stream habitat quality.

Tools/channels:

- The printed report
- A printed summary of the report (key points/findings and what they mean)

Promoted via the following channels:

- Public meeting in Clinton (advertised in local papers and a potential maildrop to people in the catchment)
- Media release to local newspapers and relevant publications
- Good Water in Otago Facebook page (and ORC Facebook page)
- On-Stream e-newsletter
- Waterlines quarterly newsletter
- Internal communications to ORC councillors and staff

People:

Rachel Ozanne – to present at the meeting
Lisa Gloag – to arrange report printing, writing of the summary, and promotion of the results via the channels mentioned above
Rebecca Begg/Nicole Foote – liaison specialists in South Otago
Councillor attendance optional

Timeframe:

- November 2017 – public meeting to be held (to allow for report printing and lambing/calving season to finish). Date and venue TBC
- Other publicity to follow directly from this meeting

OTAGO REGIONAL COUNCIL

Agenda for a meeting of the Policy Committee to be held in the Council Chamber, 70 Stafford Street, Dunedin on Wednesday 2 August 2017, following the Communications Committee

Membership:
Cr Gretchen Robertson (Chairperson)
Cr Michael Laws (Deputy Chairperson)
Cr Graeme Bell
Cr Doug Brown
Cr Michael Deaker
Cr Carmen Hope
Cr Trevor Kempton
Cr Ella Lawton
Cr Sam Neill
Cr Andrew Noone
Cr Bryan Scott
Cr Stephen Woodhead

Apologies: Cr Noone

Leave of Absence: Cr Neill

In attendance:

Please note that there is an embargo on agenda items until 10:00am on Monday, 31 July 2017.

CONFIRMATION OF AGENDA

CONFLICT OF INTEREST

PUBLIC FORUM

MINUTES

The minutes of the meeting held on 14 June 2017, having been circulated for adoption.

ACTIONS - (Status report on the resolutions of the Policy Committee).

Report No.	Meeting	Resolution	Status
2017/0867 Plan Change 1D: Flow requirements for River Takes	14/6/17	*That a draft communications strategy to explain Plan Change 1D be provided to the next round of Council meetings*	OPEN

PART A – FOR RECOMMENDATION

Item 1
2017/0820 **Director's Report on policy progress to July 2017.** DPPRM, 14/07/17 -

The report gives an overview of significant activities undertaken by the Policy section for the period 27 May to 14 July 2017, including: national policies, strategies and plans; ORC policy, plans and strategies; water quantity planning; regional transport

The report *"Strategic analysis of options to improve management of ecosystems and biodiversity for Otago Region"*, completed by Wildland Consultants, is circulated separately with the agenda.

OTAGO REGIONAL COUNCIL

Minutes of a meeting of the Policy Committee held in the Council Chamber, 70 Stafford Street, Dunedin on Wednesday 14 June 2017, commencing at 4:45pm

Membership:

Cr Gretchen Robertson (Chairperson)
Cr Michael Laws (Deputy Chairperson)
Cr Graeme Bell
Cr Doug Brown
Cr Michael Deaker
Cr Carmen Hope
Cr Trevor Kempton
Cr Sam Neill
Cr Andrew Noone
Cr Bryan Scott
Cr Stephen Woodhead

Apologies: Crs Deaker and Noone

Moved Cr Robertson
Seconded Cr Scott

That the apologies be accepted.
Carried

In attendance:

Peter Bodeker (CE)
Nick Donnelly DCS)
Gavin Palmer (DEHS)
Fraser McRae DPPRM)
Scott MacLean (DEMO)
Michele Poole (Acting DSHE)
Denise Anderson
Suzanne Watt
Dale Meredith
Lauren McDonald (Committee Secretary)

CONFIRMATION OF AGENDA
No changes to the agenda.

CONFLICT OF INTEREST
No conflicts of interest were noted.

PUBLIC FORUM
No public forum was held.

Otago Regional Council

MINUTES

The minutes of the meeting held on 3 May 2017, having been circulated were adopted of the motion of Crs Hope and Neill.

ACTIONS
Status report on the resolutions of the Policy Committee.

Report No.	Meeting	Resolution	Status
2017/0679 Director's report on policy progress to March 2017	22/3/17	*Request legal clarification of appropriate mediation reporting to councillors*	CLOSED Report 2017/0770 3 May 2017.

PART A – RECOMMENDATIONS

Item 1
2017/0867 **Plan Change 1D: Flow Requirements for River Takes.** DPPRM, 09/06/17

The report provided the reasoning for the continuation of Plan Change 1D. The plan change provides clarification on the difference between residual and minimum flows, the affects on deemed permit replacement, issues identified with existing plan provisions, outcomes of a plan change and timeframes for plan change.

Cr Robertson summarised the report and the recommendation to formally proceed with Plan Change 1D.

Discussion was held on the current Water Plan, provision of clear communications to the community on the definition of residual and minimum flows, their conditions and encouragement to complete deemed permit replacement by 2021.

A request was made for a visual explanation of minimum flow and residual flow applications to rivers and tributaries to assist with the communication strategy for the plan change.

Mr McRae confirmed a colour code identifier of residual and minimum flows could be applied on a regional scale level map rather than catchment specific. He advised that communications on minimum flows at catchment meetings could include an explanation on where this fits in with residual flows.

Mr McRae confirmed that no review of existing residual flows was been undertaken as part of the plan change and therefore there was no need for applicants to delay completion of applications.

A request was made to ensure as part of formal presentations there is a visual explanation to clearly set out the framework of the plan change.

Moved Cr Woodhead
Seconded Cr Scott

That Council resolve to proceed with Plan Change 1D: Flow Requirements for River Takes.

Motion carried

A suggestion was made for another workshop to be held.

Discussion was held on the specifics to be included in the communications strategy to be prepared by staff. The communications plan to include the actions to be taken for engagement and education of the community on the purpose and process for Plan Change 1D.

Moved Cr Laws
Seconded Cr Bell

That a draft Communications strategy to explain Plan Change 1D be provided to the next round of Council meetings.

Motion Carried.

PART B - FOR NOTING

Item 2
2017/0820 **Director's Report on policy progress to May 2017.** DPPRM, 26/05/17

The report provided an overview of significant activities undertaken by the Policy section for the period 13 April to 26 May 2017, including: national policies, strategies and plans; ORC policy, plans and strategies; water quantity planning; regional transport

The report *"Otago Regional Council Home Heating Survey"*, completed by Key Research, 2016, was circulated separately with the agenda.

Discussion was held and Mr McRae responded to questions from councillors on NES for Plantation Forestry; the regional council role re natural hazard risk for urban development; a proposed plan change to set water quality limits for the Lower Waitaki Aquifer.

Cr Noone returned to the room at 5:18pm

A concern was raised on the gaps in understanding in regard to the Housing Accord and Special Housing Areas Act and the appropriate management of natural hazards by district and regional councils.

A suggestion was made for the issue of urban development and management of natural hazards to be raised at the Regional Sector Meeting and the Mayoral Forum to understand if there are also issues fro the TLAs.

A request was made to write a letter to the Mayoral Forum, Regional Sector Group and directly to each of the local members of parliament outlining the concerns.

Moved Cr Scott
Seconded Cr Noone

a) That the report on home heating is received.
b) That this report is noted.

Motion carried

The meeting was declared closed at 5:41pm.

Chairperson

Otago Regional Council

REPORT

Document ID: A1019118

Report Number: 2017/0937
Prepared For: Policy
Prepared By: Director Policy, Planning and Resource Management
Date: 14 July 2017

Subject: **Director's report on Policy Progress July 2017**

This directorate report contributes toward the following Strategic Plan Goals:

1. Active resource stewardship
2. Active regional partnerships
3. Realisation of new opportunities

1. POLICY RESPONSES

1.1 National Policies, Strategies and Plans

The following were received over the seven week period to 14 July 2017:

Agency	Number	Document
Ministry for the Environment	1	National Environmental Standard for the Outdoor Storage of Tyres
Ministry for Primary Industries	1	National Environmental Standard for Marine Aquiculture

The following responses were made over the seven week period:

Proposal	Response Type	Issues
None		

1.2 Territorial Authority and Regional Authority Plan Changes and Resource Consent Applications

The following were received over the six week period to 26 May 2017:

Agency	Number	Document
QLDC	5	Resource Consent application
DCC	2	Resource Consent application

Staff continued to assist Dunedin City with activity classification and natural hazard management in their development of the city district plan review "2GP".

ORC received notice of withdrawal for the application at 38 Richmond Street, South Dunedin, ending the appeal. It is understood the applicant will consider another option for development on that site that will not require public notification.

1.3 Other Proposals

Proposal	Response Type	Issues
None		

2. ORC: POLICY, PLANS AND STRATEGIES

2.1 Review of Regional Policy Statement

Twenty six appeals have been received on the proposed Regional Policy Statement. In addition to most of these parties lodging an interest in becoming party to another appellant's appeal, a further 18 new parties have joined in, as provided for under Section 274 of the RMA.

A third week of Court assisted mediation was completed in the week commencing 19 June. Good progress was made in resolving outstanding issues. All parties are now considering possible amendments. Council will update the Environment Court by 31 July, identifying which, if any, appeals remain unresolved and need Court time.

2.2 Urban Water Quality Strategy

The 1-day workshop between Council, territorial authorities, iwi and the NZ Transport Agency has been postponed until Wednesday 23 August, to enable more people to attend.

As a consequence, the timeline to complete the Strategy has been adjusted, with the final draft presentation to Council being delayed to September. The adjusted timeline follows:

Table 1: Timeline to complete urban water quality strategy

Action	Who	By
Key stakeholders consider 1st draft	Key stakeholders	Tue 22 Aug
ORC councillors feedback to UWQ Reference Group	ORC councillors	Tue 22 Aug
1-day workshop with key stakeholders [at Alexandra]	ORC [all councillors are invited] Key stakeholders	Wed 23 Aug
Finalise strategy	UWQ Reference Group	Thu 31 Aug
Proposed Strategy considered by Policy Committee	Policy Committee	Wed 13 Sep
Council adopts Strategy	ORC	Wed 27 Sep

2.3 Biodiversity Strategy

Wildland Consultants Ltd have finalised their report, 'Strategic Analysis of Options to Improve Management of Ecosystems and Biodiversity for Otago Region' which provides an important input to developing Council's Biodiversity Strategy. A copy of this report is attached, for information.

The Biodiversity Reference Group have considered this report and have noted that the strategy will be developed over the next few months, in accordance with the timeline that follows.

The Group noted that there is some overlap with the work of the Pest Reference Group, as pest management is an important action in maintaining and improving biodiversity within the region.

Cr Andrew Noone, as chair of the Pest Reference Group, is being invited to join the Biodiversity Group in guiding strategy development. A Stakeholder Forum on Biodiversity and Pests, proposed for later this year, would cover both work streams.

Table 1: Biodiversity Strategy development timeline

Action	Who is involved	Time
Develop draft strategy	Staff, Biodiversity Reference Group	Jul-Sep 2017
Key Stakeholder Forum [Biodiversity/Pests]	Councillors, staff, stakeholders	Oct 2017
Online feedback on draft strategy	Stakeholders, community	Nov-Dec 2017
Develop initial implementation plan	Staff	Sep-Dec 2017
Adopt strategy	Council	Feb 2018
Launch strategy	Council, stakeholders	Mar 2018

2.4 Air Strategy

A draft Air Strategy is being prepared to deliver good air quality throughout Otago. It will focus on how ORC intends to work with key stakeholders and the wider community. The initial draft will be presented at a Council workshop in August. Online feedback will be sought on the draft, and there will be a meeting with key stakeholders later this year to build on existing work being done in this area.

3. WATER QUANTITY PLANNING

3.1 Proposed Plan Change 5A Lindis: Integrated water management

Council received 1 appeal on Proposed Plan Change 5A Lindis: integrated water management, while a further 15 Section 274 parties to the proceedings notices have been lodged.

Environment Court-assisted mediation was held on 8 and 9 December 2016, with some 25 people attending. Further hydrological, cultural, and ecological investigations and a social impact assessment have been undertaken as a result of this mediation.

The parties reported back to the Court on 28 April 2017 on progress and potential dates for reconvened mediation. The appeal was referred back to mediation and court facilitated expert conferencing. Court facilitated expert conferencing was held on 6 June and mediation continued on 4 July. The parties will report back to the Court by the end of July.

3.2 Development of Proposed Plan Change 5D Cardrona: Integrated water management

Preliminary work is being undertaken to resume the development of an integrated water management plan change for the water resources in the Cardrona catchment and the Wanaka Flats (the Cardrona River, Cardrona Alluvial Ribbon Aquifer and Wanaka-Cardrona Aquifer).

Project management materials (including Terms of Reference, Project Execution Plan, Programme Gantt chart, Risk Register) have been prepared, and existing technical reports are being updated.

The next consultation round on the options for managing water quantity in the catchment is tentatively scheduled for mid-late 2017.

3.3 Development of Proposed Plan Change 5C: Manuherikia Catchment: Integrated water management

Community consultation on options for the plan change occurred on 21-23 March in Oturehua, Omakau and Alexandra. Drop-in sessions were held from 1:00-3:00 pm and 6:30-8:00 pm at each location. At the drop-ins the community had the opportunity to discuss the options with council staff, take information on the options home with them, and provide feedback. Feedback could also be provided via a feedback form, an online feedback form or via email. Feedback was received from 120 individuals/groups. This feedback has been summarised, sent to those who provided feedback and the summary made available on the council website.

Along with receiving community feedback, a Social Impact Assessment, Cultural Impact Assessment, and an Economic Assessment are being commissioned. These reports are anticipated to be received in the third quarter of this year.

We will be going back to the community, but not until after the economic and social reports are available. We are continuing to work with the wider community.

A draft plan change will then be developed, using all technical and scientific investigation to date, all consultation feedback, and the economic, cultural, and social reports. The draft plan change will then be workshopped with councillors and consulted with the community for feedback later this year, before a proposed plan change is formally notified.

3.4 Development of Proposed Plan Change 1D: Flow Requirements for Water Takes

The first series of community consultation related to the development of Plan Change 1D: Flow Requirements for Water Takes took place during March 2017. A policy committee workshop held on 18 May 2017 included discussion on the background and likely scope of the plan change. The conclusion from that workshop was that a recommendation to continue to develop the plan change should go to Council. A report containing a recommendation to continue to develop the plan change was considered by Council on 28 June and Council resolved to continue to develop the plan change.

A second series of community consultation related to the development of the plan change will take place 7-10 August at a number of locations.

3.5 Proposed Plan Change 3E: Arrow catchment and Wakatipu Basin Aquifer

Preliminary work is being undertaken on development of a minimum flow plan change for the surface water in the Arrow catchment, and the connected Arrow Bush Creek Ribbon Aquifer and the Wakatipu Basin aquifers.

Project management materials (including Terms of Reference, Project Execution Plan, Programme Gantt chart, Risk Register) have been prepared and existing technical reports are being updated.

The first stage of consultation took place 26-27 June 2017, plus there was a key stakeholder workshop on 30 June 2017.

4. REGIONAL TRANSPORT

The South Island Regional Transport Committee chairs have prepared a joint submission on NZ Transport Agency's draft strategic long-term view.

Otago Regional Council and Environment Southland are collaborating on the development of a common strategic results framework for the 2017/18 update of the Otago and Southland Regional Land Transport Plans 2015-21. This will aid the committees to track progress towards their common desired outcomes.

5. GENERAL

Arrowtown Mahu Whenua Gateway

With Councillor Lawton I attended the second meeting of this Arrowtown based group. The group is seeking to work with Mt Soho properties and make connections with the management of their 53,000 ha QE II covenants.

A wide range of interested parties have been identified and the group is looking to connect with them – in the case of ORC that could include coordination of river works and consenting for river bed disturbance activities.

6. RECOMMENDATION

a) That the report by Wildlands Consultants, 'Strategic Analysis of Options to Improve Management of Ecosystems and Biodiversity for Otago Region', is received.

Fraser McRae
Director Policy Planning and Resource Management

Annex: Strategic biodiversity options for ORC by Wildlands Consultants

STRATEGIC ANALYSIS OF OPTIONS TO IMPROVE MANAGEMENT OF ECOSYSTEMS AND BIODIVERSITY FOR OTAGO REGION

providing outstanding ecological services to sustain and improve our environments

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R4262

STRATEGIC ANALYSIS OF OPTIONS TO IMPROVE MANAGEMENT OF ECOSYSTEMS AND BIODIVERSITY FOR OTAGO REGION

Indigenous forest and grassland remnants in the North Branch Waikouaiti River.

Contract Report No. 4262

June 2017

Project Team:
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EXECUTIVE SUMMARY

Otago Regional Council (ORC) is reviewing the roles it plays with respect to ecosystems and biological diversity, in order to give better effect to its statutory functions and responsibilities under the Resource Management Act 1991 (RMA). Regional councils have a broad mandate for maintaining indigenous biological diversity, stemming from Section 30(1) of the RMA. A number of national goals and policy statements are also relevant.

Wildland Consultants and Beca were commissioned to analyse options to improve management of indigenous ecosystems and diversity for Otago. The scope of the project includes terrestrial, freshwater, and marine ecosystems within Otago. As part of the project, the statutory and non-statutory framework covering the project was assessed, current indigenous biodiversity values of Otago Region were summarised, ecosystem zones were delineated and described, organisations involved in protecting and enhancing indigenous biodiversity in Otago were identified and their activities summarised, and the aspirations of organisations with respect to roles for ORC were canvassed with a representative selection of organisation representatives. From this process, options were developed for ORC to better achieve the aspirations of the Otago community for indigenous ecosystems and biodiversity.

Otago Region is mostly based on the Clutha River catchment but broadens in the coastal area from the Waitaki River to the mid-Catlins. The Clutha River is the largest river by volume in New Zealand. Thirteen ecological regions and 39 ecological districts cover Otago Region, with 17 ecological districts occurring only in Otago. Eleven ecosystem zones were defined as part of this project, based on differences in landforms, indigenous forest, and non-forest cover. Inland basin floors, downlands, and lowland plains retain less than 10% of their original vegetation cover, but the zones in mountainous areas and in the Catlins have greater (46-86%) indigenous cover.

Key terrestrial Otago ecosystems include a variety of tussock grassland, wetland, and inland saline habitats on remnants of the Otago Peneplain, which support a large number of threatened plant, lizard, fish, and invertebrate populations; areas of indigenous forest, mainly in the east, south, and west of Otago Region, which provide habitat for threatened indigenous forest fauna; montane tall tussock grasslands, which are being cleared at an alarming rate; and naturally rare limestone, saline, and outwash plain ecosystems. Pressures on these ecosystems and species include clearance of habitat, mammalian predation, and invasion by exotic weeds.

The marine part of Otago Region can be divided into five coastal zones, and contains a number of key habitats, including river mouths, estuaries, intertidal and shallow subtidal habitats, biogenic habitats, deep sub-tidal habitats, and canyon heads. The Tautuku and Tahakopa estuaries are nationally significant due to their relatively unmodified character. Otago Region is rich in marine fauna including marine mammals (seals, sea lions, dolphins, whales) and seabirds (penguins, shags, albatross, gulls, petrels), marine algae, and benthic organisms.

At least 65 organisations are actively working on the protection and enhancement of indigenous biodiversity in Otago Region, including four government departments, five TLAs,

Otago Regional Council, and approximately 50 NGOs. Many NGO project focus on coastal habitats, forests, and streams. Relatively fewer NGO projects are located in dryland habitats or involve lakes. Significant NGO projects include wilding conifer control in the Queenstown area and northern ranges, conservation of marine avifauna in coastal Otago, the burgeoning control of mammalian predators in the Dunedin area, and predator control projects in the Dart, Matukituki, and Makarora areas in the western mountains. Department of Conservation protects significant areas of forest and mountain lands, and an increasing amount of alpine grassland and herbfield following tenure review of pastoral leases, but there are large parts of Otago Region, especially in the eastern half of the Region, with little protection of indigenous biodiversity. There is little management of indigenous biodiversity in the marine area, but the South East Marine Protection Forum process should result in a variety of marine protected areas.

Representatives of organisations offered numerous suggestions for actions that Otago Regional Council could undertake, which fell in the categories of advocacy, biosecurity, capacity, direct action, funding, monitoring and reporting, partnerships, policy, and strategy. Regional councils in other parts of New Zealand are undertaking variety of actions to maintain and enhance indigenous ecosystems and biodiversity.

Options suggested for actions that Otago Regional Council could undertake include building capacity and relationships, development of a regional biodiversity strategy, development of a regional biodiversity accord, improve state of the environment monitoring, coordination of biodiversity enhancement actions, establishment of regional parks and reserves, protect montane tussock grasslands, support Predator-free Dunedin and other landscape scale pest animal control projects, establish a 'mountains to sea' biodiversity framework for the Clutha River, support catchment projects for the Waikouaiti, Kakanui, and Taieri Rivers, develop an Otago Biosecurity strategy, supporting the implementation of marine protected areas, and support research into inland lake and marine processes.

Method provided under policies in the Proposed Otago Regional Policy Statement are broad and cover both regulatory and non-regulatory tools. All of the options suggested in this report for consideration are consistent with RPS policies because all options can help to achieve the policy outcomes sought.

CONTENTS

Reviewed and approved for release by:

W.B. Shaw
Director/Principal Ecologist
Wildland Consultants Ltd

1. INTRODUCTION

Otago Regional Council (ORC) is reviewing its roles with respect to ecosystems and biological diversity, in order to give better effect to its statutory functions and responsibilities under the Resource Management Act 1991 (RMA). ORC completed an internal review of the biodiversity activities that it is involved with in 2015. ORC now wishes to look more closely at the activities being undertaken across Otago and, accordingly, where it is best placed to meet regional needs into the future.

Wildland Consultants and Beca were commissioned to evaluate options for improved management of Ecosystems and Biological Diversity for Otago. The scope of the project includes terrestrial, freshwater, and marine ecosystems within Otago. As part of the project, current indigenous biodiversity values of Otago Region were summarised, ecological zones were delineated and described, organisations involved in the protection and enhancement of indigenous biodiversity were identified and their activities summarised, and the aspirations of organisations with respect to roles for ORC were canvassed with a representative selection of organisation representatives. From this process, options were developed for ORC to better achieve the aspirations of the Otago community for indigenous ecosystems and biodiversity.

This report presents the findings of the above work, and the options identified will be considered by the Council. Selected options for strategic initiatives will then be developed further, along with more detailed prescriptions to assist implementation.

2. METHODOLOGY

The scope of this project is indigenous biodiversity. For this project we used the broad and inclusive definition of biodiversity from the New Zealand Biodiversity Strategy (2000):

> *The variety of all biological life - the different species, from micro-organisms to trees, animals, and fungi; the genes they comprise, and the ecosystems they collectively form. This includes diversity within species, between species, and of ecosystems"*

An initial meeting was held with the Regional Council reference group to confirm the brief and to better understand Council requirements. Information on ecosystems and biodiversity within Otago Region was then compiled and summarised. This included delineation of broad ecological zones and generation of land cover and threatened land environment attributes for these zones through overlays and GIS analysis of those spatial layers.

Information on the marine part of the Region was compiled from existing sources of information, much of which was made available from the South East Marine Protection Forum process that is currently considering protection options for marine habitats and biodiversity.

Information on agencies, authorities, and organisations undertaking projects involving indigenous biological diversity in Otago was gained from Wildlands staff knowledge

of many of these organisations and from website searches. These sources of information were then used to generate standardised information on these agencies, authorities, and organisations, by assessment of organisation websites, undertaking phone and email communications, and undertaking interviews with organisation representatives.

Emphasis was placed on identification of existing projects involving indigenous biodiversity, and the actions that representatives of other organisations consider the Council could be undertaking, or undertaking better, to maintain and enhance indigenous biodiversity. Interviews with stakeholder representatives were particularly helpful in generating information on these aspects of the project.

3. STATUTORY AND NON-STATUTORY FRAMEWORK

3.1 Overview

Management of biodiversity can be a relatively complex undertaking, with strategic directions potentially available at international, national, and regional scales. Most Regional Council work programmes have an influence on biodiversity at some level, either directly or indirectly. Given the broad and comprehensive nature of biodiversity management, there is also a range of partners and stakeholders with either a statutory responsibility or non-statutory interest for biodiversity management. The most relevant strategies and legislation are summarised below, setting the framework to help inform the roles and responsibilities of the Otago Regional Council in relation to biodiversity management.

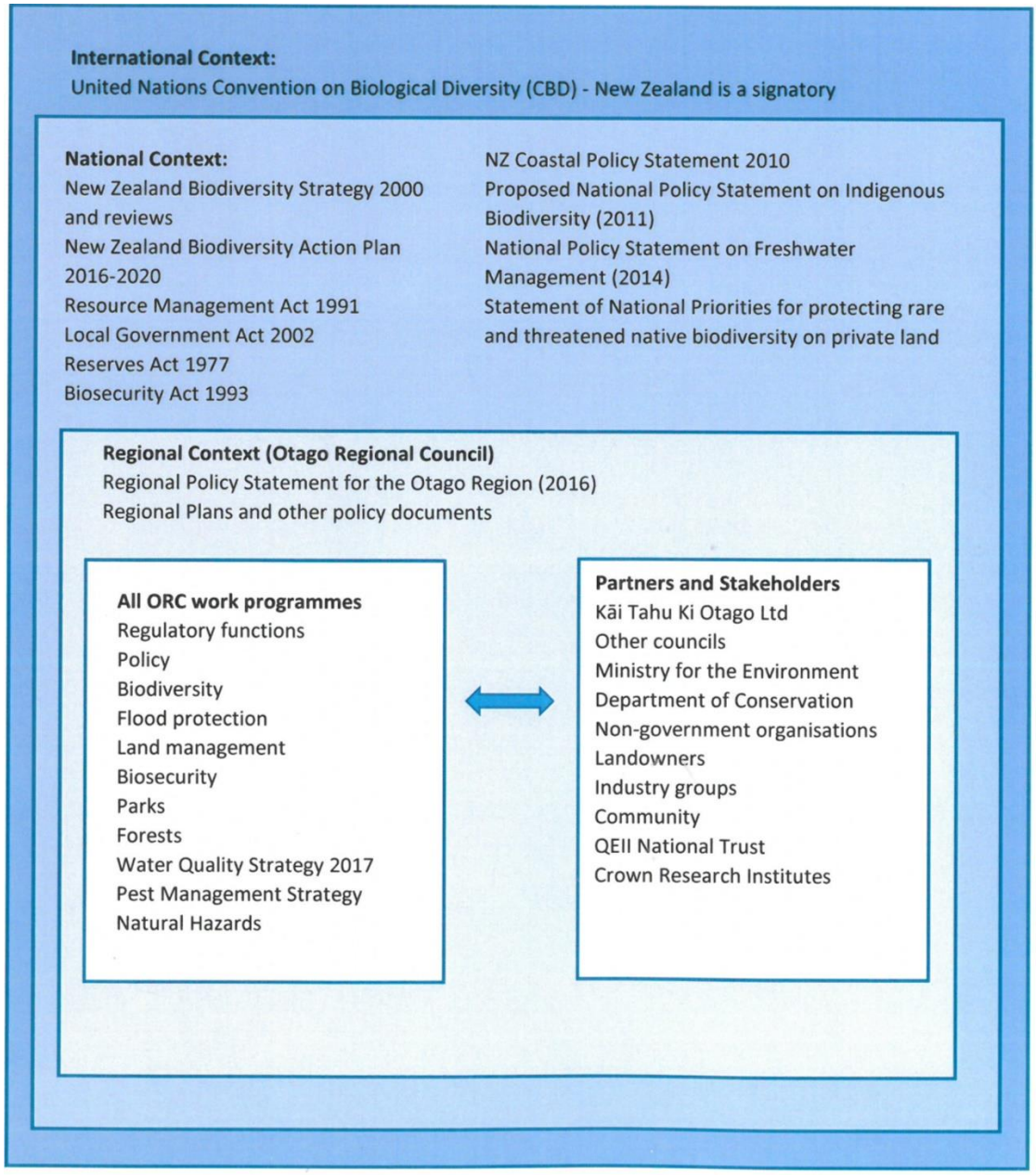
3.2 The New Zealand Biodiversity Strategy 2000-2020

The New Zealand Strategy on Biodiversity was published in 2000 as a part of New Zealand's international responsibility under the Convention of Biological Diversity. This strategy establishes a framework to halt decline of biological biodiversity. As well as "biological diversity", the strategy aims to address:

- *"**Genetic Diversity:*** The variability in the genetic make-up among individuals within a single species. In more technical terms, it is the genetic differences among populations of a single species and those among individuals within a population.

- ***Species Diversity:*** The variety of species - whether wild or domesticated - within a particular geographical area. A species is a group of organisms which have evolved distinct inheritable features and occupy a unique geographic area. Species are usually unable to interbreed naturally with other species due to such factors as genetic divergence, different behaviour and biological needs, and separate geographic location.

- ***Ecological (ecosystem) Diversity:*** The variety of ecosystem types (for example, forests, deserts, grasslands, streams, lakes, wetlands and oceans) and their biological communities that interact with one another and their non-living environments".



ORC's role in managing regional biodiversity in the context of international obligations, national drivers, and local partners and stakeholders.

The Strategy contains the following goals:

- To enhance community and individual understanding about biodiversity, and to inform, motivate and support community initiatives. Enable the community to equally share responsibility for and benefits from conserving New Zealand's biodiversity.

- Actively protect iwi and hapu interests in indigenous biodiversity, and build and strengthen partnerships between government agencies and iwi and hapu in conserving and sustainably using indigenous biodiversity.

- Halt the decline in New Zealand's biodiversity and to restore the remaining natural habitats.
- Maintain the genetic resources of introduced species that are important for economic, biological and cultural reasons by conserving their genetic diversity.

3.3 New Zealand Biodiversity Action Plan 2016-2020

The New Zealand Biodiversity Action Plan was released in October 2016 and sets out the national action plan for managing biodiversity for the next four years. It sets ambitious national targets toward greater protection and sustainable use of biodiversity. The targets put forward in this action plan aim to demonstrate New Zealand's progress towards achieving the goals of the New Zealand Biodiversity Strategy 2000-2020.

Other national-level plans that have come out of this plan include:

- Predator Free 2050: with an ambitious goal to rid New Zealand of introduced species
- War on weeds: with an aim to rid New Zealand of wilding conifers
- Battle for the Birds: this includes 1080 drops and self-setting traps to protect high risk populations of New Zealand's indigenous birds.

National Target 3 is to integrate biodiversity into national and local strategies, policies, plans and reporting. The key actions for achieving this target are:

- **BY 2020**, *we will fully implement a new national environmental reporting series, including the synthesis report Environment Aotearoa, in which biodiversity is a cross-domain theme.*
- **BY 2017**, *natural resources are recognised in New Zealand's Long Term Fiscal Statement underlining the importance of the natural resource base to New Zealanders' living standards.*
- **BY 2017**, *investigate the need and potential to produce New Zealand environmental-economic accounts.*

National Target 7 aims to promote the sustainable use and protection of biodiversity through improved national guidance, information and industry background. Key actions for achieving this target are:

- **BY 2020**, *a National Policy Statement on Indigenous Biodiversity will provide national direction to councils on managing biodiversity under the Resource Management Act 1991.*
- **New Zealand** *will continue work to improve the efficiency of agricultural production systems by improving decisions around land use, maintaining soil and water health, and enhancing flexibility in land management and farming practices.*

- **BY 2018**, *a National Environmental Standard for Plantation Forestry will be implemented to improve consistency and reduce negative impacts in the management of plantation forestry.*

3.4 Part 2 of the Resource Management Act

The Resource Management Act gives direction to Regional Councils and Territorial Authorities as to how they should managing their resources. Part 2 of the Act, encompassing Section 5, 6, 7 and 8 of the Act, outlines the purpose and principles. Section 5 of the RMA outlines the purpose of the Act which is to:

> *"(1) The purpose of this Act 1991 (RMA) is to promote the sustainable management of natural and physical resources.*
>
> *(2) In this Act, sustainable management means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety while—*
> *(a) sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*
> *(b) safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and*
> *(c) avoiding, remedying, or mitigating any adverse effects of activities on the environment."*

The term "biodiversity" is not directly used in the RMA but it is managed indirectly through all matters listed in Section 5(2).

Section 6 of the RMA outlines matters of national importance.

> *"In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall recognise and provide for the following matters of national importance:*
>
> *(a) the preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development:*
> *(b) the protection of outstanding natural features and landscapes from inappropriate subdivision, use, and development:*
> *(c) the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna:*
> *(d) the maintenance and enhancement of public access to and along the coastal marine area, lakes, and rivers:*
> *(e) the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga:*

(f) the protection of historic heritage from inappropriate subdivision, use, and development:
(g) the protection of protected customary rights."

Section 7 outlines other matters that particular regard has to be given to:

"(a) kaitiakitanga:
(aa) the ethic of stewardship:
(b) the efficient use and development of natural and physical resources:
(ba) the efficiency of the end use of energy:
(c) the maintenance and enhancement of amenity values:
(d) intrinsic values of ecosystems:
(e) [Repealed]
(f) maintenance and enhancement of the quality of the environment:
(g) any finite characteristics of natural and physical resources:
(h) the protection of the habitat of trout and salmon:
(i) the effects of climate change:
(j) the benefits to be derived from the use and development of renewable energy."

3.5 Functions of Regional Councils under RMA 1991

Section 30(1) of the RMA outlines the functions of regional councils for the purpose of giving effect to the Act in its region. Subsection (ga) states that:

"(1) Every regional council shall have the following functions for the purpose of giving effect to this Act in its region:

(ga) the establishment, implementation, and review of objectives, policies, and methods for maintaining indigenous biological diversity:"

The RMA defines biological diversity as "*the variability among living organisms, and the ecological complexes of which they are a part, including diversity within species, between species, and of ecosystem".*

3.6 Functions of Territorial Authorities under the RMA 1991

Section 31(1) of the RMA outlines the functions of Territorial Authorities when giving effect to the Act. Subsection (1)(b)(iii) states that:

"(1) Every territorial authority shall have the following functions for the purpose of giving effect to this Act in its district:

(b) the control of any actual or potential effects of the use, development, or protection of land, including for the purpose of—
(iii) the maintenance of indigenous biological diversity."

In accordance with Section 31(1) of the RMA, a District Plan must contain rules to control any potential effects of development or use activities on the maintenance of biodiversity.

3.7 Proposed Regional Policy Statement for Otago

Otago's operative Regional Policy Statement is currently under review. The Proposed Regional Policy Statement (RPS) plans the direction for future management of Otago's natural and physical resources and provides the foundation for development of regional plans and district plans. This includes the development of objectives, policies and methods for managing biodiversity.

The proposed RPS was publicly notified on 23 May 2015. A total of 156 submissions and 42 further submissions were received. The hearing panel heard or received evidence from 88 submitters in late 2015, deliberated from December 2015 to September 2016, and the Council released its decisions in October 2016. The appeal period closed in December 2016 and 26 notices of appeals were received. ORC, appellants and Section 274 parties now have the opportunity to mediate on the issues raised in appeals. Any issues not resolved through mediation will become the subject of an Environment Court hearing.

The proposed RPS has a number of relevant objectives and policies that have either a direct or indirect influence on biodiversity. The most relevant are Policies 3.1.9 and 3.1.12, as presented below. There are a number of appeals on both these policies. In terms of relevance to this report, the proposed methods include a range of regulatory and non-regulatory tools.

Policy 3.1.9 Ecosystems and indigenous biological diversity
Manage ecosystems and indigenous biological diversity in terrestrial, freshwater and marine environments to achieve all of the following:

a) Maintain or enhance ecosystem health and indigenous biological diversity;
b) Maintain or enhance biological diversity where the presence of exotic flora and fauna supports indigenous biological diversity;
c) Maintain or enhance areas of predominantly indigenous vegetation;
d) Recognise and provide for important hydrological services, including the services provided by tussock grassland;
e) Recognise and provide for natural resources and processes that support indigenous biological diversity;
f) Maintain or enhance habitats of indigenous species and the habitat of trout and salmon that are important for recreational, commercial, cultural or customary purposes;
g) Control the adverse effects of pest species, prevent their introduction and reduce their spread.

Method 3: Regional Plans
Method 3.1
Method 4: City and District Plans
Method 4.1.3
Method 5: Research, Monitoring and Reporting
Method 5.2.1
Method 6: Non RMA Strategies and Plans
Method 6.4
Method 7: Education and Information
Method 7.1
Method 9: Advocacy and Facilitation
Method 9.2

Policy 3.1.12 Environmental enhancement
Encourage, facilitate and support activities which contribute to enhancing the natural environment, by one or more of the following:

a) Improving water quality and quantity;
b) Protecting or restoring habitat for indigenous species;
c) Regenerating indigenous species;
d) Mitigating natural hazards;
e) Protecting or restoring wetlands;
f) Improving the health and resilience of:
i. Ecosystems supporting indigenous biological diversity;
ii. Important ecosystem services, including pollination;
g) Improving access to rivers, lakes, wetlands and their margins, and the coast;
h) Buffering or linking ecosystems, habitats and areas of significance that contribute to ecological corridors;
i) Controlling pest species.

Method 2: Regional, City and District Council Relationships
Method 2.1, Method 2.2
Method 3: Regional Plans
Method 3.1
Method 4: City and District Plans
Method 4.1
Method 6: Non RMA Strategies and Plans
Method 6.1 - Method 6.9
Method 7: Education and Information
Method 7.1
Method 8: Funding
Method 8.1
Method 9: Advocacy and Facilitation
Method 9.1, Method 9.2

4. OTAGO REGION

4.1 Geography

Otago Region extends from the Main Divide of the Southern Alps, where its highest point is Tititea/Mt Aspiring, to the east Otago coast between the Waitaki River mouth and the Catlins. Much of the Region is based on the catchment of the Clutha River but it also extends north and south of the Clutha catchment in coastal Otago.

4.2 Geology

Otago Schist landforms dominate much of Otago, but volcanic intrusions and Tertiary sedimentary rocks occur in coastal Otago, and landforms in the Catlins comprise Triassic and Jurassic sandstones, mudstones, and other sedimentary rocks.

4.3 Catchments, rivers, and streams

The Clutha River is the longest river in the South Island (and second only to the Waikato River in New Zealand) and is the highest volume river in New Zealand.

Outside the Clutha catchment the Taieri River is the only other major river within Otago Region, but the Region contains the Shag/Waihemo and Kakanui catchments in the north and various rivers and streams that flow to the coast in the eastern Catlins.

4.4 Ecological character

4.4.1 Ecological regions and districts

Thirteen ecological regions and 39 ecological districts occur within Otago Region (Table 1; Figure 1). Of these, the Otago Coast and Lammerlaw Ecological Regions are the only ecological regions that occur wholly within Otago Region, while 17 ecological districts occur only within Otago. These are primarily the districts from the central lakes, Central Otago, and coastal Otago areas. These areas are therefore the most unique to Otago Region.

Only very minor parts of the Landsborough Ecological District (Aspiring Ecological Region), Ahuriri Ecological District (Mackenzie Ecological Region), and Nokomai Ecological District (Waikaia Ecological Region) occur within Otago Region.

However the 36 ecological districts that are better represented in Otago Region is a large number of ecological districts given the size of the region, and reflects the very strong gradients in geology, landform, and vegetation cover that occur within Otago Region.

Table 1: Ecological regions and districts (ED) within Otago Region.

Ecological Region	Ecological District	Total ED Size (ha)	Area in Otago Region (ha)	Proportion (%) of ED in Otago Region
Aspiring	Arawata	197,944	77,814	39
	Dart	171,544	114,994	67
	Landsborough	56,039	306	0.5
	Okuru	135,915	42,890	32
Mackenzie	Ahuriri	75,246	467	0.6
Central Otago	Dunstan	90,254	90,254	100
	Lindis	109,817	108,383	99
	Maniototo	263,618	275,521	100
	Manorburn	194,961	194,961	100
	Old Man	149,693	111,557	75
	Pisa	82,312	82,312	100
	Rock and Pillar	60,380	60,380	100
Kakanui	Dansey	71,790	56,485	79
	Duntroon	67,964	42,405	62
	Waianakarua	50,685	50,685	100
Wainono	Glenavy	51,386	18,383	36
	Oamaru	44,824	44,824	100
Otago Coast	Dunedin	38,856	38,856	100
	Tokomairiro	162,670	162,670	100
	Waikouaiti	68,802	68,802	100
Waitaki	Hawkdun	90,698	19,627	22
	St Bathans	39,953	26,293	66
	St Mary	75,287	5,305	7
Lammerlaw	Lawrence	99,210	99,210	100

Ecological Region	Ecological District	Total ED Size (ha)	Area in Otago Region (ha)	Proportion (%) of ED in Otago Region
	Macraes	113,862	113,862	100
	Tapanui	29,974	29,974	100
	Waipori	191,420	191,420	100
Lakes	Huxley	114,644	79,907	70
	Remarkables	86,869	85,409	98
	Richardson	119,918	119,918	100
	Shotover	94,011	94,011	100
	Wanaka	209,313	209,313	100
Mavora	Eyre	197,830	68,711	35
	Livingstone	114,809	25,578	22
Gore	Gore	297,700	127,821	43
Waikaia	Nokomai	109,396	158	0.1
	Umbrella	148,010	96,081	65
Catlins	Tahakopo	240,203	113,618	47
	Waipahi	93,251	50,272	54
NA	[marine part of region]		660,452	

4.4.1 Ecosystem zones

Zones

Eleven broad zones covering terrestrial ecosystems and habitats within Otago Region were defined for this project based on topography, geology, and vegetation cover (Table 2; Figure 2). These zones differ significantly in their cover of indigenous forest and cover of indigenous vegetation generally, and thus comprise zones useful to generate strategic directions and priorities for indigenous biodiversity management, or state of the environment reporting on indigenous biodiversity.

The largely mountainous zones (Blue Mountains, Inland Block Mountains, Northern Ranges, Western Lakes and Mountains), and the Catlins zone, all retain more than 45 percent of their indigenous cover, predominantly comprising non-forest vegetation except for the Blue Mountains and Catlins zones where indigenous cover is dominated by forest (Table 2).

Zones based on basin floors, plains, and downlands - Inland Basin Floors, Southern and Northern Downlands, and Lowland Plains - retain less than 10 percent indigenous cover, primarily non-forest cover on the plains and basin floors, and indigenous forest cover in the downlands.

A more detailed summary of the features of these ecosystem zones is presented in Appendix 1, along with maps.

Figure 1: Ecological districts within Otago Region

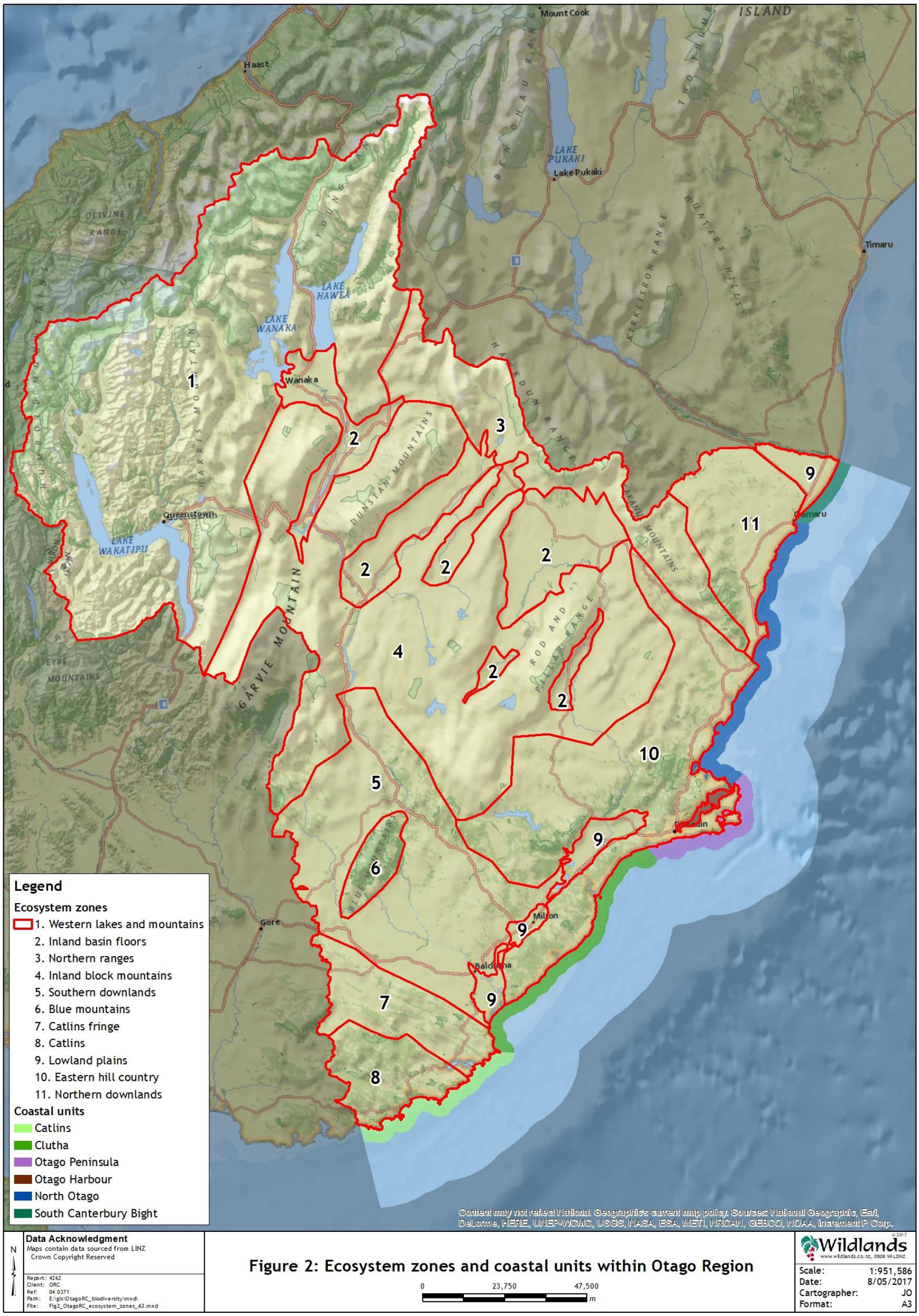


Figure 2: Ecosystem zones and coastal units within Otago Region

Table 2: Ecosystem zonation within Otago Region, ordered by least to greatest extent of indigenous cover remaining within each zone.

Land Use Zone	Area (ha)	Indigenous Forest (ha)	Indigenous Non-Forest (ha)	% Indigenous Cover Remaining
Inland basin floors	253,415	1,255	12,411	5
Southern downlands	328,486	11,811	5,306	5
Lowland plains	58,464	92	4,078	7
Northern downlands	120,232	8,624	911	8
Catlins fringe	89,650	7,934	3,804	13
Eastern hill country	355,040	33,816	16,100	14
Blue Mountains	30,505	11,120	2,882	46
Inland block mountains	757,409	6,995	346,038	47
Northern ranges	178,032	5,181	97,371	58
Catlins	70,594	43,570	1,728	64
Western lakes and mountains	948,572	134,832	676,366	86

Utility of Ecosystem Zonation

The 11 ecosystem zones described above have different combinations of elevation, landforms, indigenous and exotic vegetation cover, and land uses. These zones would be suitable, at a broad scale, for state of the environment reporting, for example reporting changes in the extent of indigenous cover classes. They also provide a basis for delivery of the most appropriate management actions to benefit biodiversity. For example, in the Inland Basin Floor, Lowland Plains, Northern Downlands, and Southern Downlands zones, the highest priority should be to protect all remaining indigenous vegetation, and increase the extent of indigenous cover through restoration projects that involve planting of indigenous plant species. Restoration of indigenous forest is particularly important in the Lowland Plains and Inland Basin Floors zones, as very little indigenous forest remains in these zones. In the zones with large amounts of indigenous cover remaining, the focus should be on large scale pest control projects to allow populations of indigenous fauna to expand and flourish within these extensive indigenous habitats. In the Catlins Fringe and Eastern Hill Country zones, the sizeable areas of gorse and/or broom provide an opportunity for restoration to indigenous forest if managed appropriately, and the larger areas of remaining indigenous forest in these zones could also be a focus for landscape-scale pest animal control activities.

5. KEY BIODIVERSITY FEATURES

Otago Region has significant ecological diversity, stretching from deepwater marine and coastal habitats through coastal forest to semi-arid inland basins and upland herbfield and grassland, and western lakes, rivers, and mountains. Otago is notable for its assemblages of endemic lizards, fish, plants, and invertebrates, and the marine mammals, penguins, and other shorebirds that occur along the Otago coast. Distinctive and special features of Otago's indigenous biodiversity are its coastal and marine habitats and fauna, tussock grassland uplands, inland saline habitats, lizards and fish, and rich plant and invertebrate diversity. These features are discussed in more detail below.

5.1 'Otago Peneplain'

The so-called Otago Peneplain (Forsyth 2001) is well-preserved in central Otago, especially in an area bounded by the Manuherikia River, Clutha River, Shag/ Waihemo River, and the coastal Otago hills. This comprises the Maniototo, Manorburn, Waipori, Rock and Pillar, and Macraes Ecological Districts, and falls within the eastern part of the Inland Block Mountains land use zone.

Ecological features included within this area are:

- Extensive upland tussock grassland vegetation with high vascular plant diversity.
- Significant wetlands, including large upland peat bogs, and numerous ephemeral wetlands, an originally rare ecosystem (Williams *et al.* 2007) classified as Threatened-Critically Endangered (Holdaway *et al.* 2012). Ephemeral wetlands provide habitat for numerous Threatened and At Risk plant species.

Sphagnum bog in tussock grassland

- Nationally significant inland saline habitats, an originally rare ecosystem (Williams *et al.* 2007) classified as Threatened-Critically Endangered, with only 10-100 hectares remaining (Holdaway *et al.* 2012). These saline habitats support populations of Threatened indigenous halophytic plant species and include New Zealand's only salt lake, Sutton Salt Lake near Middlemarch.
- Nationally significant populations of Threatened and At Risk (Goodman *et al.* 2014) freshwater fish, including Clutha flathead galaxias (*Galaxias* 'species D'; Threatened-Nationally Critical) in the vicinity of Lawrence, Central Otago roundhead galaxias (*G. anomalus*; Threatened-Nationally Endangered) in the Maniatoto, Teviot flathead galaxias (*G.* 'Teviot'; Threatened-Nationally Critical) in tributaries of Lake Onslow, and Eldon's galaxias (*G. eldonii*) and Dusky galaxias (*G. pullus*) in east Otago (both Threatened-Nationally Endangered).
- Nationally significant lizard populations, including those of grand skink (*Oligosoma grande*) and Otago skink (*Oligosoma otagense*), both classified as Threatened-Nationally Endangered (Hitchmough *et al.* 2016), and both unique to Otago Region.

Otago skink (*Oligosoma otagense*) is a nationally threatened lizard found only in Otago Region

- Numerous significant populations of Threatened and At Risk indigenous plant, taxa, including nationally significant populations of the grass *Simplicia laxa* and undescribed native bidibid *Acaena* aff *rorida*', both classified as Threatened-Nationally Critical (de Lange *et al.* 2013).

Habitat of *Acaena* aff. *rorida*, Ida Valley, Maniototo. This taxon is also currently known only from Otago.

Significant pressures on these biodiversity values include:

- Clearance of tussock grassland vegetation due to pastoral intensification and mining. This area experienced some of New Zealand's most rapid reductions in indigenous vegetation cover between 2002 and 2012, which resulted in a change in Threatened Environment Classification category from Chronically Threatened (10-20% cover remaining) to Acutely Threatened (<10% cover remaining) (Cieraad *et al.* 2015). Numerous Threatened and At Risk species are affected by such clearance.

- Clearance of inland saline habitats through pastoral intensification.

- Predation by feral cats, mustelids,

Wilding conifers and tussock grassland: Regenerating contorta pine (*Pinus contorta*) is visible in tussock grassland vegetation on the western slopes of Maungatua. If left uncontrolled, wilding conifers such as contorta pine can displace indigenous tussock grassland habitat.

and rodents on populations of lizards, including the Otago skink, in addition to loss of tussock grassland habitat.

- Significant predation by trout (*Salmo trutta*) on indigenous fish and invertebrates, in addition to background loss and modification of freshwater habitat and barriers to migration.

5.2 Indigenous forest

Indigenous forest is mostly restricted to the margins of Otago Region, but these areas contain important forest habitat, and many transitions between different forest types. Indigenous forest values include:

- Examples of cloud forest, an originally rare ecosystem type (Williams *et al.* 2007) at Dunedin and in the Catlins.
- Forest at Mt Watkin/Hikaroroa is present on volcanic boulderfields, an originally rare ecosystem type (Williams *et al.* 2007) classified as Nationally Endangered (Holdaway *et al.* 2012).
- Rare examples of matai-tōtara forest occur on productive landforms in scattered locations from near Balclutha to North Otago.
- Kānuka (*Kunzea serotina*) scrub is increasing in extent in Central Otago, and is providing more habitat for indigenous forest birds and invertebrates.
- Habitat for Threatened indigenous forest fauna. Beech forest in western Otago, the Blue Mountains, and mixed forest in the Catlins support populations of mohua (*Mohoua ochrocephala*; Threatened-Nationally Vulnerable; Robertson *et al.* 2013), and South Island long-tailed bat (*Chalinolobus turberculatus* (South Island); Threatened-Nationally Critical; O'Donnell *et al.* 2013). Both of these insectivorous species were formerly widespread but are now much reduced with populations that have been strongly reduced due to predation from exotic mammalian predators. Kea (*Nestor notabilis*) and rock wren (*Xenicus gilviventrus*) (both classified as Threatened-Nationally Endangered) are present in the western mountains of Otago.

Kea (Nationally Endangered) on a road sign in the Matukituki Valley.

5.3 Montane tall tussock grassland

Tall tussock grassland on the montane ranges of Central Otago (e.g. Rough Ridge), the foothills of taller ranges, and in uplands of the the Macraes area and Eastern Hill Country zone has been significantly reduced in extent over the last few decades, with the rate of reduction increasing more recently (Cieraad *et al.* 2015). Many of the tussock grasslands in these areas are species-rich, and comprise a matrix in which other habitats such as rock outcrops, shrublands, and gully and ephemeral wetlands are prominent. These habitats in turn provide shelter and feeding habitat for a range of indigenous lizards, birds, and invertebrates. Montane tussock grassland is being adversely affected by a number of land use activities, including grazing by livestock, burning, cultivation, and mining.

Montane tussock grassland in the Logan Burn area. A variety of habitats are visible, including sunny tussock slopes, shady tussock slopes, and abundant rock outcrop habitat.

5.4 Limestone ecosystems

The Shag/Waihemo Valley and North Otago contain cliffs and scarps of calcareous rocks, an originally rare ecosystem type (Williams *et al.* 2007) classified as Nationally Vulnerable (Holdaway *et al.* 2012). Limestone outcrops are key habitats for Threatened and At Risk plant species, but are relatively poorly-known in Otago Region.

Limestone ecosystems generally have little indigenous cover remaining, and are subject to invasion of exotic weeds that threaten to overwhelm any rare plants remaining on these limestone habitats. Restoration of indigenous forest around limestone outcrops could potentially help to maintain partially shaded limestone habitats, with rare plant species.

5.5 Inland outwash plains

Inland outwash plains are restricted to the upper Clutha basin within the Inland Basin Floors land use zone. They comprise outwash gravels generated by the historic glaciers that occupied the Lake Hawea and Lake Wanaka basins. These dry gravel landforms are critical habitats for a number of threatened plant species and were also important breeding habitat for seasonally-migrating wading birds, such as banded dotterel (*Charadrius bicinctus bicinctus*). Advances in irrigation systems have resulted in recent losses of outwash gravel habitat to more intensive agricultural practices. Residential development has also occurred on some of these habitats.

5.6 Inland saline ecosystems

Salt pan habitat of *Lepidium kirkii*, Central Otago

Otago Region contains nationally significant inland saline habitats, including areas of saline/sodic soils (salt pans) in the Maniototo and in the upper Clutha basin, and New Zealand's only confirmed inland salt lake at Sutton. A number of rare plant species are specialised to these habitats, including the rare indigenous cress *Lepidium kirkii* (Threatened-Nationally Critical) and the rare geometrid moth *Paranotoreas fulva* (At Risk-Relict; Stringer *et al*. 2012). Most salt pans are threatened by land use intensification involving cultivation and irrigation, and by invasion of exotic weeds (Wildland Consultants 2011).

5.7 River and lake ecosystems

Otago Region contains rare lake and river systems, on a national basis. For example the Lake Waihola-Waipori complex is nationally rare, and the Tautuku River is the only example of an east coast South Island river that has a catchment with over 95% indigenous cover. Sutton salt lake near Middlemarch is New Zealand's only confirmed example of a salt lake, and its bed supports distinctive indigenous turf vegetation when dry. Many rivers and streams in Otago support diverse populations of indigenous fish and invertebrates. Thirteen of these indigenous fish species are classified as Threatened or At Risk (Table 3), which is the most of any region of New Zealand. Most of these Threatened and At Risk species are galaxiid fish of inland areas.

Table 3: Threatened and At Risk fish species found in Otago Region.

Common Name	Species	Threat Classification
Teviot flathead galaxias	*Galaxias* 'Teviot'	Threatened-Nationally Critical
Clutha flathead galaxias	*Galaxias* 'species D'	Threatened-Nationally Critical
Lowland longjaw galaxias	*Galaxias cobitinis*	Threatened-Nationally Critical
Central Otago roundhead galaxias	*Galaxias anomalus*	Threatened-Nationally Endangered
Dusky galaxias	*Galaxias pullus*	Threatened-Nationally Endangered
Eldon's galaxias	*Galaxias eldonii*	Threatened-Nationally Endangered
Giant kōkopu	*Galaxias argenteus*	At Risk-Declining
Manuherikia alpine galaxias	*Galaxias* aff. *paucispondylus* 'Manuherikia'	Threatened-Nationally Endangered
Nevis galaxias	*Galaxias* 'Nevis'	Threatened-Nationally Endangered
Pomahaka galaxias	*Galaxias* 'Pomahaka'	Threatened-Nationally Endangered
Gollum galaxias	*Galaxias gollumoides*	Threatened-Nationally Vulnerable
Taieri flathead galaxias	*Galaxias depressiceps*	Threatened-Nationally Vulnerable
Southern flathead galaxias	*Galaxias* 'southern'	At Risk-Declining

6. MARINE ECOSYSTEMS

6.1 Overview of marine habitats

The marine ecosystem extends from mean high water springs (MHWS) to the 12 nautical mile limit of Otago Region. It is part of the South-East Marine Protection Planning Forum (see below) area, extending from Wallace Beach in the south to the Waitaki river mouth in the north. The coastline can be broadly categorised into five distinct environments (Figure 2):

- Lower extent of the Canterbury Bight, a coastline dominated by mixed sand and gravel beaches and braided rivers with lagoons/hapua at their outlets to the sea.
- Northern Otago coast, a sedimentary rock coast with shallow subtidal reefs supporting forests of giant kelp.
- Otago Peninsula, a prominent volcanic landform that strongly influences coastal currents, bordered to the east by a narrow shelf and deep water canyons that are found relatively close inshore.
- Clutha coastline, strongly influenced by fresh water input and sediment from the Clutha River, the biggest river by volume in New Zealand, which has a major effect on the chemistry and productivity of the coastal shelf waters.
- The Catlins, a cliffed and embayed coastline with old erosion-resistant sedimentary rocks that is strongly influenced by tidal currents and the outflow from Foveaux Strait/Te Ara a Kewa.

This stretch of coastline is recognised as distinct due to the mixing of sub-Antarctic and sub-tropical waters along the coast. In particular, the Southland Current is a special and major influence on the marine ecology of the area. Where the current heads north past the Otago Peninsula, the headland and offshore deep canyons narrow the current, creating periods where nutrients from deeper waters are potentially pushed up and become available in coastal waters. Wave exposure also has a significant impact, with the main exposure from the south to northeast, creating different habitats in sheltered areas, such as north of the Otago Peninsula, as well as behind smaller headlands and within bays.

6.2 South-East Marine Protection Forum

The South-East Marine Protection Forum (Roopu Manaaki ki te Toka) is currently undergoing a consultation process on a draft proposal for Marine Protected Areas (MPAs) in the South East Bioregion, under the remit of protecting biodiversity to help safeguard long term viability of habitats and ecosystems through the development of a network of MPAs. Note: the South-East Marine Area extends further North and South than the jurisdiction of Otago Regional Council. Through this process, a number of key habitats have been identified as sites worthy of marine protection:

- *River Mouths*

  The Waitaki River and Clutha River influence marine biodiversity, both in terms of freshwater input to the marine environment and the sediment that is transported to the sea. The area surrounding the Waitaki River is known to be an important foraging area for seabirds (including southern blue penguin - *Eudyptula minor minor*) and Hector's dolphin (*Cephalorhynchus hectori hectori*), classified as Threatened-Nationally Endangered (Baker *et al.* 2016). Rhodolith beds, often associated with high biodiversity value, are also likely to be associated with cobble habitat in this area, as well as known kelp beds that are important for juvenile fish species. In addition, some of the densest areas of squat lobster (*Munida gregaria*) have historically been found around the Waitaki River mouth.

- *Estuaries*

  Large estuaries are concentrated at two locations in Otago Region: at northern group including the mouth of the Pleasant River, Karitane, Blueskin Bay, Purakaunui Bay, Aramoana, Papanui Inlet, Hoopers Inlet, and Kaikorai Stream, and another cluster in the Catlins, comprising estuarine systems at the mouths of the Catlins, Papatowai, Fleming, and Waipati Rivers. Smaller estuaries and coastal lagoons are associated with many smaller rivers and streams in coastal Otago.

  Hoopers Inlet and Papanui Inlet, Otago Peninsula

  A number of estuarine tidal sandflats and mudflats supporting saltmarsh vegetation, seagrass beds, shellfish beds and aquatic birdlife provide significant habitat for biodiversity. Estuaries provide nursery habitat for many types of fish, particularly flatfish and galaxiids, and are an important part of the migration pathways for a range of species, such as wading birds (godwits, herons), seabirds, and diadromous fish.

  Otago's estuaries are threatened by infilling and drainage to create pasture, invasion by exotic plants such as spartina (*Spartina ×anglica*), and effects on water quality due to upstream land uses.

- *Tahakopa Estuary*

  The Tahakopa Estuary in the Catlins comprises modified mud flats with a small area of salt marsh turf and an extensive area of oioi (*Apodasmia similis*). This intricate area of wetland is of special significance for wading birds and galaxiid breeding; flatfish are also a feature of the estuary's biodiversity. This relatively pristine estuary has significant ecological values.

- *Tautuku Estuary*

  Also in the Catlins, the Tautuku Estuary is a largely unmodified estuary with a catchment largely comprising indigenous forest and protected wetlands. The estuary contains pristine saltmarsh and estuarine communities, and is an important breeding ground for black flounder (*Rhombosolea retiaria*) and yellow-belly flounder (*Rhombosolea leporina*). The estuary is also an important habitat for South Island fernbird (*Bowdleria punctata punctata*).

- *Intertidal and Shallow Subtidal Habitats*

  The extent of these habitats across the Region varies at a local scale. They consist of subtidal forests of giant bladder kelp (*Macrocystis pyrifera*) and bull kelp (*Durvillaea antarctica*), with other dominant brown kelp species below depths of three metres. Giant bladder kelp is a habitat-forming indigenous kelp that provides important habitat for fisheries, and is long-lived but recovers slowly after damage. It forms the base of complex food webs which provide for both coastal and pelagic species, such as rock lobster (*Jasus edwardsii*). Kelp understoreys also consist of a diverse assemblage of small red seaweeds, and a variety of sponges, bryozoans and solitary ascidians.

  Beaches and subtidal sediments across the Region contain shellfish species - such as cockle/tuaki (*Austrovenus stutchburyi*), tuatua (*Paphies subtriangulata*), and horse mussel (*Atrina zelandica*) - that create extensive shellfish beds, as well as containing marine worms and crustacea.

- *Biogenic Habitats*

  Biogenic habitats are formed by living organisms or their remains, including deeper habitats (bryozoan beds, rhodolith beds, shellfish beds, sponge gardens, cold water corals and tube worms) and shallow estuarine habitats (shellfish beds, seagrass beds and saltmarshes). Biogenic reefs are found throughout the Otago marine environment. Bryozoan beds enhance local biodiversity by providing attachment surfaces for invertebrates such as anemones, and places for other animals to hide from predators. Juvenile tarakihi (*Nemadactlyus macropterus*) are associated with tube worm habitats along the East Coast of the South Island, while blue cod (*Parapercis colias*) are associated with biogenic habitats in Foveaux Strait, as well as with the Otago bryozoan beds.

  Seagrass beds have been identified in the Otago Harbour, Papanui Inlet, Blueskin Bay, Waikouaiti River and at Moeraki. New Zealand has only one species of seagrass, *Zostera muelleri*, which provides a range of ecosystem services, including provision of habitat, refuge, shelter and nursery grounds; they are identified as "hotspots" of biodiversity and productivity, involving macroinvertebrate and fish assemblages.

  A local example of biogenic habitat in Otago Region includes dense assemblages of sponges, tulips and tubeworms which occur offshore from north of Oamaru to the Waianakarua River; these habitats provide for a multitude of invertebrate species, and nurseries for fish including blue cod, rock lobster and tarakihi.

- *Deep Sub-Tidal Habitats (greater than 30 metres depth)*

  There is relatively little known regarding the biology of the deep subtidal shelf area; the main research focus has been on an extensive area of bryozoan beds on the mid and outer shelf directly east of Otago Peninsula. The heads of several canyons (Karitane Canyon, Papanui Canyon, and Saunders Canyon) are located within the 12 nautical mile limit of the Otago marine area. These habitats are important deep slope environments, with diverse fauna including brittle stars, sea stars, gastropods, bivalves, shrimps, hermit crabs, bryozoans, sponges and quill worms. They are known hotspots for whales and seabird activity. Shephard's beaked whale (*Tasmacetus shepherdii*), one of the world's least known cetaceans, was recently sighted for the first time in New Zealand waters in the vicinity of the Saunders and Taiaroa Canyons. Deep offshore reefs and gravels (such as Akatore Offshore, with areas of ice-age relict shoreline gravel) are likely suitable habitat for bryozoans. These areas are also an offshore foraging area for yellow-eyed penguins (*Megadyptes antipoda*) from Otago Peninsula. Also likely in the area are New Zealand fur seal (*Arctocephalus forsteri*), sooty shearwater (*Puffinus griseus*), Buller's albatross (*Thalassarche bulleri*), and white-capped albatross (*Thalassarche cauta*).

6.3 Marine fauna

The Otago marine environment is an important foraging area for marine mammals and seabirds, including those protected under the Wildlife Act 1953 and the Marine Mammals Protection Act 1978. There are a number of Important Bird Areas (IBAs) located within the Otago marine environment; these are sites that are recognised as internationally important for bird conservation, and are known to support key bird species and other biodiversity. Many of these bird species are found only in New Zealand, such as the yellow-eyed penguin, the northern royal albatross (*Diomedea sandordi*), spotted shag (*Stictocarbo punctatus*) and Otago shags (*Leucocarbo chalconotus*); these species and others use the offshore marine environment for foraging, passage and maintenance behaviours.

The endangered great white shark (*Carcharodon carcharias*) and basking shark (*Cetorhinus maximus*) occur seasonally off the Otago coast but there is currently limited data available on their movement and habitat requirements.

The Otago Region was previously an important calving ground for southern right whale (*Eubalaena australis*) in New Zealand; this recovering population is now frequently sighted off the Otago coast, particularly during the winter months.

Female New Zealand sea lion (*Phocarctos hookeri*) are known to use the Otago coast for resting and giving birth to pups. New Zealand sea lion have a conservation status of Threatened-Nationally Critical (Baker *et al*. 2010) and there has been a rapid decline in numbers observed in their main population at the Auckland Islands. A small breeding population established around Otago Peninsula following the arrival of a female sea lion to this area in the early 1990s and individuals in this population regularly forage along coast within the project area as far north as Shag Point. Sea lions have a preference for coming ashore to rest on sandy beaches, and so, while they

are very rare, it is a common occurrence for them to be encountered on the coast. Females often travel a remarkable distance inland in search of private places to rest and have shown a preference for resting sites in stands of radiata pine forest adjacent to the coast. Unfortunately their travel to resting habitats such as these can expose them to risks from hazards such as roads and railway tracks.

Hector's dolphin inhabits coastal waters around Otago peninsula, north of Moeraki, and the southern Catlins near Waikawa Harbour.

New Zealand fur seal are also present in coastal Otago with an established breeding rookery at Heyward Point. Fur seals prefer to haul out on rocky shore lines, so while they are common they are less regularly encountered by beach walkers. The end of the Aramoana Mole is a regular haul out for fur seals, which can be viewed with minimal disturbance to them at this site. Fur seals are afraid of people and will return to the sea if they feel threatened.

Leopard seals (*Hydrurga leptonyx*) are a regular seasonal occurrence in winter. Sightings of leopard seals between Aramoana and Karitane have been reported to or observed by the Department of Conservation in most years since 1999.

Southern elephant seal (*Mirounga leonina*; Threatened-Nationally Critical) are less frequently seen, although dead seals are often washed ashore by the Otago Peninsula eddy. During one year there was a yearling present on Warrington Beach for a week or so.

A summary of seabirds and marine mammals found in the Otago marine environment is included in Table 4. Nine of these species are classified as Threatened and eight as At Risk.

Table 4: Summary of seabirds and marine mammals found in Otago Region.

Common Name	Species	Threat Classification
Southern blue penguin	*Eudyptula minor minor*	At Risk-Declining
Yellow-eyed penguin	*Megadyptes antipodes*	Threatened-Nationally Vulnerable
Black-backed gull	*Larus dominicanus*	Not Threatened
Red-billed gull	*Larus novaehollandiae scopulinus*	Threatened-Nationally Vulnerable
White-fronted tern	*Sterna striata striata*	At Risk-Declining
Otago shag	*Leucocarbo chalconotus*	Threatened-Nationally Vulnerable
Spotted shag	*Stictocarbo punctatus punctatus*	Not Threatened
Little shag	*Phalacrocorax melanoleucos brevirostris*	Not Threatened
Pied shag	*Phalacrocorax varius varius*	Threatened-Nationally Vulnerable
Australasian gannet	*Morus serrator*	Not Threatened
Northern royal albatross	*Diomedea sanfordi*	At Risk-Naturally Uncommon
Sooty shearwater	*Puffinus griseus*	At Risk-Declining
Fairy prion	*Pachyptila turtur*	At Risk-Relict
Broad-billed prion	*Pachyptila vittata*	At Risk-Relict
White-faced storm petrel	*Pelagodroma marina maoriana*	At Risk-Relict
Common diving petrel	*Pelecanoides urinatrix chathamensis*	At Risk-Relict

Common Name	Species	Threat Classification
Bottlenose dolphin	*Tursiops truncates*	Threatened-Nationally Endangered
Common dolphin	*Delphinus delphis*	Not Threatened
Hector's dolphin	*Cephalorhynchus hectori hectori*	Threatened-Nationally Endangered
Dusky dolphin	*Lagenorhynchus obscurus*	Not Threatened
New Zealand fur seal	*Arctocephalus forsteri*	Not Threatened
New Zealand sea lion	*Phocarctos hookeri*	Threatened-Nationally Critical
Leopard seal	*Hydrurga leptonyx*	Vagrant
Southern elephant seal	*Mirounga leonine*	Threatened-Nationally Critical
Humpback whale	*Megaptera novaeangliae*	Migrant
Minke whale	*Balaenoptera bonaerensis*	Not Threatened
Pilot whale	*Globicephala melas*	Not Threatened
Southern right whale	*Eubalaena australis*	Threatened-Nationally Vulnerable
Sperm whale	*Physeter microcephalus*	Not Threatened
Shepherd's beaked whale	*Tasmacetus shepherdii*	Data Deficient

6.4 Research

Current research in the Otago marine environment includes the following:

The University of Otago and the associated Marine Laboratory is currently involved with a number of research projects in Otago Region, including:

- Benthic structure and function of the Otago shelf and upper slope
- Fisheries ecosystems in coastal kelp forests
- Role of omnivores in kelp forest community structure
- Biology and ecology of inlet and estuarine macrobenthos
- Impact of the Subtropical Frontal Zone on bacterio-plankton carbon cycling
- Paua fisheries ecosystems

The Proposed Marine Protected Areas for New Zealand's South Island South-East Coast also highlights that with the implementation of a network of MPA, these provide a foundation for research and education that will provide benefits for our understanding of marine ecology, the impact of pressures on the marine environment, conservation efforts and biodiversity in general.

Conservation biology of Hector's dolphin: Otago University has been involved in a long-term research programme (1984-present), providing much of the data informing current conservation measures for this endemic species of dolphin; current work is focussed on survival rates and reproduction.

6.5 Threats to marine biodiversity

Threats to biodiversity in the Otago marine environment are comparable to those elsewhere in New Zealand, including sedimentation and excessive nutrients from land run-off, wastewater discharge, dumping of dredge spoil and rising sea temperatures. Suspended sediment in the water column also reduces the amount of light energy

reaching plant communities (such as kelp and seagrass), drastically reducing their productivity.

Invasive species, such as *Undaria pinnatifida*, have been shown to out-compete indigenous kelp and macroalgal species, reducing species diversity. Likewise, harvest of kelp for fertilisers, fish food and human consumption has the ability to significantly reduce kelp biomass and alter food web dynamics.

"Anecdotal evidence from local commercial fishers in Otago indicate that the extent of kelp-forests has reduced compared to twenty years ago, and attribute the decline to the negative impacts of sedimentation on juvenile kelp. In areas where M. pyrifera has disappeared completely (e.g. Taieri Mouth) fishers report a downturn of local fisheries for crayfish and finfish." - South-East Marine Protection Forum.

Fishing methods have the potential to impact on marine biodiversity, particularly where mobile bottom impacting methods (i.e. trawling and dredging) directly impact biogenic habitats, including bryozoan beds, which are sufficiently delicate and slow growing that even a single pass by a trawl or dredge can cause damage that may take decades to recover.

7. CURRENT ORGANISATIONAL ACTIVITIES

7.1 Overview

At least 71 stakeholder organisations are working on activities aimed at the protection and enhancement of indigenous biodiversity in Otago Region See Figures 3 and 3a-3c. These include four government departments (Department of Conservation, Department of Land Information, Ministries for Primary Industries, and the Ministry for the Environment), five territorial authorities, the regional council itself, two research organisations, approximately fifty NGOs, and numerous schools (Appendix 1). Dunedin City District has a greater number of NGOs involved in the protection and enhancement of indigenous biodiversity than do the other TLAs.

All of the NGOs have projects involving the enhancement and/or restoration of areas of indigenous biodiversity, with many projects centred on coastal habitats, forests, and streams. Relatively fewer NGO projects are located in dryland habitats or involve lakes. Most NGO projects include planting of indigenous plant species and weed control (including significant areas of recently-funded wilding conifer control), while many also include pest animal control. Relatively fewer NGOs (11) are involved in the legal protection of areas of indigenous vegetation and habitat, but the Department of Conservation and Queen Elizabeth the Second National Trust (QEII) provide considerable protection of indigenous vegetation and habitats in Otago. The Dunedin City Council also administers several Scenic Reserves, protected under the Reserves Act 1977.

Many primary schools are involved in biodiversity projects. These often involve planting, but also projects such as creation of lizard habitat and trapping predators. Schools typically partner with NGOs or external technical experts to resource and implement these projects.

In the sections below, roles and/or activities are summarised for the Department of Conservation, the Otago Regional Council, and the five territorial local authorities within Otago Region.

7.2 Department of Conservation roles and activities

The Department of Conservation administers a number of acts of parliament, the key one being the Conservation Act 1987. The Department runs programmes to protect and restore species, places, and heritage, and provide opportunities for people to engage with these features. It also manages the single largest historic heritage portfolio in New Zealand, with some 12,000 archaeological and historic heritage sites. Other acts administered by the Department include the Marine Mammals Protection Act 1978 and the Wildlife Act 1953. The protection and conservation of seabirds, marine mammals, and other protected marine species is the Department's responsibility, and it undertakes research relating to the effects of fishing on these species, and how these effects could be mitigated. It also develops population management plans for protected species under the Wildlife Act 1953 and the Marine Mammals Protected Act 1978. Some biodiversity programmes of relevance to Otago Region are described below.

7.2.1 Biodiversity programmes relevant to Otago

Battle for the Birds

Battle for the birds is a national-scale predator control programme that protects vulnerable indigenous fauna including kea, South Island kākā, mohua, and long-tailed bat, all of which have populations in Otago. The programme uses aerially-spread 1080 over areas of often rugged terrain to knock down rats, stoats, and possums. Trapping and other ground-based predator control methods are also used where appropriate. The location of treated sites varies, as previous control, weather, beech mast events, and pest animal indices all play a part in determining where future control is undertaken. In 2016, Battle for the Birds sites in Otago included Makarora, Dart/Routeburn/Caples, and Waikaia.

Routeburn and upper Hollyford stoat control

Donations from trampers on the Routeburn Track have enabled the setting up of 188 stoat traps in boxes along the Routeburn Track, and the goal is to expand the area to join up with other pest animal control projects in the wider area.

Goat control

Goat control is undertaken on the margins of Mt Aspiring National Park, and at Bendigo, Ardgour, Cairnmuir, Lauder Basin, Long Gully, and Waikerikeri in Central Otago.

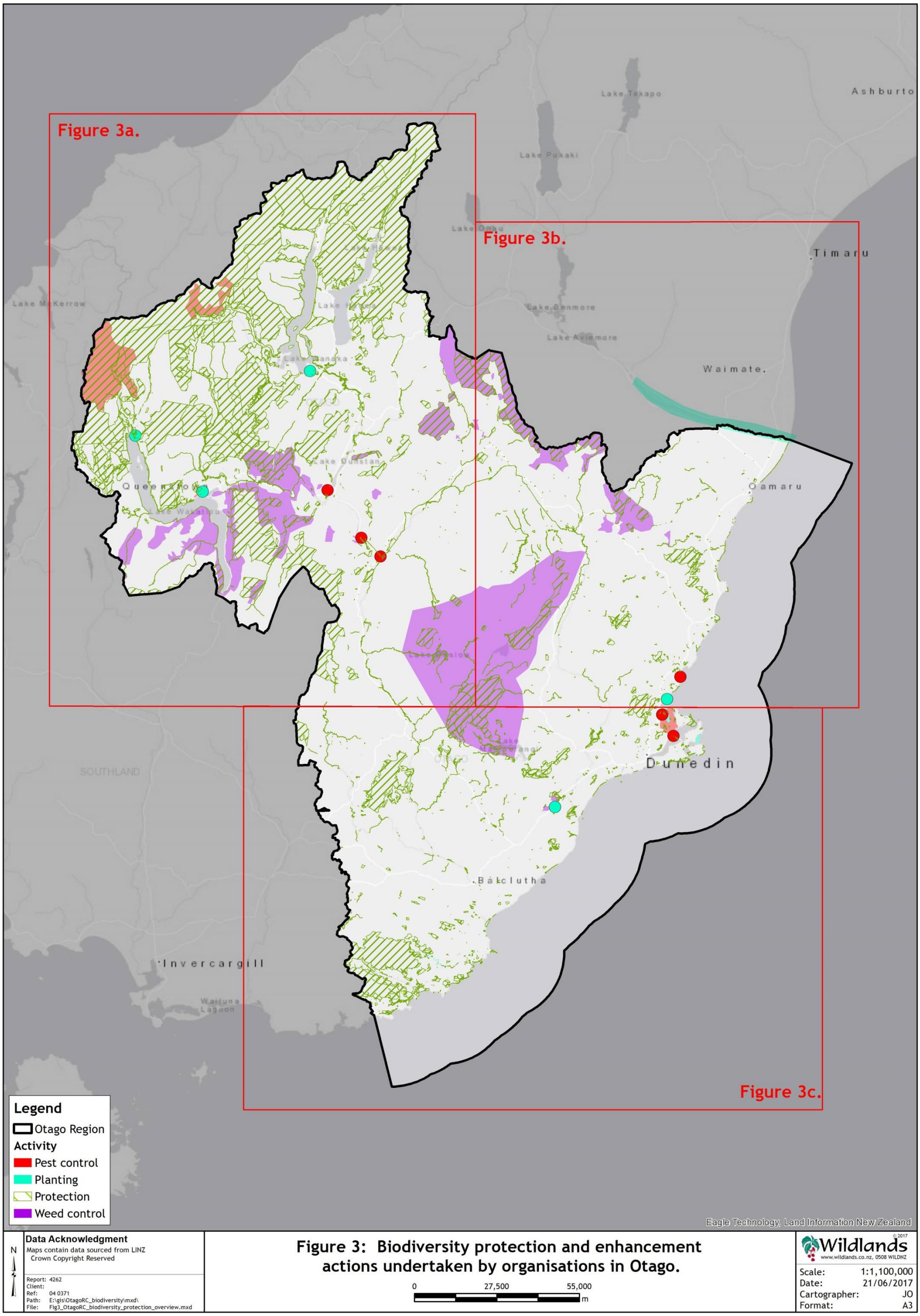


Figure 3: Biodiversity protection and enhancement actions undertaken by organisations in Otago.

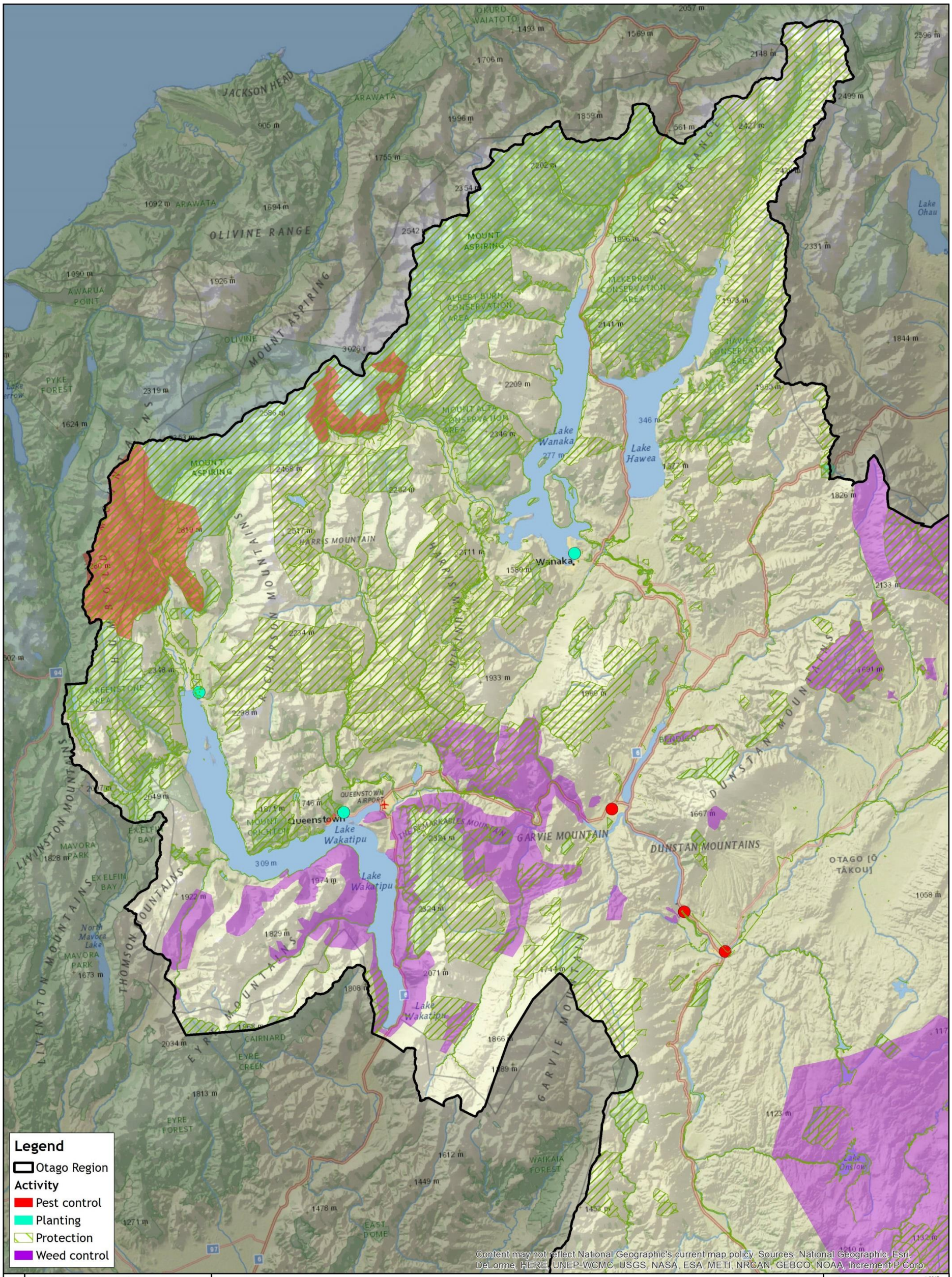


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Figure 3a: Biodiversity protection and enhancement actions undertaken by organisations in Otago.

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Scale: 1:530,000
Date: 21/06/2017
Cartographer: JO
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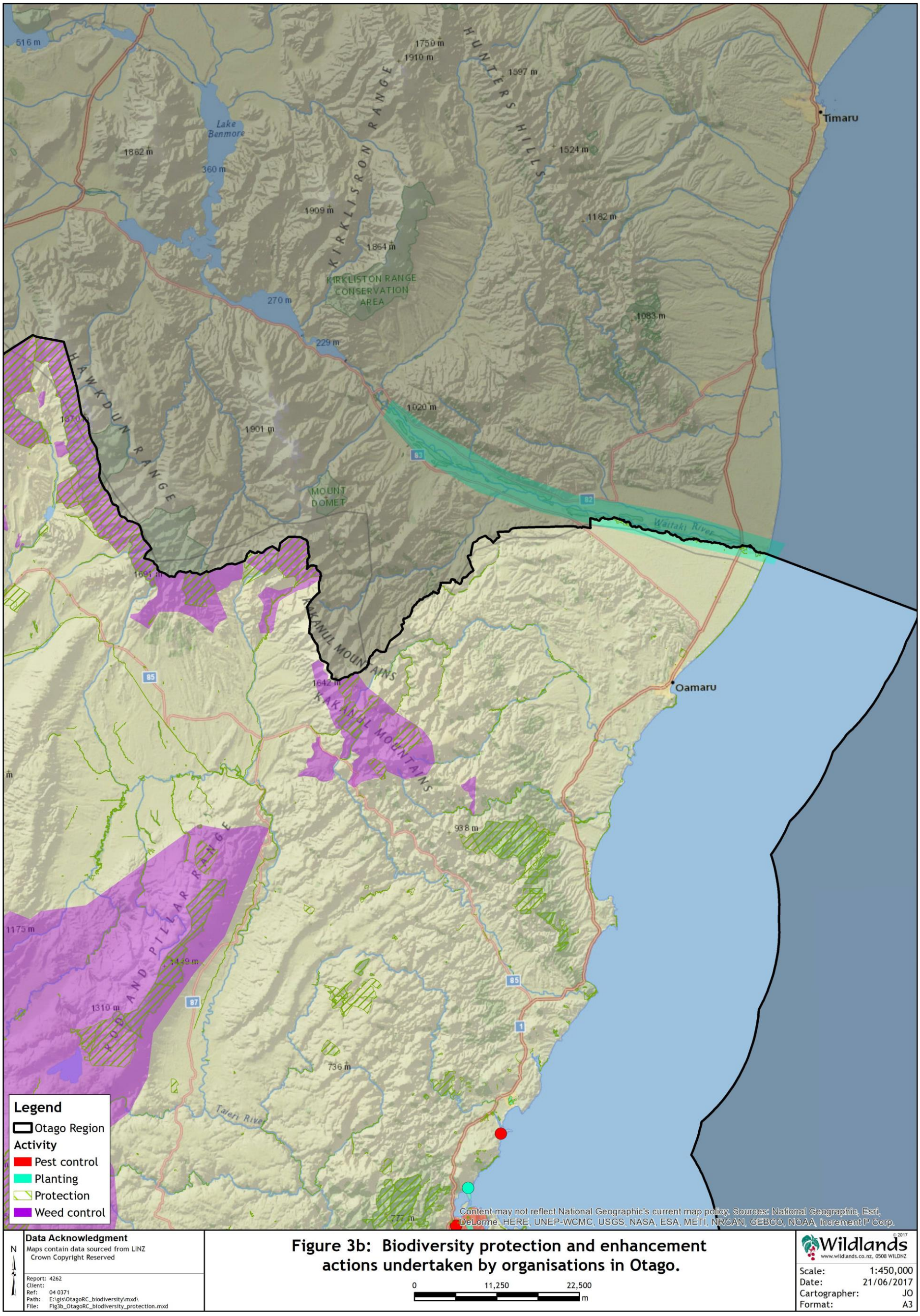

Figure 3b: Biodiversity protection and enhancement actions undertaken by organisations in Otago.

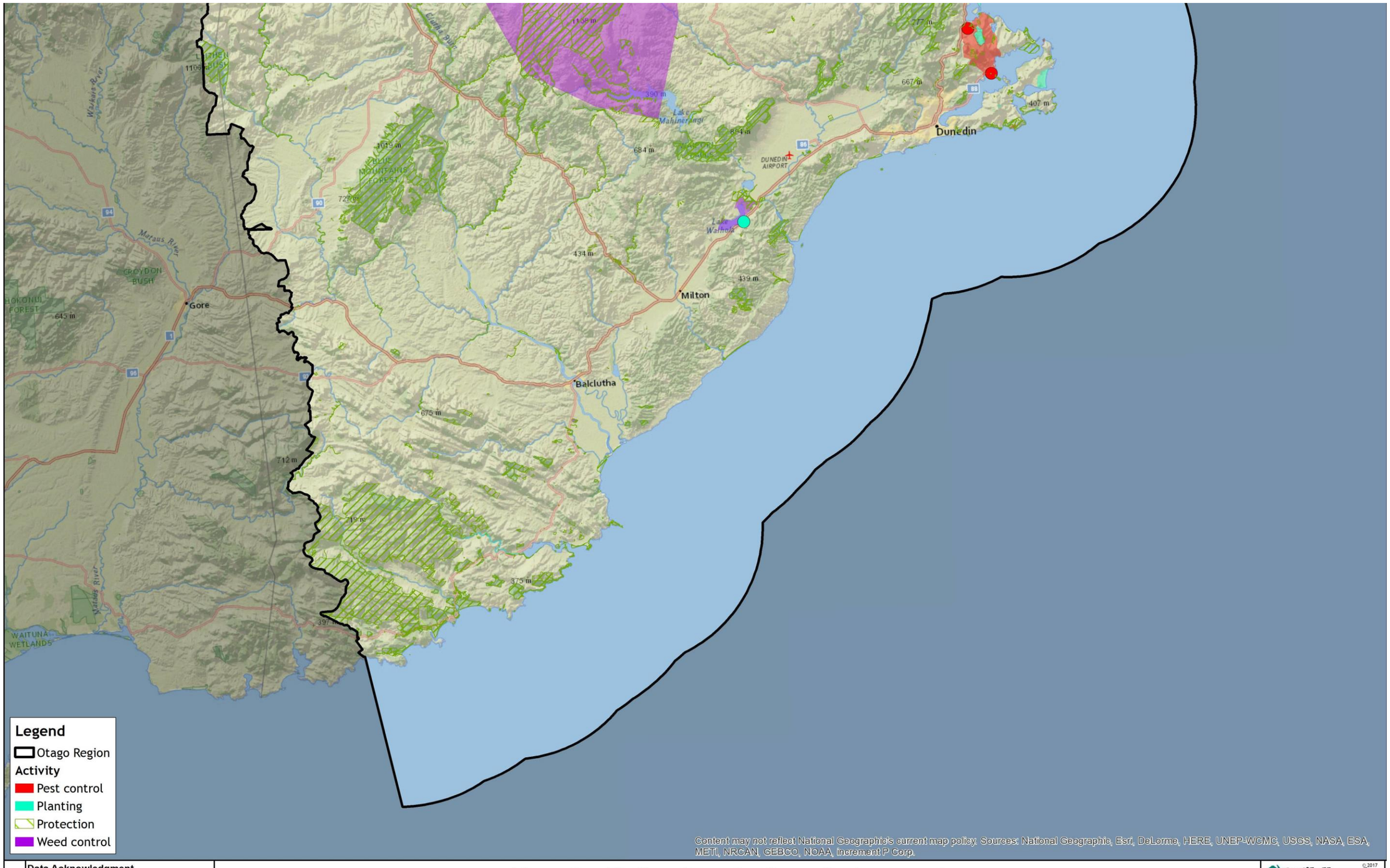

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Figure 3c: Biodiversity protection and enhancement actions undertaken by organisations in Otago.

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Date: 21/06/2017
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Project Gold

Project Gold was initiated by the Department to protect and enhance kowhai trees in Otago. The project aims to encourage Otago people to grow and look after kowhai, and strengthen community enthusiasm for dryland forest restoration. The Department is working with landholders, community groups, and schools, and a key project will be the widespread planting of kowhai along the length of the Otago Central Rail Trail.

Monitoring programmes

The Department undertakes national scale monitoring of biodiversity in some 1440 sites as part of its Tier 1 biodiversity monitoring programme. This includes scattered monitoring sites in eastern Otago - Papanui Conservation Park, Catlins, Waikaia, Umbrella Range, Remarkables, Shotover - but a higher density of sites in the western ranges of Otago. Additional plots have been established for vegetation alone. A number of indicators are reported from the Tier 1 data, including bird and plant species richness and various indices of pest animal abundance.

The Department undertakes a number of local monitoring programmes in Otago, including monitoring of rabbit abundance in reserves at Flat Top Hill, Bendigo, Taiaroa Head, and Otago Peninsula, and seed rain monitoring in the Catlins and Dart and Caples Valleys. Possums are monitored by the Department in the Wanaka area to assess their effects on mountain cedar dieback.

Conservation services programme

The Conservation Services Programme focusses on protected marine species, including all marine mammals, all seabirds, and nine fish.

7.3 Otago Regional Council activities

Otago Regional Council activities that relate to indigenous biodiversity were summarised by Becher (2015), and this section draws on information from this summary. Most of the Otago Regional Council activities relating to indigenous biodiversity are mandatory (required by legislation), but also include various discretionary activities. Most mandatory activities occur in the freshwater environment, and spanned the entire planning cycle from policy development to monitoring and reporting. Biosecurity activities were the main component of Otago Regional Council action in the terrestrial environment.

Policy

As relevant policies of the Otago RPS are described above in Section 3.6, the activities discussed in this section do not include RPS policy. The Regional Council also administers a water plan, which has provisions that address habitat quality, and contains a schedule of regionally significant wetlands. A coastal plan addresses aspects of coastal biodiversity. It includes a schedule of coastal protection areas that include many important beaches, coastal platforms, and intertidal and estuarine habitats that are important habitats for indigenous birds, fish, marine mammals, and marine invertebrates. The plan gives priority to avoiding adverse effects on the values

that these habitats hold. The coastal plan also includes a schedule of important indigenous marine mammal and bird habitats adjacent to the coastal marine area, which are to be taken account of in decision-making on adjacent activities within the coastal marine area.

Water

Policy is implemented through resource consent decision making that enables conditions to address riparian planting, sedimentation, discharges to water, fish passage. Establishment of minimum flows also helps to maintain in-stream values, and in-stream works must avoid bird nesting and fish-spawning seasons. Indigenous fish populations are considered in resource-consent decision-making relating to in-stream effects. Water conservation orders are emplaced on the Kawarau and Nevis Rivers.

Protecting, enhancing, and restoring indigenous biodiversity

Council owned land near Lake Tuakitoto was restored through realignment of rivers and restoration of wetland hydrology. Otago Regional Council has also purchased land in the Pleasant River estuary to protect an extensive and important area of indigenous saltmarsh vegetation and habitat.

Biosecurity

Fourteen pest plant species that affected indigenous biodiversity are listed in the Pest Management Plan (RPMP) for Otago. One of the most important of these for open environments is contorta pine (*Pinus contorta*), while other important ecological weeds are old man's beard (*Clematis vitalba*), which threatens indigenous forest ecosystems, and spartina (*Spartina* spp.) which affects estuarine habitats. Of the pest animals addressed by policy in the RPMS, Bennett's wallaby (*Macropus rufogriseus rufogriseus*) is a significant threat to indigenous vegetation in Otago. Otago Regional Council takes a leadership role in biosecurity at a national level, and in implementation of both national and regional biosecurity programmes.

Research and monitoring

The Waikouaiti and Kakanui estuaries have been mapped, and some monitoring of beach water quality is undertaken. Reporting on estuaries and coastal water is undertaken. State of the environment monitoring is undertaken for fish at thirty sites within Otago. GIS databases are maintained for significant wetlands, estuaries, and galaxiid populations.

Facilitation and funding

Regional Council staff meet with NGOs, key stakeholders, and community groups, and the Council facilitates pest control undertaken by community groups and landholders by providing funding for purchase of traps and by making mustelid traps available for a minimal fee. Council staff have also facilitated community groups working on biodiversity projects by commissioning biodiversity surveys and providing technical advice.

Otago Regional Council has provided significant capital funding for Orokonui Ecosanctuary developments and operational funding wilding conifer control in Otago. The Council also administers the Honda Tree Fund which provides funding for community groups and individuals to purchase indigenous trees for planting projects. The Regional Council also employs a regional coordinator for the Otago Enviroschools programme, and provides part-funding for a researcher employed by the Yellow-eyed Penguin Trust.

7.4 Territorial Local Authorities

Biodiversity-related policies and activities of the five territorial authorities within Otago Region are summarised in Table 5. Dunedin City Council has the greatest range of biodiversity-related activity, including a biodiversity strategy, biodiversity coordinator, active management of biodiversity in Council-owned reserves, and a project to monitor the state of indigenous biodiversity. However, it has not proposed a comprehensive schedule of significant natural areas.

Waitaki District Council also has a biodiversity strategy, coordinator, and biodiversity fund, and is actively assessing potentially significant habitats.

Clutha District Council has only a biodiversity fund, and a limited schedule of significant indigenous vegetation and habitats.

Neither Central Otago District Council nor Queenstown Lakes District Council have biodiversity strategy, coordinator or fund, but these Councils differ in other respects.

Queenstown Lakes District Council has a reasonably comprehensive list of significant natural areas and is a significant partner in wilding tree control in the district, while Central Otago District Council has a limited schedule of significant natural areas and does not appear to undertake any biodiversity activities.

The activities of these Councils are described in more detail below.

Table 5: Summary of District Council biodiversity activities in Otago Region.

TLA	Biodiversity Strategy	Biodiversity Coordinator	Biodiversity Fund	Schedules of Sites[1] Include	Vegetation Clearance Rules
Waitaki	Yes	Yes	Yes	RAP, SSWI, DOC, RSW, other sites	Yes
Dunedin	Yes	Yes	Yes	DOC, RSW, QEII, WERI, DCC	Yes
Clutha	No	No	Yes	DOC, fauna habitats, wetlands	Yes
Central Otago	No	No	No	DOC, RSW, other wetlands	Yes
Queenstown Lakes	No	No	No	Woody vegetation, WERI, RSW, SSWI	Yes

[1] RAP = recommended area for protection under the PNAP programme; SSWI = site of specific wildlife interest; DOC = public conservation land; RSW = regionally significant wetlands, WERI = wetlands of ecological and representative importance; DCC = Dunedin City Council reserves.

Waitaki District Council

Waitaki District Council is one of two local authorities with a biodiversity strategy, which was adopted in 2014. The Council maintains a contestable $30,000 biodiversity fund aimed to help fund physical and legal protection of indigenous biodiversity, and management of threats to indigenous biodiversity on private land. To be eligible, sites should be legally protected, recognised as an SNA, or meet SNA criteria. The fund is available on a 50:50 proviso, funding up to half the total costs of a project. The Waitaki District Plan contains a schedule of significant sites addressed by district plan policies. The schedule comprises a selection of recommended areas for protection (RAP) under the PNAP programme, sites of specific wildlife interest (SSWI), areas of conservation land, and regionally significant wetlands. Some other sites of conservation merit are listed in another schedule, but are not addressed by district plan policy. The Council is currently undertaking a programme of ecological surveys to identify additional areas of significant indigenous vegetation and habitats of significant indigenous fauna on private land within Waitaki District. This should result in a much more comprehensive schedule of significant sites when the Waitaki District Plan is next reviewed. Waitaki District Council employs a part-time biodiversity coordinator whose role includes liaison with landholders.

Dunedin City District Council

Dunedin City Council approved a biodiversity strategy for Dunedin in 2007, and maintains a contestable biodiversity fund of $60,000 that is also provided on a 50:50 cost share basis. The Council owns reserves under the Reserves Act 1977 including large scenic reserves, and other large *de facto* reserves where indigenous vegetation is maintained to protect water quality. The operative Dunedin City District Plan contains a schedule of significant areas of indigenous vegetation and habitats, which includes areas of conservation land, QEII covenants, regionally significant wetlands, wetlands of ecological and representative importance, and DCC-owned sites. While ecological assessments of potentially significant sites on private land have since been undertaken, the proposed second generation plan has not scheduled the majority of these areas. The plan also contains schedules of important indigenous tree species and Threatened, At Risk, and locally uncommon plant species in Dunedin City District, with rules relating to the protection of these values. The proposed second generation district plan has more protective indigenous vegetation clearance standards than the operative plan. The Council undertakes pest and weed control within the substantial areas of indigenous vegetation and habitat it owns. The Council has implemented a trial project to control sycamore (*Acer pseudoplatanus*) in the west harbour area. The Council is also establishing indicators to assess and monitor the state and trend of indigenous biodiversity within the District. A biodiversity officer is employed by the Council with a key role in management of the extensive areas of indigenous vegetation and habitat owned by the Council, but currently with no landholder liaison role

Clutha District Council

Clutha District does not have a biodiversity strategy, but maintains a biodiversity fund with similar criteria to those operated in Dunedin City and Waitaki Districts. It has a schedule that contains conservation land and local purpose reserves, not all of which

are likely to contain indigenous vegetation and habitats, and district plan tables of significant wetlands and significant habitats of indigenous fauna with associated rules. Clutha District Council has been consulting recently on landscape issues, which have occupied a lot of its

Central Otago District Council

Central Otago District is not covered by a biodiversity strategy and does not operate a biodiversity fund. It has no current biodiversity projects. The Central Otago District Plan contains schedules of conservation land, regionally significant wetlands, and other wetlands. The Council is largely relying on the tenure review process to identify and protect additional areas of indigenous vegetation within Central Otago District. This process only operates on pastoral leasehold land, and is voluntary, thus will not fully identify areas of significant indigenous vegetation and habitats on freehold land within Central Otago District.

Queenstown Lakes District Council

Queenstown Lakes District does not have a biodiversity strategy, but does have a wilding conifer strategy, and is represented on the Wakatipu Wilding Conifer Group, which funds wilding conifer control on the Queenstown hills. The Council has also pledged $130,000 annually to wilding tree control. Its Indigenous Vegetation Policy includes establishment of a contestable biodiversity fund, but this does not seem to have been implemented. The proposed Queenstown Lakes District Plan contains a list of threatened plants, and an operative list of numerous recently-assessed significant natural areas that capture mostly woody indigenous vegetation, wetlands, and sites of specific wildlife interest. Both threatened plant species and significant natural areas are protected by indigenous vegetation clearance rules

7.5 Effectiveness of activities

Effectiveness of current activities varies, but is general poorly coordinated (Table 6). This is slowly changing, with wilding conifers now receiving prioritised and coordinated control in Otago, and NGO efforts achieving considerable success in some areas. There are also burgeoning efforts in the Dunedin area to coordinate pest control over larger landscapes, and to undertake citizen science projects to better understand local ecological patterns, e.g. Wildland Consultants (2016). There are many examples of riparian planting in Otago, but these are typically very small scale and cover only a tiny fraction of riparian stream length. The Catlins area supports significant areas of indigenous forest that provides habitat for Threatened indigenous fauna, and populations of these and other indigenous fauna would benefit from integrated control of pest animals. Control of possums, stoats, and rodents occurs in the Dart River catchment, West Matukituki Valley, and at Makarora. These projects are coordinated and implemented by the Department of Conservation in partnership with NGOs, and are sustaining populations of threatened indigenous fauna locally, but require ongoing pest control. Department of Conservation-led exclusion of pest animals and control of them in the surrounding landscape has been a key factor enabling the persistence of threatened lizards in the Macraes area. Some of Otago's most rare and distinctive terrestrial ecosystems, such as limestone and saline ecosystems, occur mostly on private land and receive relatively little conservation

management. Marine habitats receive local monitoring but almost no management for biodiversity values, however the SEMPF process should result in better protection of marine habitats in some areas. Marine fauna are generally well-managed and a focus of several organisations where their life cycles bring them onto land.

Table 6: Summary of management activities in key Otago ecosystems.

Key Biodiversity Feature	Broad Overview of Management Activities
Otago Peneplain	Department of Conservation has significant tussock grassland reserves in Macraes Ecological District, and Waitaki District Council is undertaking ecological significance assessments which should ultimately result in better protection for significant indigenous vegetation and habitats. There is little protection of tussock grassland habitat in Central Otago District. Many threatened plant species occur on private land and are unmanaged. Threatened and At Risk lizards and invertebrates also occur on private land where they are not managed. Wilding conifer control reduces one threat, but many others remain.
Indigenous forest	The extent of indigenous forest appears stable in most zones. However relatively little of it is being actively managed, and many indigenous forest fragments on rural land are grazed and will be declining in condition. In northern coastal Otago, indigenous treelands are suffering ongoing attrition and will disappear without appropriate management. Furthermore, pest animal control in indigenous forests is fragmented and un-coordinated. Possums are controlled in TB vector control areas, local pest exclusion and halo control occurs at the Orokonui Ecosanctuary, Dunedin City Council controls pest animals in some reserves, NGO's control suites of predators at Makarora and in the West Matukituki, and Department of Conservation/NGO controls rats and stoats in the Dart River catchment. While these projects may sustain populations of indigenous fauna locally, most of Otago lacks integrated control of mammalian pest animals.
Montane tall tussock grassland	Some areas protected as conservation land, but most of the montane tussock grassland habitat is unprotected and un-managed. Tall tussock stature and the condition of tall tussock grassland vegetation will be declining in the majority of unprotected areas of tall tussock grassland habitat. Wilding conifer control will benefit these habitats by reducing one significant pressure, but the other pressures remain.
Limestone ecosystems	Very few limestone ecosystems in Otago region are protected and most have significantly modified vegetation and require ecological restoration.
Inland outwash plains	There are some protected areas on the inland outwash plains, but most are unprotected. Intensification of land use driven by irrigation, vineyard development, and residential development continues to reduce the extent of the inland outwash plain habitat.
Inland saline ecosystems	Inland saline ecosystems are rare and scattered, and most occur on private land where they remain vulnerable to weed invasion and cultivation. They receive some monitoring by the Department of Conservation. Sutton Salt lake is now contained within a protected area.
River and lake ecosystems	Otago Region has some high quality rivers, and most are in reasonably good condition. However Otago's streams are mostly accessible to trout with consequent adverse effects on indigenous fish. Most of these streams occur on private land. The Department of Conservation has an interest in managing indigenous fish, but generally depends on landholder goodwill to achieve effective conservation. Lakes receive little management apart from some control of aquatic weeds. Monitoring of lake water is rotational, rather than annual, meaning some events may be missed.
Marine Ecosystems	Marine ecosystems and indigenous biodiversity are not managed for their indigenous biodiversity values. Marine fauna that use terrestrial habitats during their life cycles receive better conservation management. Marine mammals are monitored by the Department of Conservation who also advocates on their behalf. Penguins are managed by NGOs and nature-based tourism operators. Smaller sea birds such as fairy prion and sooty shearwater are managed primarily by NGOs and have tenuous hold on the mainland. Estuaries receive little management and are not monitored, apart from regular seasonal counts of wading birds undertaken by NGOs.

8. STAKEHOLDER VIEWS ON POTENTIAL REGIONAL COUNCIL ACTIONS

Feedback from representatives of stakeholder organisations was valuable for the generation of ideas on actions that Otago Regional Council could take to better address the management requirements of indigenous biodiversity in Otago. These ideas fell into the following categories (Table 7):

- Advocacy.
- Biosecurity.
- Capacity.
- Direct action.
- Funding.
- Monitoring and reporting.
- Partnerships
- Policy.
- Strategy.

Ideas within these categories are set out below.

8.1 Advocacy

Stakeholders suggested a number of advocacy actions that the Regional Council could undertake, including.

- Ensuring better compliance with rules relating to water.
- Proposing marine reserves.
- Writing submissions on national strategies and plans relating to indigenous biodiversity, especially where the relevant biodiversity is present in Otago.
- Advocating for better management of indigenous biodiversity generally.
- Advocating to help prevent loss of tussock grassland habitats.
- Help to promote issues with weeds of inland environments, for example by sponsoring an inland Otago version of the 'plant me instead' booklet.
- Celebrating the biodiversity values of Otago Harbour, and using the well-known marine fossil record of North Otago in advocacy relating to marine issues in this part of the region.

8.2 Biosecurity

Ecological weeds were a concern for many organisations. Undertaking surveillance to enable early detection of weeds, of terrestrial, freshwater, and marine habitats, was considered crucial especially for lakes, where weed control is often intractable. Strong biosecurity programmes with rapid response capacity to deal with new weed incursions are generally cost-effective. Gorse (*Ulex europaeus*), sycamore (*Acer pseudoplatanus*), and lagarosiphon (*Lagarosiphon major*) were commonly-mentioned weeds. Maintaining weed-free catchments and trout-free streams as such was also considered important, and a greater focus on ecological weeds compared to what was perceived as a current focus on agricultural weeds. Goats in the Dunedin area are having significant adverse effects on the indigenous forest that cloaks the Dunedin

hills and their local eradication would require leadership from an agency such as ORC. Goats are also a significant issue in the Wakatipu-Skippers area.

8.3 Capacity

A common capacity action suggested by stakeholders was for the Regional Council to employ a biodiversity coordinator. This has significant merit if more engagement with landholders on biodiversity issues is proposed, as Council-employed biodiversity coordinators are often very effective at landholder liaison. There are almost always benefits for indigenous biodiversity when council staff engage with private landholders on a one-to-one basis on landholder properties. Biodiversity coordinator roles could include working to achieve protection and better management of indigenous biodiversity on private land, and helping to coordinate NGO projects, which often involve private land. A key requirement of biodiversity coordinators is to facilitate communication and flow of information between local people, landholders, and technical experts, as the input of all three groups is often necessary to obtain successful biodiversity outcomes.

Organisations dealing with marine issues felt that it was also important for the Regional Council to have staff with marine expertise.

Environmental compliance was also raised as an issue that could benefit from increased resourcing. As described above, maintaining a rapid response capacity to deal with new pest incursions was also considered important.

Many organisations felt that it was difficult to establish relationships with the Regional Council due to the lack of biodiversity and land resources staff. In addition, information on what the Council is doing for indigenous biodiversity was deficient. It would be valuable to build Council capacity to engage with the public on biodiversity issues, and for the Council to help connect and facilitate other organisations working to protect and enhance indigenous biodiversity.

8.4 Direct action

Stakeholders also suggested many areas where the Regional Council could take direct action to maintain, enhance, or restore indigenous biodiversity values, including:

- Regional parks.
- Regional reserves.
- Processing of coastal permits.

Each of these topics is discussed further below.

8.4.1 Regional parks

A key theme was that the Regional Council could follow the model that other regional councils have used, and create regional parks or reserves for both public use and recreation, and maintenance and enhancement of indigenous biodiversity. Regional parks tend to be well-used by the public, including for family recreation, and have proven to be excellent sites for advocacy of the need to maintain, enhance, and restore

indigenous biodiversity. Farming land uses often continue within regional parks. Most regional parks in New Zealand are in coastal locations, but in Otago there would be considerable potential for a regional park in Central Otago based, for example, on the upper Clutha River. A regional park in this location would be close to population centres, have high amenity and recreational values, have important existing biodiversity values, and have opportunities for ecological restoration projects. Similarly, a coastal regional park would also have a range of important values, and also be likely to provide important habitat for indigenous marine mammals and seabirds. Regional parks could also complement adjacent conservation land. To obtain land for a regional park, the Regional Council would need to create and advertise a process by which rural landholders may be willing to sell or donate the appropriate land.

8.4.2 Regional reserves

Regional reserves differ from regional parks in that they are primarily for the conservation of indigenous biodiversity. Coastal areas, especially estuarine margins, were a commonly-suggested site for regional reserves, and would provide capacity for estuaries to move inland in response to predicted sea level rise. Coastal reserves could also be established on the outer coast of the Otago Peninsula and on the Catlins coast. Regional reserves to protect montane tussock grassland habitats would also have merit, as would protecting and enhancing riparian vegetation to establish wildlife corridors along major Otago rivers.

8.4.3 Processing of coastal permits

Another direct action that stakeholders thought could be improved, was the processing of coastal permit applications. Stakeholders had a sense that indigenous wildlife values, for example marine mammals and seabirds, were not being fully addressed when permits for coastal activities are granted.

8.5 Funding

Various NGO stakeholders indicated that increased funding, particularly for pest control, would be useful. Ideas included increasing the level of contestable funding under the ORC Biodiversity Fund, establishing clear criteria with which to assess funding applications, establishing a targeted rate for pest control and/or biodiversity projects, using the proceeds to establish a contestable fund that NGOs could access, and increasing funding for pest control and fencing projects.

Funding is also critical for primary schools wishing to incorporate environmental projects into learning outcomes, especially for ecological restoration projects which require ongoing resourcing. Most schools need to partner with NGOs, the Department of Conservation, or other experts and funders to gain the resources required for biodiversity projects.

Increased funding is always likely to be popular with NGO stakeholders, which are often at least partially dependent on grants and sponsorship, and also for landholder projects such as fencing, planting, and pest control. This is particularly so since the demise of the Biodiversity Advice and Condition Funds formerly operated by the

Department of Conservation, which were available for simple one-off landholder projects, many of which were undertaken in Otago Region. These funds were replaced with the Community Conservation Partnerships Fund, which aimed to fund 'transformative' projects, and which has now been rebranded as the Department of Conservation Community Fund, which has variable priorities in a given year, and is significantly over-subscribed. As a result, Departmental funding is now spread more thinly across New Zealand. Four Otago-based indigenous biodiversity projects were funded by the Department's Community Fund in 2016.

With less funding available from the Department of Conservation, biodiversity funds operated by TLAs and Otago Regional Council have become more important. With the Government launching the Predator Free 2050 goal to eradicate rats, stoats, and possums by 2050, local groups are striving to help achieve it, and recently 19 local groups, including Otago Regional Council, signed a Predator Free Dunedin memorandum. Funding will be critical if this vision is to be achieved, either locally or nationally. The Predator Free 2050 goal is associated with annual funding of $6M that aims to leverage additional external funding to assist predator control projects.

8.6 Monitoring and reporting

Monitoring was suggested as being a key requirement to gain better information on the state and trend of not only indigenous biodiversity in Otago, but of TLA performance in biodiversity-related issues. Understanding the condition and trends of biodiversity values has obvious strategic value as it would help to prioritise where actions should be directed. Monitoring design requires significant thinking if it is to be efficient and effective. A range of biodiversity indicators for state of the environment monitoring were recently provided to Dunedin City Council (Wildland Consultants 2016). One organisation made a suggestion to adopt the Department of Conservation Tier 1 monitoring methodology, currently only carried out on public conservation land, and extend it to areas of indigenous habitat on private land. Establishing a regional framework for monitoring of indigenous biodiversity, which TLAs, organisations, landholders, and individuals could provide information for, would have considerable value. Surveillance for new and existing pest plants was also highlighted, and linking of biodiversity monitoring to water and soil monitoring.

State of the environment monitoring was raised numerous times by stakeholders, for terrestrial, freshwater, and marine ecosystems, and presents an obvious gap that is not being filled by any other agency. Many stakeholders felt that the Council already held considerable data that could be used in state of the environment monitoring. Organisations consider it important to establish robust baseline environmental monitoring and report on the outcomes. Monitoring should be designed to reveal information that is helpful to management of biodiversity, land, and water. The frequency and intensity of monitoring is important in this context.

Estuaries, wetlands, lakes, rivers, streams, and marine ecosystems were identified specifically as a focus for monitoring.

8.7 Partnerships

Building partnerships and broadening key relationships was another aspect that was repeatedly highlighted by stakeholders. Many stakeholders wanted the Council to be a leader and facilitator for programmes such as landscape-scale pest control, state of the environment monitoring, coordinating and facilitating community and NGO projects, and providing a framework and support for citizen science projects. In expressing these wishes, organisations made it clear that they did not expect the Council to do everything, and were very willing to play roles in maintaining indigenous biodiversity. What they hoped for was increased Regional Council support so as to achieve significantly greater outcomes.

Analysis of organisational activities showed that many organisations are dealing with coastal issues. Particularly striking was that management and monitoring of seabirds in Otago is almost entirely being carried out by the NGO, community, and commercial ecotourism sectors. There is however some funding support for this work from local and national agencies, including Otago Regional Council. As nature-based tourism provides an important economic contribution to Otago, more support for this NGO and community work could be justified on economic grounds.

Interviews with organisation representatives drew overwhelmingly positive and constructive responses, however many organisations found it difficult to maintain relationships with the Regional Council due to staff turnover and disestablishment of Council roles, for example land resources officers. In addition, many organisations were not very aware of what Otago Regional Council was doing with respect to indigenous biodiversity management, and found it difficult to obtain environmental information (such as monitoring data, or information on what other organisations were doing) from the Council. This suggests that Council investment to build and strengthen relationships with and support for the environmental community would generate significant positive results, increasing the capacity of the Otago community to maintain and enhance indigenous ecosystems and biodiversity within the Region.

8.8 Policy

A number issues identified by stakeholders were potentially suitable for policy development in regional plans or in non-statutory policy.

These issues included:

- Considering inland weeds for RPMP or non-statutory weed control policy.
- Take lead in planning for projected sea level rise.
- Create RPS policy requiring TLAs to employ biodiversity coordinators.
- Providing better protection for estuaries and coastal wetlands.
- Improving the quality of the upper Taieri River, and better controlling stock, especially cattle, around waterways.
- Assessing whether there is an ORC role for regulating the marine environment.
- Preparation of a land plan to better control land uses that affect freshwater, including lakes.
- Ensuring that the RPS contains sufficient scope to address terrestrial indigenous biodiversity issues.

- Control the clearance of indigenous vegetation from riparian sites and from gullies.
- Control tussock grassland clearance to maintain its role of increasing water yield, in addition to better protection of the intrinsic values of tussock grassland vegetation.

8.9 Research

Additional research was highlighted in particular as a need for marine and lacustrine habitats. The marine processes that result in toxic effects on yellow-eyed penguin are poorly understood, for example. Also highlighted was the fact that New Zealand's largest river discharges into the Otago marine environment, yet the effects of this significant plume of freshwater on marine ecosystems, process, and biota are poorly known. It was felt that collation and interpretation of existing information would be a good start, and help to identify additional research and monitoring needs.

In inland Otago, more research was sought to better understand the effects of urbanisation and intensification of agriculture in the central lake catchments.

It was also pointed out that supporting citizen-science projects, and other scientific research projects, can be a cost-effective way of gaining relevant information to assist management.

8.10 Strategy directions

Strategic ideas from organisations fell into several areas:

- Prioritising particular habitats for protection and enhancement, for example tussock grassland, estuaries, dryland ecosystems, headwater catchments, inland basins, originally rare ecosystems, and where the most threatened biodiversity occurs.
- Increasing leadership in environmental strategy, building on work undertaken by TLAs.
- Helping to coordinate and facilitate various groups undertaking weed and pest control.
- Reviewing how other councils address biodiversity issues

Table 7: Biodiversity actions that Otago Regional Council could potentially undertake, as suggested by stakeholders.

Type	Action
Advocacy	Ensure better compliance around water.
	Propose marine reserves.
	Submit on national strategies and plans relating to indigenous biodiversity.
	More advocacy of indigenous biodiversity to landholders.
	Build biodiversity projects around tourism sites.
	Help to prevent loss of tussock grassland habitat.
	Use the well-known marine fossil record of North Otago to help advocate the marine ecological values of North Otago.
	Celebrate and advocate the biodiversity values of Otago Harbour .
	Educate the public on issues relating to New Zealand sea lion activity.

Type	Action
	Advocacy on weeds in inland areas, driven by increasing urbanisation and introduction of garden plants. Produce a 'plant me instead' booklet for inland areas, and undertake other advocacy about weeds in inland areas.
Biosecurity	Undertake surveillance for new pests to enable early detection.
	Maintain these catchments as weed-free areas.
	Maintain trout-free streams as such.
	Focus on ecological weeds in addition to agricultural weeds.
	Prevent further spread of lagarosiphon in Lake Wakatipu.
	Add additional ecological pests such as goats and sycamore to the RPMS, or develop non-statutory policy addressing these pests.
	Ensure control of broadleaved wilding trees as well as wilding conifers.
Capacity	Ensure ORC has staff with marine expertise.
	Increase capacity to better resource the compliance regime concerning environmental matters.
	Increase capacity to respond to public interest in biodiversity.
	Employ a regional biodiversity coordinator.
	Maintain capacity for rapid response to new biosecurity issues.
Direct action	Establish a network of Regional Parks, establish pathway for farmers to transition land with high public value into public ownership.
	Make ORC land available for ecological restoration by community groups.
	Create coastal parks on the Otago Peninsula and Catlins coasts.
	Create regional biodiversity reserves, including in coastal areas subject to sea level rise, for example on estuary margins.
	Create wildlife corridors along major Otago rivers.
	Fully address effects on coastal wildlife when processing coastal permits.
	Create small islands in Otago harbour to establish high tide bird roosts and increase the extent of intertidal habitat.
Funding	Increase the contestable ORC Biodiversity Fund to $500k per year.
	Fund elements of DCC's Te Ao Turoa implementation plan, or elements of the pending Predator-free Dunedin pest management plan.
	Develop criteria for the contestable ORC Biodiversity Fund and ensure that only excellent projects are funded.
	Increase funding for NGO biodiversity projects.
	Support fencing and pest control projects.
	Establish a targeted rate for pest control and/or biodiversity projects, providing some operational funding for NGO's working on these projects.
Monitoring and reporting	Monitor TLA performance, and remove delegations if TLAs are not performing.
	Undertake surveillance for existing and new pest plants.
	Consider how public databases can be used for monitoring by the community.
	Support monitoring by the community.
	Monitor environmental quality.
	Develop a comprehensive freshwater monitoring plan and encourage individuals to assist with monitoring
	Use Department of Conservation Tier 1 monitoring on private land, to align with national scale monitoring on public land.
	Monitor the biodiversity values of estuaries.
	Regularly monitor lakes, rather than the rotational monitoring that is currently undertaken.
	Establish baseline monitoring and report on biodiversity baselines, or create a framework to which TLAs or the community could report. This should lead to regular 'state of the regional environment' reporting.
	Monitor physical and biological attributes of the marine environment for state of the environment reporting and to better understand the ecological services that marine processes provide.
	Monitor biodiversity indicators linked to water quality and quantity.

Type	Action
Partnerships	Form a regional biodiversity group jointly funded by TLAs and ORC.
	Establish and support community catchment groups.
	Partner with local communities to improve the condition of urban streams.
	Partner with other organisations, e.g. the Landcare Trust, on biodiversity advocacy and enhancement projects.
	Coordinate and facilitate NGO projects.
	Continue to attend predator-free Dunedin meetings.
	Partner with national themes, e.g. freshwater, predator-free NZ.
	Support citizen science projects involving monitoring and biodiversity.
Policy	Consider inland weeds for RPMS or non-statutory weed control policy. Lake foreshores are subject to invasion by many different weeds.
	ORC should lead in planning for the effects of sea level rise.
	Require TLAs to employ biodiversity coordinators.
	Protect coastal wetlands and estuaries from adverse effects, and plan for their expansion in the event of sea level rise.
	Improve the quality of the upper Taieri River.
	Assess ORC role for regulating the marine environment.
	Address the effects of agricultural intensification on lakes.
	Take indigenous biodiversity into account when establishing limits on water takes and discharges.
	Prepare a Land Plan to better control land uses that affect freshwater, or clearly devolve responsibility for this to TLAs.
	Ensure Otago RPS has scope to address terrestrial and marine biodiversity issues, for example having scope to develop regional plans addressing biodiversity issues.
	Better control of stock, particularly cattle, around waterways.
	Control the clearance of indigenous vegetation from gullies and along the margins of water bodies.
	Control tussock grassland clearance to ensure maintenance of stream water yields.
Research	Research on effects of urbanisation and other land uses central lake processes.
	Promote or fund research to better understand marine ecological processes.
	Support research projects as cost-effective way of obtaining information for management.
	Promote or fund research to better understand marine processes that result in toxic effects on indigenous marine fauna.
	Promote or fund research to better understand the effects of the Clutha River freshwater plume on marine processes.
	Collate existing information on the marine environment to develop a more holistic understanding of marine processes that affect indigenous biodiversity.
Strategy	Increase leadership in environmental strategy, which is currently being led by TLAs, who are none the less dealing with regional issues.
	Develop a regional biodiversity accord or strategy.
	Assess where tussock grassland connectivity should be prioritised and maintained.
	Implement actions within a 5-10 year time frame, but have a long term (200 year) vision that short term actions are consistent with.
	Facilitate development of a pest-free Dunedin plan.
	Put a regional focus on dryland indigenous biodiversity in addition to the current focus on wetlands and streams.
	Focus protection on unprotected headwater catchments.
	Develop catchment management plans, especially for the inland lakes.
	Assess how the remaining indigenous biodiversity in inland basins can be pest protected.

Type	Action
	Identify originally rare ecosystems within the Region that retain indigenous cover.
	Identify place-based opportunities for weed control at a landscape or catchment scale.
	Review how other regional councils are operating in the biodiversity sphere.
	Identify where the most threatened biodiversity is.
	Identify catchments that are free of significant weeds.
	Work with Fish & Game to identify priority streams for indigenous biodiversity.
	Prioritise work in the most threatened areas.
	Use catchments, at any scale, as the unit for management.
	Align biodiversity initiatives with water and soil initiatives.

9. ANALYSIS OF OPTIONS FOR REGIONAL COUNCIL ACTIONS

9.1 Other regional councils

As a preface to this section, a review is provided of what other regional councils are doing. Regional councils across the country are tasked with managing indigenous biological diversity. Broadly, regional councils have adopted a mixture of regulatory (for example objectives; policy and rules in plans) and non-regulatory (for example monitoring; incentives/funding; research and database; advocacy and education; management plans) to manage biodiversity.

In terms of regulatory documents, such as Regional Policy Statements and Regional Plans, there is great variability in regional council approaches to biodiversity planning and management across objectives; policies and regulatory and non-regulatory methods. Each region has developed their approach over time to respond to specific environmental, social, economic, cultural, and political issues in their regions.

Equally, there is great variability across the district plans that sit under regional policy, particularly in terms of terminology and regulatory approach. Variation in terminology across plans is partly a result of the different functions and focus of regional and district plans in relation to land use management and different jurisdictional environments across the coastal marine area, land and water. District plans. for example. may not use the encompassing term ‘biodiversity’ as they do not aim to address freshwater and marine biodiversity. Rather, it appears that District Plans much more commonly use terms such as ‘indigenous vegetation protection’ which seeks to achieve terrestrial biodiversity outcomes.

With that national inconsistency of approach in mind, the proposed National Policy Statement on Indigenous Biodiversity (NPS) seeks to more clearly set out the objectives and policies about managing natural and physical resources to maintain indigenous biodiversity under the RMA 1991. It is intended to provide clearer direction to local authorities on their responsibilities for managing indigenous biodiversity outside the public conservation estate. The NPS remains in a development and consultation phase at this stage.

To provide a brief overview of how other regional councils are approaching biodiversity management, Table 8 below provides a summary of some relevant initiatives and strategies.

Table 8: A brief overview of regional council[1] approaches to biodiversity actions and initiatives.

Regional Council	Broad Overview of Biodiversity Actions and Initiatives
Southland	**Fiordland Marine Regional Pathway Management Plan** - This plan aims to greatly reduce the risk of marine pests being carried in on local and visiting vessels. It has been developed and will be implemented by a partnership group including Environment Southland, Fiordland Marine Guardians, Ministry for Primary Industries, Department of Conservation, and Ngai Tahu. **High Value Areas** - The High Value Area (HVA) programme utilises ecological surveys undertaken by local ecologists, and provides valuable information to landowners that can assist with overall land management.
Canterbury	**Canterbury Biodiversity Strategy** - The purpose of the Strategy is to provide guidance and a common focus for policy and decision making, resource allocation, voluntary effort, and on-the-ground projects and initiatives relating to biodiversity management in the Region. **Canterbury Regional Pest Management Strategy** - The purpose of the Strategy is to provide a framework for efficient and effective management or eradication of specified plants and animals in the Canterbury Region.
West Coast	**Pest Plant Management Strategy for the West Coast** - The Strategy identifies pests and provides a strategy to manage pests under the Biosecurity Act.
Greater Wellington	**Biodiversity Strategy** - This Strategy sets a framework that guides how GWRC protects and manages biodiversity in the Wellington Region. The Strategy also communicates to the public our mandate, role and functions for protecting and managing biodiversity. The Strategy sets out a vision for the Region which is underpinned by four operating principles and three strategic goals.
Horizons	**Proposed Combined Pest Management Plan and Strategy 2015 - 2035** - The purpose of the RPMP is to outline the regulatory framework for efficient and effective management or eradication of specified animal and plant organisms in the Manawatu-Wanganui Region taking a regionally coordinated approach. **Preventing Freshwater Weed Invasions** - The CHECK, CLEAN, DRY programme to raise awareness of freshwater pests and works, to ensure that pests are not spread throughout the Region.
Taranaki	**Biodiversity Strategy** - The primary purpose of this Strategy is to pull together all the Council's biodiversity-related programmes under one operational document, develop a co-ordinated and focused programme of action for indigenous biodiversity work, and set out a road map for the future. The maintenance of indigenous biodiversity is work that spans across all sections of the Council and thus requires a 'whole of council approach'. The Strategy spells out actions the Council proposes to undertake in order to implement the biodiversity objective, policies and methods of the Proposed Regional Policy Statement for Taranaki ('PRPS') (Appendix 1) and where appropriate, provide detailed information (criteria, priorities) to assist with annual work planning of the Council's programmes. **Taranaki Biodiversity Forum Accord 2012 -**The purpose of this Accord is to set out a statement of intent as to an agreed vision, desired outcomes, priorities and actions for Accord partners and, in so doing: (a) Raise the profile of biodiversity generally and increase awareness and understanding of the issues (b) Provide a vehicle for dialogue, including information sharing, between like-minded but diverse interests

[1] Regional councils assessed exclude the larger unitary councils (Marlborough and Auckland)

Regional Council	Broad Overview of Biodiversity Actions and Initiatives
	(c) Identify common ground and establish a publicly-agreed policy position and partnerships (d) Make a commitment to positive action (e) Establish a collaborative framework to better work together and identify opportunities for obtaining the best results from finite resources.
Hawkes Bay	**Regional Biodiversity Strategy** - a guide to inform the community in their biodiversity efforts. Voluntary participation with organisations to promote biodiversity. **Biodiversity Accord** - A living document to support the Strategy that details the stakeholders of in the strategy. Includes 'Accountable Partners', 'Supporting Partners', and 'Friends of the Accord'.
Gisborne District (Unitary)	**Regional Pest Management Strategy** - The purpose of this Strategy is to provide for the efficient and effective assessment, management and/or eradication of pest plants and animals in the Gisborne District.
Bay of Plenty	**Biodiversity Programme** - a voluntary programme to empower landowners and community groups to protect valuable sites.
Waikato	**Waipa Catchment Plan** - The Waipā Catchment Plan (WCP) is intended to guide Waikato Regional Council, Waipā river iwi, communities and other stakeholders in the implementation of integrated catchment management activities within the Waipā River catchment. The plan includes: • The 20-year goals for the catchment. • Strategies to achieve the goals. • Implementation actions for the strategies, focusing on priority catchments for action. • The funding strategy for implementation activities.
Northland	**Biodiversity Section of the Council Regional Website** (no formal document) - statement of 'What is biodiversity', 'Lakes', Wetlands', ' Bring back natives', 'Action you can take'.

We first focus on general options that several other councils have implemented, and which Otago organisations also seek in this Region, then suggest more Otago-specific options to address the particular biodiversity needs of Otago Region.

9.2 Building capacity and relationships

Based on feedback from organisations, Otago Regional Council is likely to need to build capacity and strengthen relationships if it is to make a more effective and coordinated contribution to management of indigenous ecosystems and biodiversity. A biodiversity coordinator or other staff working with landholders and community organisations is probably essential for the relationship building that is required for effective biodiversity protection and enhancement work. Regional Council staff working with the community should be able to repay the required investment by enabling the community to help fulfil the Council's responsibilities. Having staff with marine biodiversity expertise would also be important to the development of appropriate policy for marine ecosystems and species. Marine expertise would also be useful for promoting appropriate marine research objectives and building relationships with NGOs working on marine biodiversity issues.

9.3 Regional biodiversity strategy

Many organisations called for more environmental leadership from ORC, and this could be expressed most clearly by a regional biodiversity strategy. A number of weaknesses in the Council's biodiversity-related actions have been identified because of this lack of strategic planning (Becher 2015). The strategy should:

- Have a vision for the long term.
- Summarise current biodiversity values in Otago.
- Summarise the activities of organisations that are currently undertaking biodiversity work.
- Identify threats to these biodiversity values.
- Identify where the most threatened indigenous biodiversity occurs, for example the locations of trout-free streams that support populations of inland galaxiid fish.
- Identify the priorities for short term action within the lifetime of the strategy.
- Clearly specify the actions Otago Regional Council would undertake, and the roles that TLAs and other organisations can play.

Actions undertaken by Otago Regional Council should ideally be specified by SMART objectives, being Specific, Measurable, Achievable, Realistic, and Time-bound objectives that allow achievement of objectives to be measured.

9.4 Regional biodiversity accord

A regional biodiversity accord would be useful for setting out how the different agencies and organisations will work together to achieve successful biodiversity outcomes. Key stakeholders in such an accord would be the TLAs within Otago Region, the Department of Conservation, Kai Tahu and its Otago runaka, Land Information New Zealand, farming representatives, and significant NGOs such as those that are implementing wilding conifer control in Otago and those undertaking long-standing or landscape scale pest control and ecological restoration projects. The recent Predator-free Dunedin initiative is an example of such an accord.

9.5 State of the environment monitoring

Patchy and poorly-coordinated state of the environment monitoring, and relatively little monitoring of trends in indigenous biodiversity values, is a clear example of a gap that needs to be addressed in Otago, and was identified as such by numerous organisations. Dunedin City Council has begun the process of state of the environment monitoring and would likely welcome this being further developed for use across the wider Otago Region. Otago Regional Council, which already collects information that is used to monitor the state of water and air, would be the ideal organisation to lead development of a framework for more comprehensive regional state of the environment monitoring addressing indigenous biodiversity values, share implementation of monitoring with TLAs and the community, and regularly interpret and report on the monitoring indicators.

Declines in indigenous biodiversity in Otago Region are clearly occurring, most evidently with tussock grassland habitat, indigenous fish populations, and increasingly threatened indigenous fauna, such as kea, mohua, long-tailed bat, and rock wren, in the western mountains and/or extensively forested parts of Otago.

Significant declines may also be occurring in the marine environment. None of this is reported on consistently due to the patchy and poorly-coordinated state of environment monitoring. If Otago is to be able to report on the difference made by its management of indigenous ecosystems and biodiversity, then robust and comprehensively sampled state of the environment indicators will be needed.

9.6 Coordinate biodiversity enhancement actions

Pests and weeds do not respect property boundaries and thus their effective control almost always requires coordination of effort from different agencies and landholders. Coordination of effort is a particular issue for NGOs, which often lack the resources for effective co-ordination, and generally concentrate on local sites rather than large landscapes. Coordination was thus commonly identified by NGO organisations as a key issue that the Council could help with. In coordinating effort, the Council is also likely to identify strategic gaps in effort, which it could then potentially address through engaging with relevant landholders and provision of funding for pest control in these areas. Otago Regional Council would also be the logical organisation to monitor the effectiveness of pest control and determine where future control effort is best directed.

9.7 Regional parks and reserves

Establishment of regional parks or regional reserves can give a very public face to Otago Regional Council's biodiversity programme. Regional parks have been established in several other regions, including Auckland, Wellington, and Canterbury, and tend to be well used by the general public and thus provide an excellent basis for delivering advocacy on biodiversity issues. They are also places where members of the public and NGOs can be directly involved in biodiversity enhancement, through activities such as planting, pest control, and weed control.

A key consideration is that regional parks and reserves should not duplicate the functions of public conservation land. Thus they could be located in areas where there is a scarcity of public conservation land or where they would complement adjacent or nearby public conservation land.

To achieve the public advocacy and involvement functions of regional parks, consideration should also be given to suitable public access, recreational opportunities, and proximity to population centres.

Regional reserves, which are primarily for the protection of indigenous biodiversity, do not necessarily have to be located in proximity to population centres, but for visibility and advocacy, would ideally also be well suited to public recreation.

9.8 Protection of tussock grassland habitats

Many stakeholders, both from coastal Otago and inland Otago, were concerned about loss of tussock grassland habitat. Protection of tussock grassland habitat is a key strategy, because there are no practical methods of restoring tussock grassland vegetation once it has been cleared. While alpine tussock grassland in Otago Region is generally well-protected, tussock grassland in montane habitats, which often forms

a matrix within which other indigenous habitat types (typically rock outcrops, shrublands, and wetlands) are present, is poorly-protected and diminishing rapidly. Options for improving the protection of tussock grassland vegetation include:

- Mapping the remaining extent of dense montane narrow-leaved snow tussock (*Chionochla rigida* subsp. *rigida*) and copper tussock (*Chionochloa rubra* subsp. *cuprea*) grassland outside existing protected areas. This could be done as a desktop exercise, using existing imperfect layers such as the 'tall tussock' unit in LCDB4.1, and refining or adding to these where necessary. A minimum polygon size should be used because the aim should be to capture the relatively large areas of remaining tussock grassland.
- Identification of areas where protection of montane tussock grassland is needed most, taking into account the needs of plant and animal species requiring tussock grassland (and other embedded) habitats, where there is a need for ecological services such as maintenance of water yield, and providing representation of tussock grassland habitat in different parts of the Region.
- Creation of new policy to provide better protection of tussock grassland habitat in these priority areas, for example in Regional Plans.
- Engagement with landholders on whose properties these priority areas lie.
- If necessary, contribute to the purchase and protection of such areas.

9.9 Predator-free Dunedin

Fund a pest control/eradication plan for the Dunedin area, and coordinate and help fund Dunedin groups undertaking pest control. Features that make Dunedin suitable as a strategic pest control/eradication area are:

- Extensive indigenous forest and plantation forest habitat, which would allow expansion of indigenous forest fauna populations once freed from the constraints of predation.
- Populations of coastal indigenous fauna that are vulnerable to mammalian predation, and which form the base of an economically valuable nature-based tourism activity
- Dunedin City Council administers extensive and highly significant areas of indigenous forest habitat, is already undertaking pest and weed control in some of these areas, and would welcome integrated control of pest animals.
- A supportive local community and many NGOs that have a long history of supporting indigenous biodiversity and undertaking pest control. Recently, significant landscape scale pest control projects have been developed by NGOs on Otago Peninsula and around the Orokonui Ecosanctuary.
- The Orokonui Ecosanctuary which provides a source from which predation-sensitive indigenous fauna can expand into areas where pest animals are held at sufficiently low densities.

9.10 Landscape-scale pest control in other areas

Landscape-scale integrated pest control is most needed where populations of vulnerable indigenous fauna persist or can be reintroduced. These factors align where there are significant tracts of indigenous forest, often incorporating significant rivers and streams, such as in the Catlins and in the Western Lakes and Mountains zone. Other sites where seasonal control of pest animals could be beneficial include sites such as the upper Manuherikia River adjacent to Falls Dam, which provides spring breeding habitat for vulnerable threatened braided river birds. This level of pest control generally requires strong design and coordination from an agency, but is very commonly supported by NGOs. A review could be undertaken to determine where the best options for landscape scale control of pest animals are present in Otago Region.

9.11 Mountains to the Sea Corridor

The Clutha River, on which Otago Region is largely based, traverses five of the 11 ecosystem zones during its passage from Otago's western mountains to the lowland plains, and exerts a profound, if poorly-understood, effect on marine ecosystems and species off the Otago Coast. As part of a long term, strategic vision, the Clutha River could be used promote indigenous ecosystem and biodiversity protection and enhancement throughout the Clutha catchment. An advantage of the Clutha River is the population centres that occur along it and the roads and cycle trails that occur along its margins. In addition, by cutting a deep channel through many parts of its course, the Clutha River is accompanied by broad, steep, valley sides that have had some resistance to agricultural intensification and often support existing stands of indigenous vegetation and habitat.

A mountains to the sea framework, which is being promoted in other parts of New Zealand, would also potentially encompass most of the kinds of ecosystem and biodiversity protection and enhancement that are required to maintain Otago's indigenous biodiversity. For example the western mountains support threatened indigenous fauna which require large scale pest control, while the upper Clutha basin supports high indigenous dryland biodiversity values that are vulnerable to the pressures of agricultural intensification. In the lowland part of the catchment, the Clutha River traverses the Southern Downlands and Lowland Plains ecosystem zones, which have little indigenous habitat remaining, thus require ecological restoration projects to increase the extent of indigenous habitat.

9.12 Other corridors and catchments

The Waikouaiti River catchment has experienced successful NGO, landholder, and iwi partnerships for activities such as riparian planting and water quality monitoring. The catchment also contains large farming landholders who have proved sympathetic to biodiversity enhancement, in both the North and South Branches of the Waikouaiti River. The Waikouaiti Estuary was the focus of comment from several organisations, and a site where planning for the effects of sea level rise on indigenous biodiversity would be valuable.

The Kakanui catchment has also benefited from Landcare Trust programmes and community partnerships. Rural landholders in this part of Otago are likely to be willing partners in any future programmes involving restoration and enhancement of indigenous biodiversity.

The Taieri River has experienced declines in water quality since approximately 2012, which extend from the upper to the lower catchment. Relatively little of the Taieri River catchment occurs on protected land, and increases in dairy farming activity are most likely to be the cause of the decline in Taieri River water quality. Developing a catchment project for the upper Taieri River, including retiring farmland in headwater catchments and fencing and riparian planting in areas where intensive land use is occurring, could help to improve water quality.

9.13 Biosecurity

Development of an Otago Biosecurity Strategy would identify likely threats, the policies that could be put in place to help avoid new incursions, how surveillance should be undertaken, and what the appropriate contingency responses would be in the event of invasion. Robust biosecurity is likely to be cost-effective compared to the ongoing need to control significant pests that do manage to get established. 'Easy wins' should be exploited first, for example a protocol to ensure that badly-fouled ships are not able to dock in Otago Harbour could be effective. Biosecurity is also very relevant to the inland lakes, as demonstrated by the apparently intractable problem with lagarosiphon and the recent incursion of 'lake snow'. Each of these organisms has resulted in significant disruption to local residents and visitors, and to indigenous habitats.

9.14 Marine protected areas

Support for the implementation of a representative and publicly accessible network or marine protected areas would be a worthy objective. The South East Marine Protection Forum process may not result in adequate representation of marine ecosystems and habitats in protected areas, thus there may be scope following the process for further marine protection or regulation. For example, the marine protected area options so far identified would be difficult for general public access, as none adjoin public beaches. In addition, ongoing research is likely to generate new information, which may justify additional protection of marine habitats. The Regional Council could potentially have a role in enhancing fisheries, for example by establishing no-take zones to enable effective paua recruitment.

9.15 Research

Two significant habitats in Otago Region, both aquatic, warrant further research and monitoring, these being the inland lakes and the marine environment. Otago Regional Council is already working in this area, having supported a recent research bid from the University of Otago, to investigate the sensitivity or resilience of the inland lakes. In addition, the Regional Council is part-funding a science-liaison officer undertaking work for the Yellow-eyed Penguin Trust. Ongoing support of this kind is important.

10. PRIORITISING OF SUGGESTED ACTIONS

The actions identified above were categorised and prioritised using the following criteria:

- Actions that are easily-implemented in the short term.
- Relative urgency of preventing loss of biodiversity.
- Important planning actions.
- Actions that will harness significant community support.
- Actions that will provide a vision for others to follow.

Table 9 illustrates how these actions could be prioritised.

Table 9: Short-term prioritisation for suggested actions to improve protection and enhancement of indigenous ecosystems and biodiversity in Otago Region.

Action	Short Term Priority	Timescale/Notes
Process Actions		
Regional biodiversity strategy	**High**	Should be started immediately.
Regional biodiversity accord	**High**	Needed to implement regional biodiversity strategy.
Building capacity and relationships	Moderate	Important to maintain in long term.
Coordinate biodiversity enhancement actions	Moderate	Will depend on outcomes of biodiversity strategy.
Protection/Restoration Actions		
Mountains to Sea corridor	**High**	Important to establish vision/goals.
Establish regional parks/reserves	**High**	Important to establish vision/goals.
Other river corridors	**High**	Important to establish vision/goals.
Assist Predator-free Dunedin	**High**	Planning is happening now, and the Regional Council should be a strong partner.
Biosecurity	**High**	Maintain current high level of action.
Protect tussock grassland habitats	Moderate	Identify opportunities, initiate them as they arise.
Assist other pest control projects	Moderate	Depends on cost-effectiveness.
Marine Protected Areas	Low	Evaluate once current MPA outcomes are known.
Research/Monitoring Actions		
State of the environment monitoring	**High**	Evaluate potential regional biodiversity indicators.
Research	Moderate	As opportunities arise.

11. CONCLUSIONS

Otago Region contains strong ecological and land use gradients and supports nationally significant ecosystems, habitats, and populations of birds, marine mammals, lizards, fish, plants, and invertebrates. Otago's key ecosystems include upland tussock grasslands, indigenous forests, significant rivers and lakes, diverse marine ecosystems, and distinctive limestone, saline, and outwash plain habitats.

There is strong community and NGO support for indigenous biodiversity especially in the eastern and western parts of Otago, and this community would welcome greater interest in the management of indigenous biodiversity from the Otago Regional Council. In particular, many communities would welcome better coordination of and

assistance with pest animal control projects. It is clear that the Council will not have to do all the necessary work alone, as there are a number of already active partners and stakeholders. Options identified for Regional Council action cover a range of ecosystems and kinds of action, and vary from short term actions to those that would be undertaken with very long goals under a long term vision.

Regional outcomes from improved management of indigenous biodiversity will include greater community pride for and care for Otago's biodiversity, and indigenous biodiversity providing ecosystem services that help the prosperity and long-term sustainability of Otago communities.

The Regional Council should consider the above (and any other) options and for each option, identify whether it wants to be a leader, a partner, a funder, a facilitator, or not be involved.

The first logical step is preparation of an Otago Biodiversity Strategy which outlines a vision for Otago's biodiversity, the current state of Otago biodiversity, the actions Otago Regional Council will take to maintain and enhance indigenous biodiversity, how it will integrate its work with that of other stakeholders, and how biodiversity outcomes will be monitored. Within the strategy, a vision for Otago's indigenous biodiversity can be presented at an overall level, but also at the level of individual projects, such as a mountains-to-sea corridor, establishment of regional parks, and for advanced landscape-scale pest control projects, such as predator-free Dunedin. The Otago Biodiversity Strategy should fit under a regional biodiversity accord which will set out how the larger stakeholders - such as takata whenua, Regional Council, District Councils, Department of Conservation, LINZ, and MPI - will work together.

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APPENDIX 1

SUMMARY OF CONTENT FOR PROPOSED OTAGO BIODIVERSITY STRATEGY

Key Elements of a Biodiversity Strategy for Otago Region

- Executive summary
- Introduction
- Summary of Otago's Biodiversity
  - Key biodiversity features
  - Key threats
  - Key opportunities
- Otago Regional Council role in biodiversity management
  - Statutory context (International, RMA, Biosecurity Act)
  - Regional policy - relevant to indigenous biodiversity
  - Core Otago Regional Council functions that support indigenous biodiversity
  - Who Otago Regional Council works with to achieve these functions
- A strategic approach for Otago
  - Regional vision
  - Principles - that Otago Regional Council biodiversity work will be guided by.
  - Goals; for example three major goals addressing key areas with multiple disciplines under each:

    Biodiversity values
    - Terrestrial
    - Wetlands
    - Rivers and streams
    - Lakes
    - Coast
    - Marine

    Ecosystem functions
    - Water yield
    - Water storage
    - Carbon storage
    - Mahika kai
    - Natural character
    - Amenity values

    Communities
    - Advocacy
    - Support
    - Information
    - Private land
    - Monitoring and reporting
- Objectives for each goal
- Implementing the strategy
  - Actions to be undertaken within each Objective
- Appendices
  - More detailed context information
  - Role of agencies in biodiversity management
  - NGO and community groups involved in biodiversity management

The strategy should be concise and include images covering the range of Otago biodiversity, and that help to promote the strategy vision. It should clearly identify what the Otago Regional Council will do, and how it will work with other stakeholders. Potential projects should not be included in the strategy, but should be outcomes of the strategy.

APPENDIX 2

SUMMARY OF ORGANISATIONS WORKING ON INDIGENOUS BIODIVERSITY

The summary does not include regional and district councils

Organisation Type	Organisation	Mandate/Aim	Organisations Activities	Funding Sources
Research	University of Otago	Research that makes a difference to our lives, economy, society, and environment	Research, including on terrestrial, freshwater, and marine ecosystems and biodiversity	Government and commercial funding, donations
Research	Landcare Research	To drive innovation in the management of terrestrial biodiversity and land resources	Research on terrestrial ecosystems and species	Government and commercial funding
NGO	Kai Tahu and its local runaka	To honour the deeds and values of past generations and create an inheritance for future generations. To be a responsible steward.	Kati Huirapa Runaka ki Puketeraki hosts volunteers for Estuary-River Care Waikouaiti-Karitane, is undertaking mahika kai and Waikouaiti River projects, and is a partner in several other projects including Orokonui Ecosanctuary and Beyond Orokonui projects. Korako Karetai Trust is in partnership with Otago Peninsula Trust for the protection of blue penguins at Takiharuru Pilots Beach at Pukekura Taiaroa Heads.	Government, Kai Tahu, grants
Govt organisation	Department of Conservation (DOC)	The government agency charged with conserving New Zealand's natural and historic heritage	Advocacy, protection, pest animal control, weed control	Government, sponsorship
Govt organisation	Ministry for Environment (MfE)	Principal government advisor on the environment	National policy for indigenous biodiversity	Government
Govt organisation	Ministry for Primary Industries (MPI)	Protecting New Zealand from biological risk.	Biosecurity including wilding conifer control	Government
Govt organisation	Land Information New Zealand (LINZ)	Managing Crown property well to benefit future generations.	Biosecurity including lake weed control	Government
NGO	Queen Elizabeth the Second National Trust (QEII)	Partnering to protect special places on private land for the benefit of future generations.	QEII covenants throughout Otago, provision of advice to landholders	Government, grants, donations
NGO	South-east Marine Protection Forum	Recommend to Government a network of marine protected areas that will maintain and regenerate biodiversity and build resilience.	Compiling marine information, identifying representative habitats, consulting with public, identifying a potential MPA network for the south-east South Island coast.	Government

Organisation Type	Organisation	Mandate/Aim	Organisations Activities	Funding Sources
NGO	New Zealand Fish and Game Council (Fish & Game)	To manage, maintain and enhance sports fish and game birds and their habitats in the best long-term interests of present and future generations of anglers and hunters.	Protecting and enhancing lakes, rivers, streams and wetlands; RMA issues and advocating against consents which impact on valued habitats and providing 'national park' status to our important rivers through Water Conservation Orders. Habitat Enhancement Fund (HEF) programme	Government, licencing fees, membership.
NGO	New Zealand Landcare Trust	Undertake and support sustainable land and water management practices	Field days, workshops, community liaison, project management	Grants, donations
NGO	Yellow-eyed Penguin Trust	Committed to creating natural environments where threatened yellow-eyed penguins can thrive	Habitat restoration, including predator control, weed control, growing and planting indigenous plant species, and fencing. Education, advocacy.	Membership, sales of merchandise, grants, donations, sponsorship.
NGO	Royal Forest and Bird Protection Society	Protecting our indigenous plants, animals and wild places, on land and in our oceans.	St Clair cliffs seabird project Wilding pine control Working bees for local reserves	Membership, donations, grants, bequests.
NGO	Otago Natural History Trust	To restore the ecological integrity of the Orokonui Valley by providing a pest-free environment where existing indigenous species can thrive and into which absent indigenous species can be safely introduced.	Operation of Orokonui Ecosanctuary, advocacy, education	Visitor income, membership, donations, grants, bequests.
NGO	Hawksbury Lagoon Inc.	To enhance, protect and conserve the habitats of the wildlife and plant life within the environs of the Hawksbury Lagoon.	Planting, weed control.	Sales of cards and tea towels. Grants and donations.
NGO	Landscape Connections Trust	Protect and restore indigenous biodiversity.	How safe is my cat? Predator control for blue penguins Halo Project Habitat relations of forest birds Coastal forest enhancement	Grants, sponsorship
NGO	Estuary-River Care Waikouaiti-Karitane	Maintaining a healthy river and estuary ecosystem through community participation - monitoring, revegetation, advocacy,	Planting.	Grants, sponsorship

Organisation Type	Organisation	Mandate/Aim	Organisations Activities	Funding Sources
		bird-watching		
NGO	Otago Peninsula Trust	The preservation of the natural attractions of the area and the protection of the flora and fauna of the area.	Administration and practical support for other small groups, education, management, weeding, planting	Air New Zealand Environmental Trust, membership, grants, donations
NGO	Save the Otago Peninsula	To protect and enhance the natural environment of the Otago Peninsula	The protection of bush remnants on the Otago Peninsula. The re-vegetation and enhancement of habitat for indigenous bird, reptile, invertebrate and freshwater life. Plant and animal pest control. Producing publications and displays to encourage public education and awareness of issues on the Otago Peninsula. Working with three Enviro-schools on the Peninsula.	Sales of postcards, grants and donations.
NGO	Central Otago Wilding Conifer Control Group	Provide guidance and co-ordination to achieve control of wilding conifers in Central Otago Identify the extent of wilding conifer spread within Central Otago Establish priorities for control work on wilding conifers Establish a strategy for implementing wilding conifer control over the next five years including identifying control methods Establish the projected costs for implementing the strategy Identify potential funding sources	Provide guidance and co-ordination to achieve control of wilding conifers in Central Otago Identify the extent of wilding conifer spread within Central Otago Establish priorities for control work on wilding conifers Establish a strategy for implementing wilding conifer control over the next five years including identifying control methods Establish the projected costs for implementing the strategy Identify potential funding sources	Ministry of Primary Industries
NGO	Speights Environment Fund	To preserve and protect Otago's natural environment	Provides grant income to groups and individuals within Otago	Lion
NGO	Otago Peninsula Biodiversity Group	To facilitate the eradication of animal pests on the Otago Peninsula and thereby protect the area's biodiversity values	Possum control, vegetation monitoring, education	Donations, grants
NGO	Hereweka	To maintain the working landscape	Planting	Dunedin City Council,

Organisation Type	Organisation	Mandate/Aim	Organisations Activities	Funding Sources
	Harbour Cone Trust	and enhance landscape, ecological, recreation, cultural and heritage values of the Hereweka/Harbour Cone property		grants
NGO	Richdale Trust		Partner in protecting blue penguin	
NGO	Aramoana Otago Conservation Charitable Trust	To preserve the unique wildlife and flora of the Aramoana area	Clearing, planting and maintaining public areas around Aramoana	Grants, sponsorship
NGO	Glenore-Manuka Trust	Restoration of public reserve area on the banks of Tokomairiro River (near Manuka Gorge/Milton)	Regular workdays	Grants, sponsorship
NGO	Herbert Heritage Group	Enhancing the lower Waianakarua River through habitat restoration and revegetation of indigenous plants	Working bees to plant and release indigenous species	Grants, sponsorship
NGO	Healthy Harbour Watchers (Otago University, Dept of Chemistry)	Monitoring the health of the waters of Otago Harbour	Monitoring the health of the waters of Otago Harbour	Otago University
NGO	Our Seas Our Future	Protecting New Zealand's coastal and marine ecosystems through advocacy, education and environmental stewardship	Adopt-a-Coast and coastal clean-up events	
NGO	Te Rūnanga o Ngāi Tahu (Sinclair Wetlands)	To protect and enhance the wetland system of Te Nohoaka o Tukiauau/ Sinclair Wetlands, with emphasis on restoring vegetation condition and healthy habitat, maintaining water quality, while enhancing mahinga kai, and reconnecting people back to the land via education and hands-on experience	Plant propagation, pest animal and plant control, planting	Grants, donations
NGO	Te Rūnanga o		Support Sinclair Wetlands	

Organisation Type	Organisation	Mandate/Aim	Organisations Activities	Funding Sources
	Ōtākou			
NGO	Lake Waihola Waipori Wetlands Society	To sustainably manage the wetlands by increasing understanding about the area; providing safe recreational, cultural and educational opportunities and promoting suitable commercial/tourism activities within the wetlands	Weed control, planting, walking tracks	Grants
NGO	Quarantine Island/Kamau Taurua Community	Environmental and historic restoration, sustainability and spirituality	Planting, weed control	Grants, donations
NGO	Tomahawk-Smaills Beachcare Trust	Coastal ecology, restoration and community education	Nursery. Planting and maintenance in dunes	Grants, sponsorship, donations
NGO	Warrington Reserve Group		Planting and plant maintenance on Warrington Reserve	Grants, donations
NGO	Te Kākano Aotearoa Trust	To maintain a successful community-based nursery which services indigenous habitat restoration projects in the Upper Clutha Basin; to inspire and assist other communities through education, demonstration and hands-on participation.	Nursey for propagating plants, advocacy, planting projects, citizen science projects	Sponsorship, grants, in-kind products and services from individuals and businesses
NGO	Lindis Pass Conservation Group	Tall tussock restoration	Weed control, seed collection, growing of tussocks, planting	Grants, donations
NGO	Longview Environmental Trust		Indigenous revegetation and restoration, pest plant and animal control, education and sustainable building.	
NGO	Wakatipu Reforestation Trust	To grow and plant indigenous species in the Wakatipu basin.		Sponsorship

Organisation Type	Organisation	Mandate/Aim	Organisations Activities	Funding Sources
NGO	Matukituki Charitable Trust	Ensure the natural values of the Matukituki Valley are protected and enhanced	Pest animal control and outcome monitoring	Sponsorship
NGO	Wakatipu Wilding Conifer Control Group(WCG)	Protecting biodiversity and the remarkable landscape of the Wakatipu for the benefit of residents, users, tourists and particularly, future generations	Control of wilding trees	Sponsorship, grants
NGO	Alpine Bird Song (ABS)		4 GoodNature possum traps in the Fernhill area and 10 DOC 200 Traps along the Arawata Track	Sponsorship
NGO	Routeburn Dart Wildlife Trust	To bring back indigenous birdsong to the Routeburn and Dart Valleys and their immediate tributaries	Intensive pest control and species re-introductions	Sponsorship, donations
NGO	Lower Waitaki River Management Society	To protect and enhance, in a sustainable way, the Lower Waitaki River system	Canterbury mudfish protection project, wetland and riparian planting	
NGO	Sustainable Coastlines Charitable Trust	Enabling people to look after the coastlines and waterways they love	Coordinate and support large-scale coastal clean-up events, educational programs, public awareness campaigns and riparian planting projects. Help groups run their own events. E.g. Kaikorai Stream planting, Otago presentation workshops, East Taieri School planting.	Sponsorship, donations, grants, events, fundraising, merchandise
NGO	Ngāi Tahu Mahinga Kai Enhancement Fund	Improving mahika kai resources	Improving inaka spawning sites	Kai Tahu
NGO	Mahinerangi Catchment Environmental Enhancement Fund			
NGO	WWF Habitat Protection Fund	Support communities to run projects that conserve and restore New Zealand's natural environment		Tindall Foundation, WWF
NGO	Central Otago	A project to reintroduce the Otago	Mokomoko Otago skink and grand skink sanctuary	Donation, grants,

Organisation Type	Organisation	Mandate/Aim	Organisations Activities	Funding Sources
	Ecological Trust	skink to the Alexandra Basin		membership subscription, fundraising
NGO	Herbert Heritage Group	Key objectives for the Waianakarua river mouth enhancement and protection include: • Protecting whitebait habitat in the lower river • Improving recreational, aesthetic and wildlife values • Discouraging driving on and around the northern banks of the river mouth • Some degree of monitoring success (bird counts, whitebait spawning, habitat) • Focussing on the lower reaches of the river.	Indigenous plantings and weed control	Grants, donations
NGO	Dunedin Environment Centre Trust	Environmental and community projects	Riparian projects Dunedin restoration plan	Grants
NGO	Environmental Education for Resource Sustainability Trust		Paper4trees, Watiaki - provides indigenous trees to schools in return for recycling efforts	Grants
School	Queenstown Primary School	Education	wetland planting project	Donations, working with NGOs, DOC, or community
School	Glenorchy Primary School	Education	planting project	Donations, working with NGOs, DOC, or community
School	Wanaka Primary School	Education	Native garden and nursery	Donations, working with NGOs, DOC, or community
School	St Gerards	Education	Working with Grant Norbury to develop safe lizard	Donations, working with

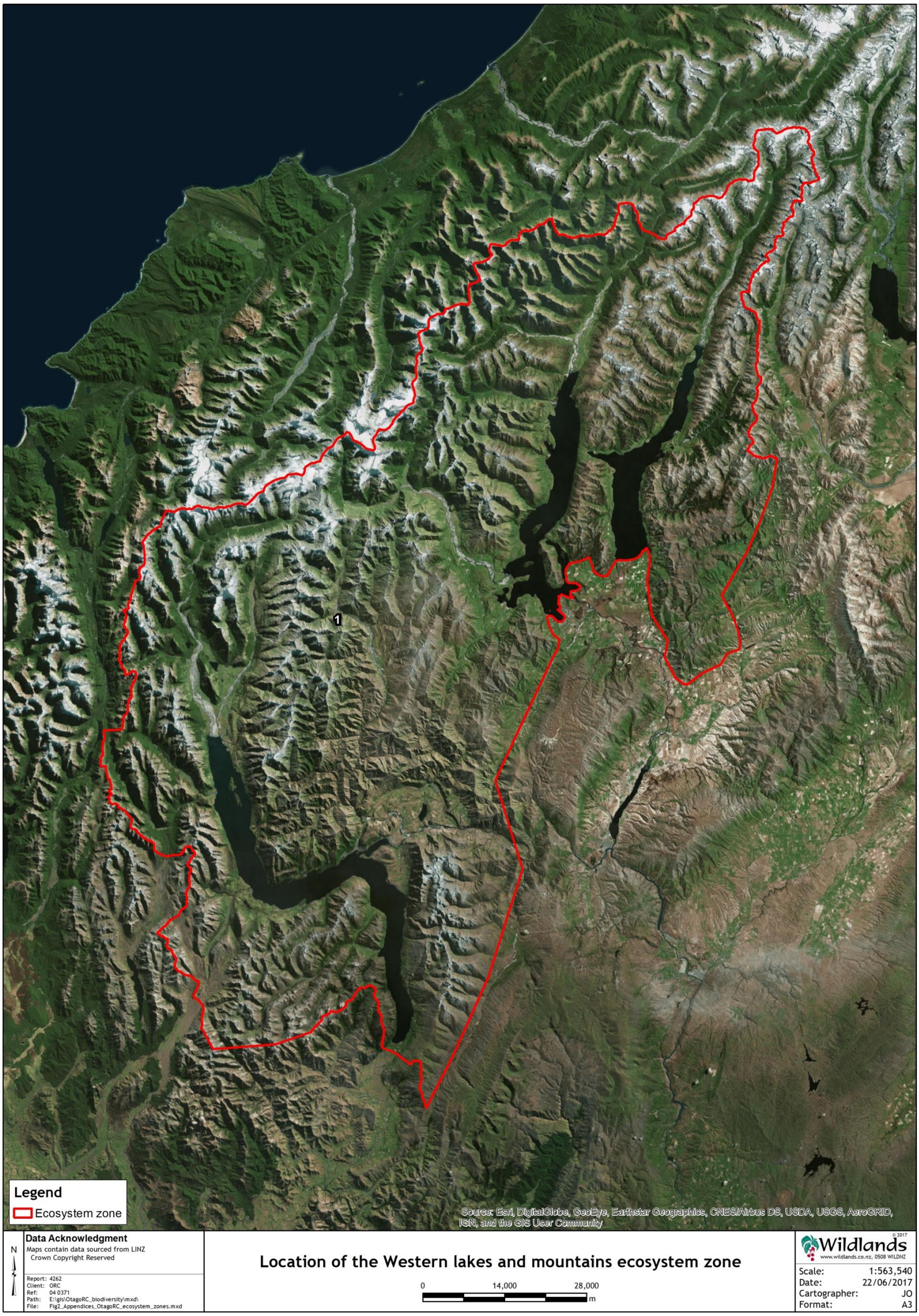
Organisation Type	Organisation	Mandate/Aim	Organisations Activities	Funding Sources
	Primary School		habitat on school grounds	NGOs, DOC, or community
School	Clyde Primary School	Education	Working with Grant Norbury to develop safe lizard habitat on school grounds	Donations, working with NGOs, DOC, or community
School	Goldfields Primary School	Education	Working with Grant Norbury to develop safe lizard habitat on school grounds	Donations, working with NGOs, DOC, or community
School	Waitati Primary School	Education	How safe is my cat? Halo pest control project. Riparian planting project	Donations, working with NGOs, DOC, or community
School	Purakaunui Primary School	Education	How safe is my cat?	Donations, working with NGOs, DOC, or community
School	Port Chalmers Primary School	Education	How safe is my cat?	Donations, working with NGOs, DOC, or community
School	Karitane Primary School	Education	How safe is my cat?	Donations, working with NGOs, DOC, or community
School	Warrington Primary School	Education	Riparian planting project	Donations, working with NGOs, DOC, or community
School	Waihola Primary School	Education	Riparian planting project	Donations, working with NGOs, DOC, or community

APPENDIX 3

SUMMARY INFORMATION ON ECOSYSTEM ZONES IN OTAGO

WESTERN LAKES AND MOUNTAINS

The Western Lakes and Mountains zone covers the western part of Otago Region and is the largest of the eleven zones at 948,572 ha. The zone has the highest cover (86%) of indigenous vegetation, primarily tall tussock grassland (43%) and indigenous forest (12%), with significant expanses of gravel or rock (9%), extensive lakes and ponds (7%), and less extensive subalpine shrubland (4%), fernland (3%), alpine grass/herbfield (2%), mānuka and/or kānuka (2%), and permanent snow and ice (2%). Exotic cover types are mainly low producing grassland (9%) and high producing exotic grassland (4%).



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Location of the Western lakes and mountains ecosystem zone

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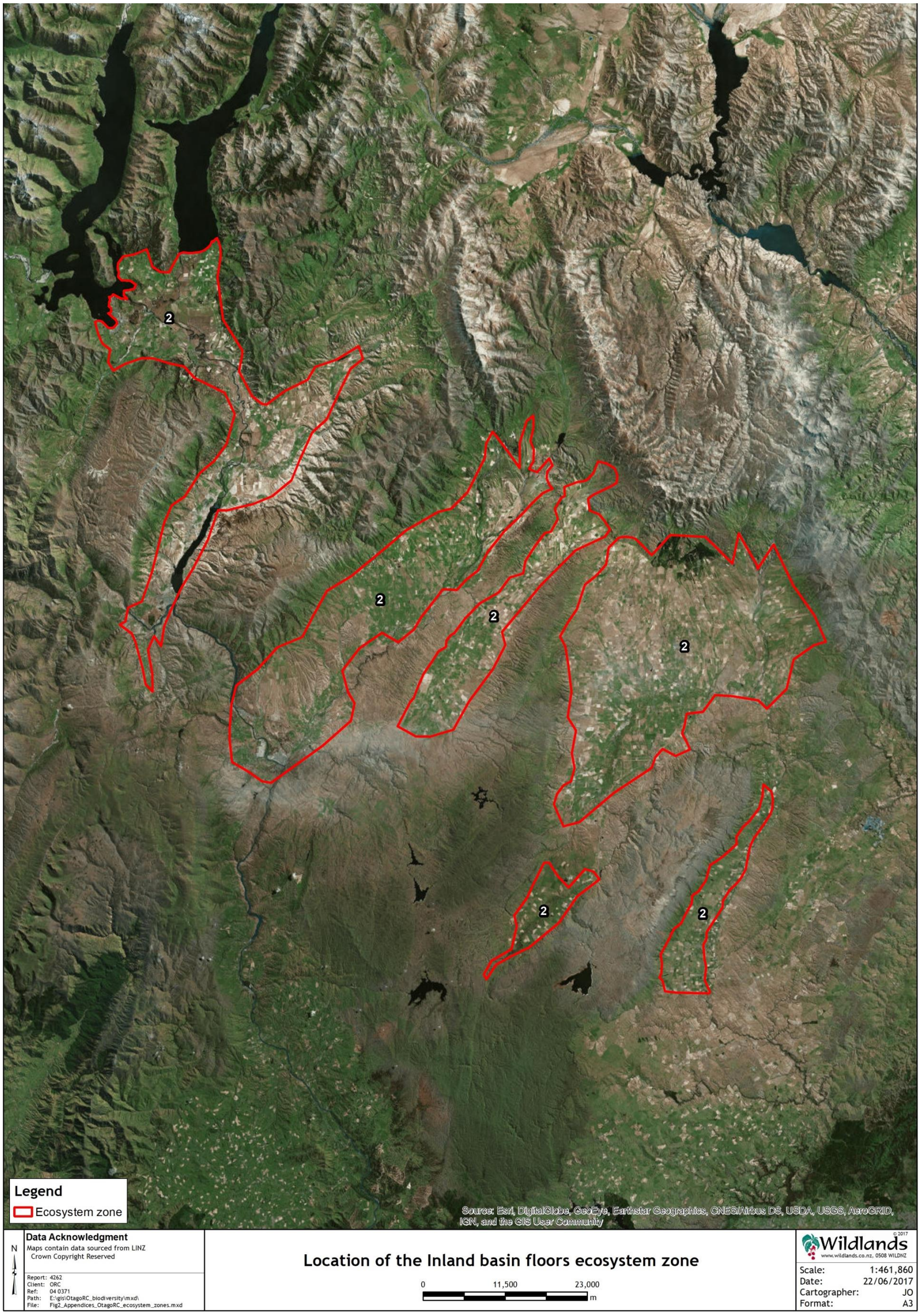
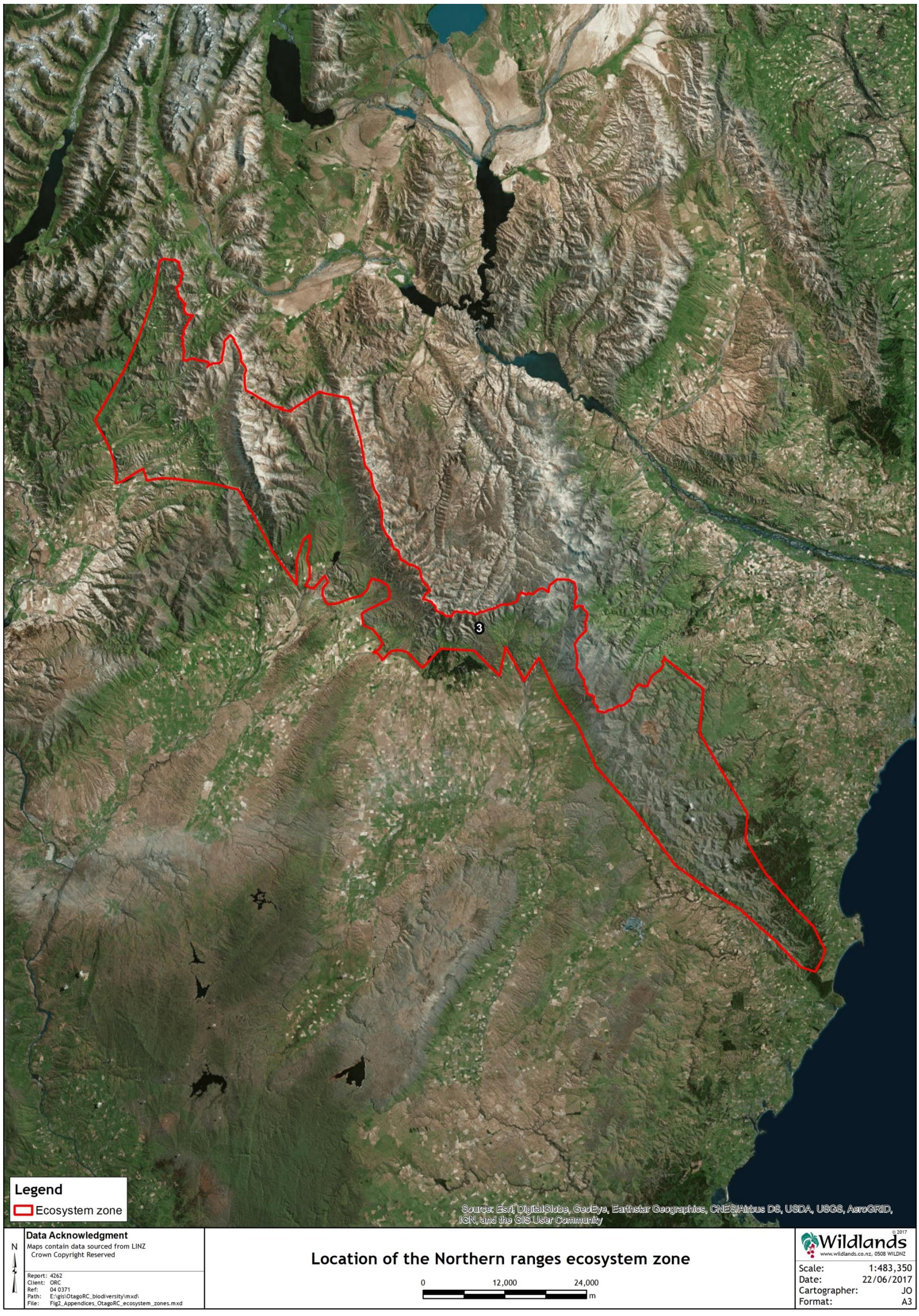
INLAND BASIN FLOORS

The Inland Basin Floors zone is made up of several discrete inland basins that lie between the inland block ranges. Like the Lowland Plains zone, only 5% of the original indigenous vegetation cover remains within the Inland Basin Floors zone, which is again dominated (71% of the zone) by high producing exotic grassland, but also has significant areas (14% of the zone) of low producing grassland. Also similarly to the Lowland Plains zone, there is practically no indigenous forest remaining in the Inland Basin Floors zone, and the non-forest indigenous cover on inland basin floors includes *c.*5,400 ha of herbaceous freshwater wetland vegetation and lakes and ponds, but also *c.*2,300 ha of tall tussock grassland and *c.*1,870 of depleted grassland.



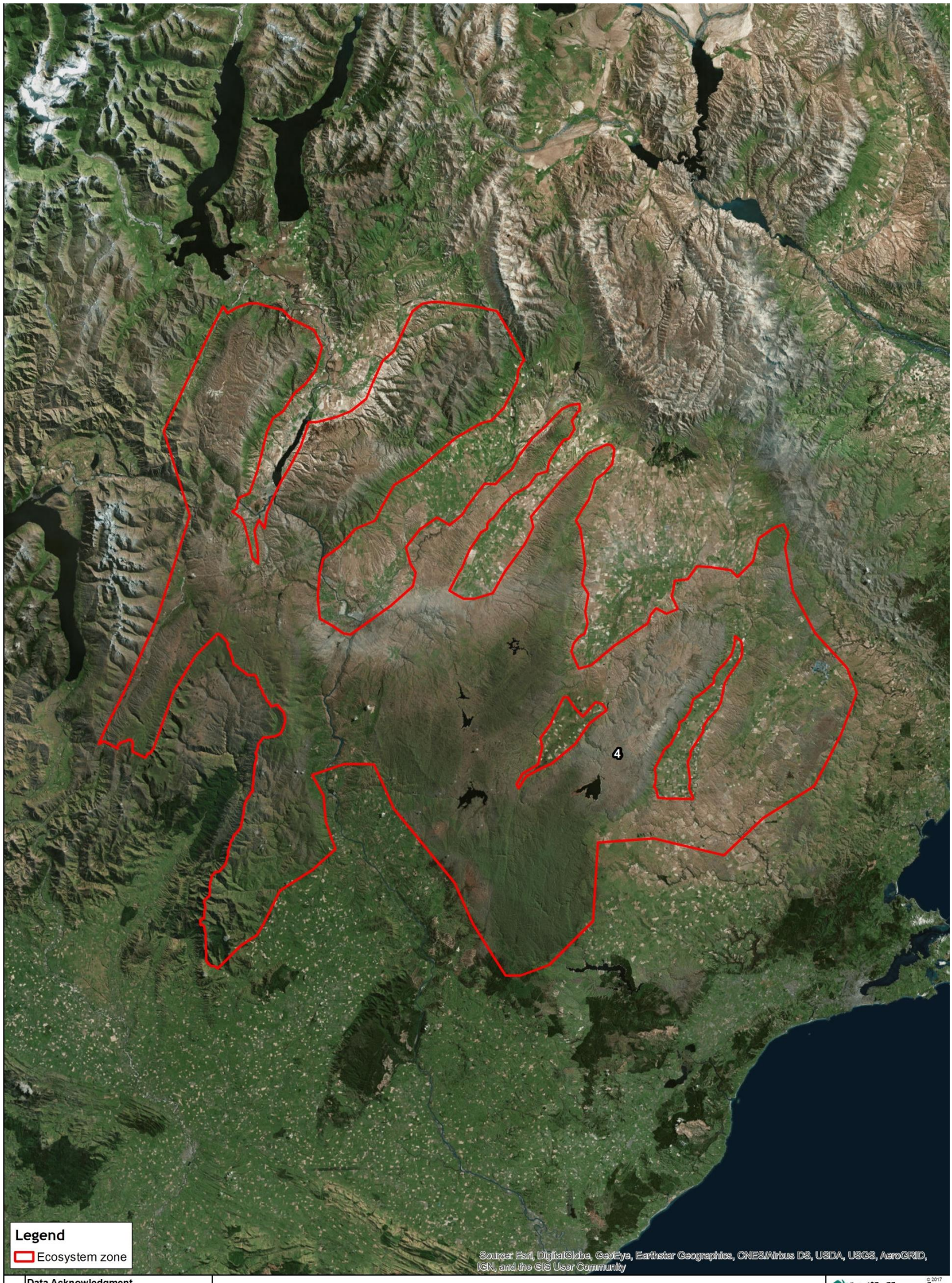
NORTHERN RANGES

The Northern Ranges zone takes in the greywacke ranges in the north of Otago Region, including the St Bathans Range, Hawkdun Range, Ida Range, Kakanui Range, and Razorback Range. In the central part of the zone only the southern slopes of these ranges are included within Otago Region. The Northern Ranges zone has a moderately high 58% indigenous cover, primarily made up of tall tussock grassland (41%), gravel or rock (5%), depleted grassland, alpine grass/herbfield and matagouri or grey scrub (all *c.*3%), and less extensive mānuka and/or kānuka (2%) and broadleaved indigenous hardwoods (1%). Exotic vegetation cover mostly comprises low producing grassland (36%), with relatively little (4%) high producing exotic grassland. Exotic forest again occupies less than 1% of the zone.



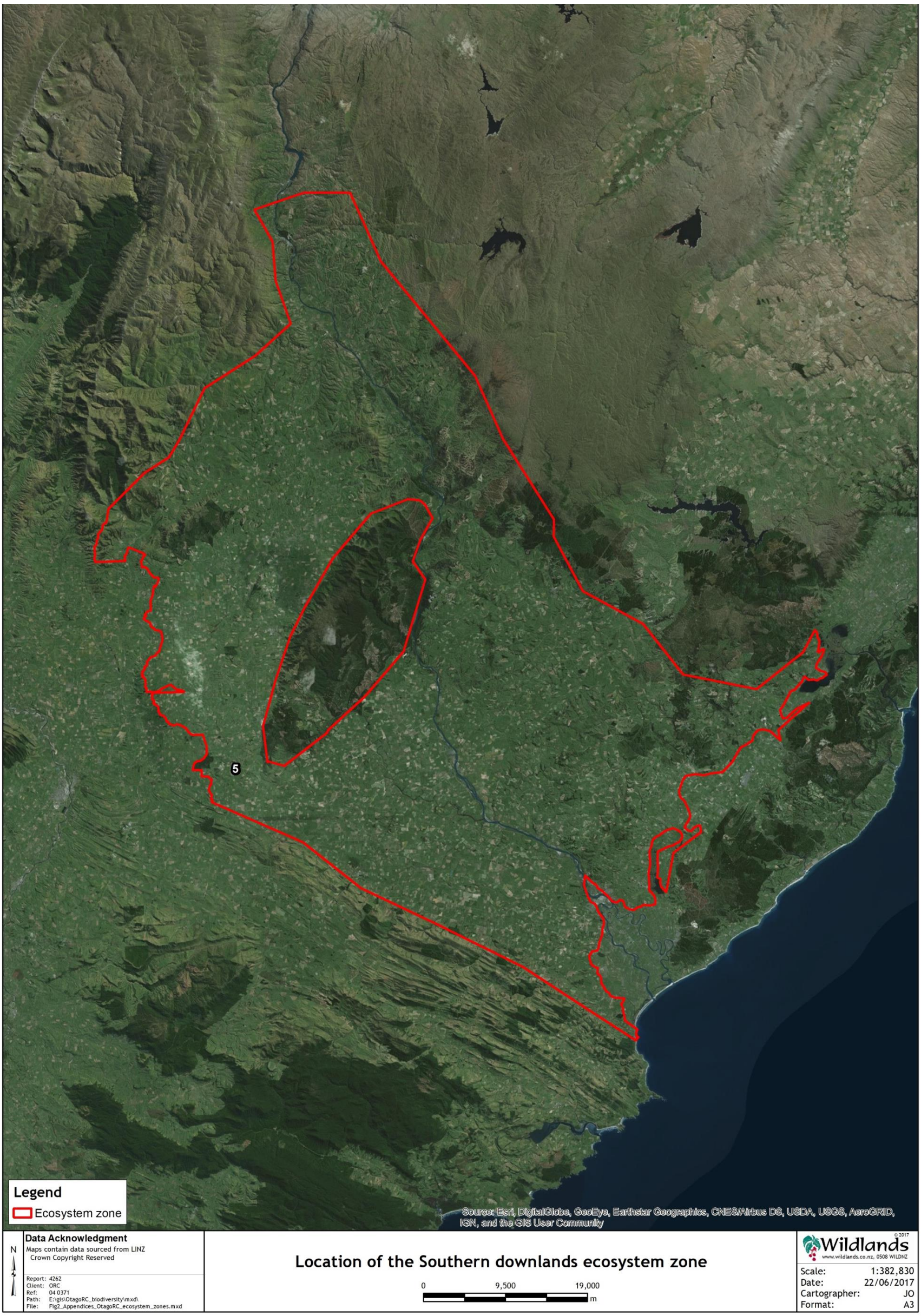
INLAND BLOCK MOUNTAINS

The Inland Block Mountains is the second largest (757,409 ha) zone, and forms a continuous zone that takes in all of the Otago schist block mountain ranges in Central Otago (the Criffel, Pisa, Carrick, Old Woman/Old Man, Knobby, Raggedy, Lammerlaw, and Rock and Pillar Ranges, the Garvie, Umbrella, and Dunstan Mountains, and the Taieri, and Rough Ridges), and the elevated ground between them, crossing the Clutha River where elevated ground occurs in close proximity on either side. Approximately 47% of the Inland Block Mountains zone is covered by indigenous vegetation, mainly tall tussock grassland (39%) and alpine grass/herbfield (1.2%). Low producing grassland is the dominant (36%) exotic cover type, followed by a relatively low 15% cover of high producing exotic grassland. Less than 1% of this zone is covered by exotic forest.



SOUTHERN DOWNLANDS

The Southern Downlands zone occurs on rolling hill country in the Pomahaka River catchment and the lower Clutha River catchment, and has a dominance of high producing exotic grassland (79%)s, but a lower proportion of low producing grassland (6%), while exotic coniferous forest covers 6% of the zone, and short rotation cropland 0.6% of the zone. Only 5% indigenous cover remains in the Southern Downlands zone, significant less than in the Northern Downlands zone. Half of indigenous cover comprises mānuka and/or kānuka, while 1% comprises broadleaved indigenous hardwoods and indigenous forest. The non-forest cover mainly comprises matagouri or grey scrub (0.6%).

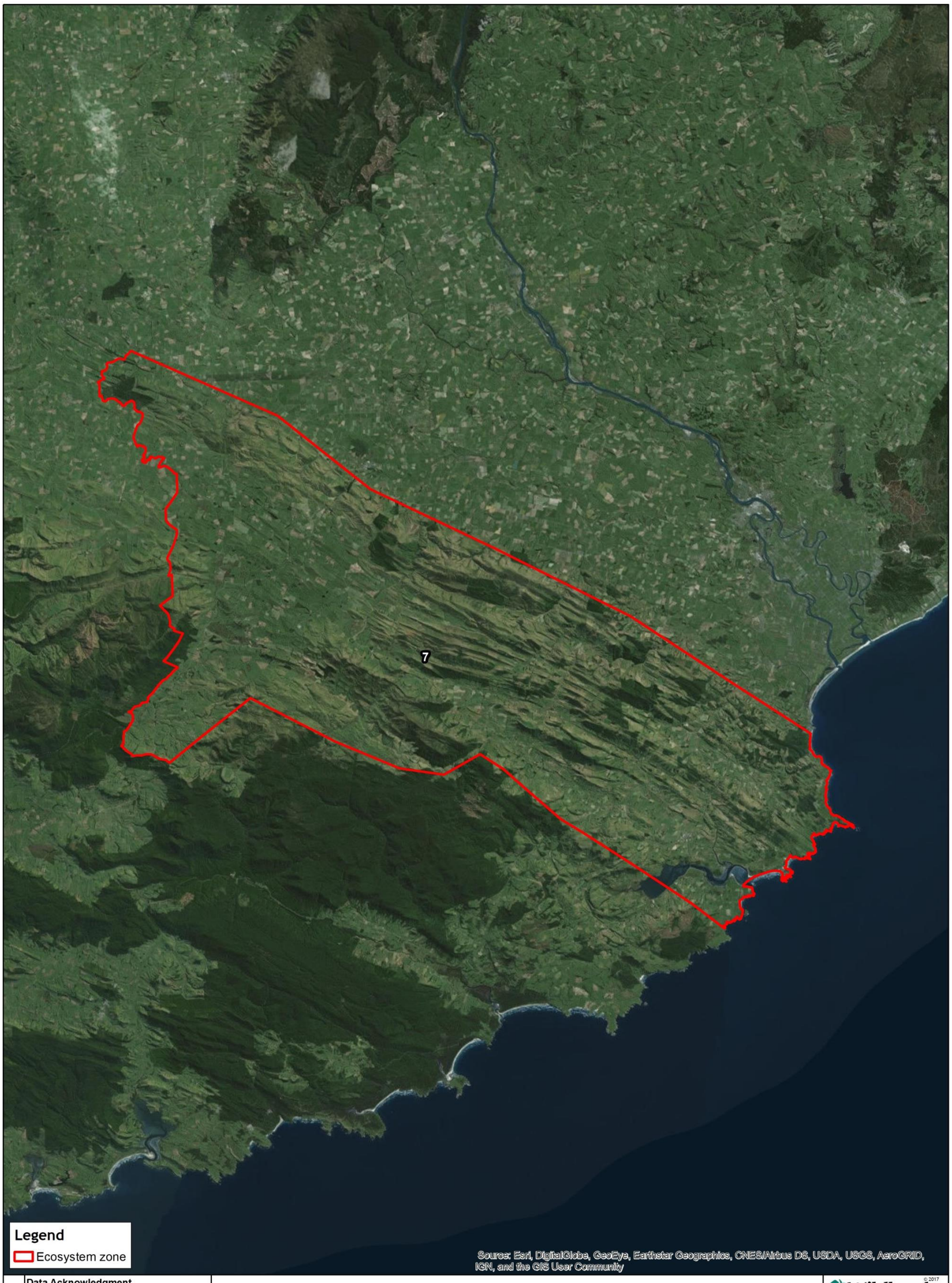


BLUE MOUNTAINS

The Blue Mountains zone (a relatively small 30,505 ha in size) forms an island within the Southern Downlands zone, formed by the abrupt topographic features of the Blue Mountains landform. The eastern part of the zone is largely covered in exotic plantation forest on dissected foothills, while the western part of the zone mostly comprises indigenous vegetation and habitats on the Blue Mountains ridge. Almost half of the zone (46%) is covered by indigenous vegetation, mostly comprising indigenous forest (36%), but also including extensive tall tussock grassland (8%). Exotic cover is primarily exotic forest (37%), with a relatively smaller proportion (11%) of high producing exotic grassland than the preceding zones. Low producing grassland occupies 4% of the Blue Mountains zone.

CATLINS FRINGE

The Catlins Fringe incorporates the Kaihiku, Wisp, and Rata Ranges on the northern half of the Southland Syncline, between the Southern Downlands and Catlins Zones. Vegetation cover in the zone is dominated by high producing exotic grassland (75%), followed by exotic forest (5.6%). Low producing grassland (4%) and gorse and/or broom (2%) are the other extensive exotic cover types. 13% of the Catlins Fringe zone is covered by indigenous vegetation, primarily indigenous forest types (8%), but also tall tussock grassland (1.8%) and a range of less extensive indigenous vegetation cover types including mānuka and/or kānuka, matagouri or grey scrub, estuaries, and freshwater wetlands.



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Location of the Catlins fringe ecosystem zone

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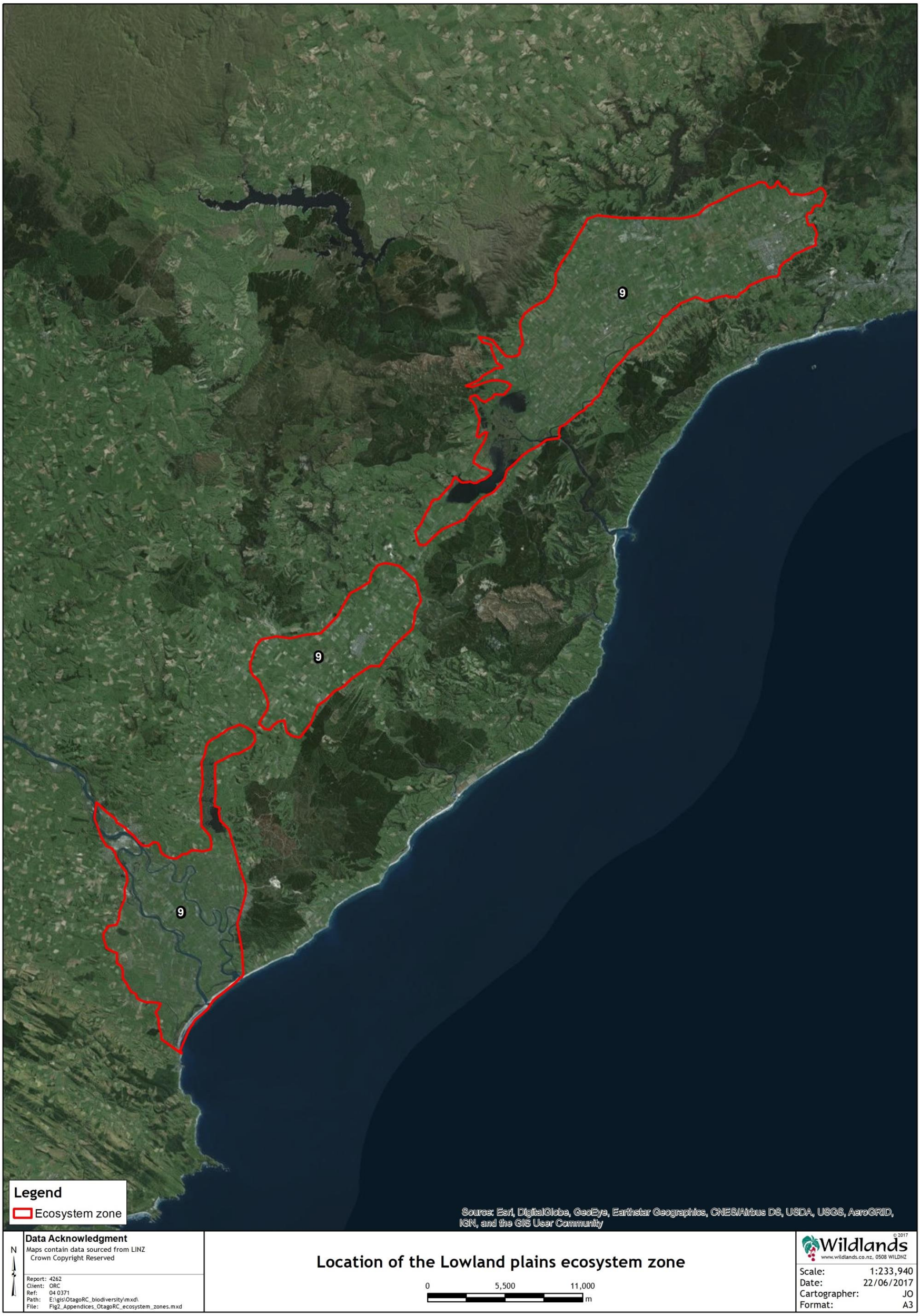
CATLINS

The Catlins zone is the most southern zone in Otago Region and is notable for relatively high proportion (64%) of its indigenous cover remaining, almost all of which comprises indigenous forest cover types. High producing exotic grassland occupies 25% of the zone, while exotic forest comprises 8% of the zone. No other cover types exceed 1% of the zone. The Catlins, Tahakopa, and Tautuku Rivers are mostly contained within the zone, where all reach the coast. Indigenous forest covers most of the upper catchments of the latter two rivers.

LOWLAND PLAINS

The Lowland Plains zone occurs on alluvial plains at the Waitaki River delta, on the lower Taieri Plains, on the Tokomairiro River plain, and on the lower Clutha River plains near Balclutha. High producing exotic grassland covers 84% of this zone, while indigenous cover is only 7%. Most of the indigenous cover on the Lowland Plains is non-forest indigenous cover, including significant areas (2,777 ha) of freshwater wetlands and lakes, including the Lakes Waihola-Waipori wetland complex, and Lake Tuakitoko in South Otago. The area of indigenous forest (92 ha) overstates the actual area of indigenous forest remaining, as approximately 30 ha of exotic willow forest on the lower Taieri Plain near North Taieri is incorrectly mapped as 'indigenous forest' in the land cover database.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Legend
Ecosystem zone
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Location of the Lowland plains ecosystem zone
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NORTHERN DOWNLANDS

The Northern Downlands zone is located on rolling hills between the Kakanui Range and the Waitaki River delta, and includes the Kakanui River catchment. High producing exotic grassland (66%) again covers most of the zone, with low producing grassland also extensive (12%). However land uses in the Northern Downlands zone are more mixed, supporting 7% exotic coniferous forest and 4% short rotation cropland. Approximately 8% of the Northern Downlands zone is covered by indigenous vegetation, most of which is indigenous forest. About half (4%) of the indigenous cover is manuka and/or kanuka, while broadleaved indigenous hardwoods cover just under 2.5% of the zone. These forest vegetation types are mainly restricted to steep gully sides which provide some resistance to clearance for agricultural use.

EASTERN HILL COUNTRY

The Eastern Hill Country zone takes in the coastal hills between the Waihemo/Shag and Clutha River, and the inland hill country, below approximately 500 m asl (above sea level), north of the Clutha River, including much of the Waihemo/Shag, Waikouaiti, Deep Stream, and Waipori River catchments except for the higher elevation parts of these waterways. A wide range of habitat types are extensive within the Eastern Hill Country zone. It retains a larger proportion (14%) of its original indigenous cover compared to the lowland plains and downlands zones described above, approximately two thirds this being indigenous forest (broadleaved indigenous hardwoods, indigenous forest, and mānuka and/or kānuka). Tall tussock grassland covers 1.7% of the zone, while wetlands, lakes, and ponds make up a further 1.3% of indigenous cover, although this includes Lake Mahinerangi, a man-made lake. High producing exotic grassland (54%) covers less of this zone than the preceding zones, and low producing grassland 5.5%. Exotic forest is extensive, covering about 20% of the Eastern Hill Country Zone. Gorse and/or broom also cover a significant part (2.4%) of the zone.

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OTAGO REGIONAL COUNCIL

Agenda for a meeting of the Regulatory Committee to be held in the Council Chamber, 70 Stafford Street, Dunedin on Wednesday 2 August 2017, following the Policy Committee

Membership:

Cr Bryan Scott (Chairperson)
Cr Sam Neill (Deputy Chairperson)
Cr Graeme Bell
Cr Doug Brown
Cr Michael Deaker
Cr Carmen Hope
Cr Trevor Kempton
Cr Michael Laws
Cr Ella Lawton
Cr Andrew Noone
Cr Gretchen Robertson
Cr Stephen Woodhead

Apologies: Cr Noone

Leave of Absence: Cr Neill

In attendance:

Please note that there is an embargo on agenda items until 08:30am on Monday 31 July 2017

CONFIRMATION OF AGENDA

CONFLICT OF INTEREST

PUBLIC FORUM

MINUTES

The minutes of the meeting held on 14 June 2017, having been circulated, for adoption.

ACTIONS: (Status report on the resolutions of the Regulatory Committee)

No current actions to be reported

PART A – REPORTS FOR NOTING

Item 1
2017/0907 **Biosecurity and RMA Monitoring Report.** DEMO, 18/07/17 -
This report describes the regulatory activity for the reporting period of 27 May to 14 July 2017.

Item 2
2017/0947 **Rabbit Serum Results 2017,** DEMO, 25/06/17 -
This report provides a summary of the wild rabbit serum samples collected across sites in Otago during the period December 2016 and March 2017.

Item 3
2017/0942 **RMA, Biosecurity Act and Building Act Enforcement Activities for the period from 27 May to 30 June 2017.** DPPRM, 11/07/17 -
This report details the Resource Management Act 1991, Biosecurity Act 1993 and Building Act 2004 enforcement activities undertaken by the Otago Regional Council during the period 27 May to 30 June 2017.

Item 4
2017/0950 **Consent processing, consent administration and Building Control Authority update.** DPPRM, 18/07/17 -
Detailing consent processing, consent administration and building control authority activity for the period 27 May to 30 June and 1-14 July 2017.

Item 5
2017/0955 **Progress Report 1C - Deemed Permit Replacements and Water Groups,** DPPRM, 19/07/17 -
This report notes progress on Project 1C implementation of the Regional Plan: Water policies for the period 26 May to 14 July 2017.

OTAGO REGIONAL COUNCIL

Minutes of a meeting of the Regulatory Committee held in the Council Chamber, 70 Stafford Street, Dunedin on Wednesday 14 June 2017, 4:21pm

Membership:	**Cr Bryan Scott** (Chairperson) **Cr Sam Neill** (Deputy Chairperson) **Cr Graeme Bell** **Cr Doug Brown** **Cr Michael Deaker** **Cr Carmen Hope** **Cr Trevor Kempton** **Cr Michael Laws** **Cr Andrew Noone** **Cr Gretchen Robertson** **Cr Stephen Woodhead**
Apologies:	Cr Deaker, Apology was accepted.
In attendance:	Peter Bodeker (CE) Nick Donnelly (DCS) Gavin Palmer (DEHS) Fraser McRae (DPPRM) Scott MacLean (DEMO) Michele Poole (Acting DSHE) Lauren McDonald (Committee Secretary)

CONFIRMATION OF AGENDA
The agenda was confirmed.

CONFLICT OF INTEREST
No conflicts of interest were advised.

PUBLIC FORUM
No public forum was held.

MINUTES

The minutes of the meeting held on 3 May 2017, having been circulated were adopted on the motion of Crs Scott and Neill.

ACTIONS

Status report on the resolutions of the Regulatory Committee

Report No.	Meeting	Resolution	Status
2017/0569	8/2/17	*That the Chief Executive be requested to provide a paper to the next committee round on establishing effective Council management communications in regards to constituent complaints.* Resolved at the 3/5/17 meeting - That the Committee endorses the proposed process in responding to enforcement related complaints made by constituents to Councilllors, with the amended wording to section 2.8 of the report (removal of the wording "when necessary".)	CLOSED
2017/0593	8/2/17	*That ORC approach central government ministers with the intention of improving and further resourcing lagarosiphon control management in the Southern Lakes.* Public presentation made to Council on 17 May 2017 by LINZ, NIWA and Boffa Miskell on Lagarosiphon in the Otago Region.	CLOSED LINZ made a presentation to Council 17/5/17. Minister has been written to and CE has been in correspondence with Mr Jackie Dean

Cr Noone left the meeting at 4:24pm

PART A – REPORTS FOR NOTING

Item 1
2017/0803 **Biosecurity and RMA Monitoring Report.** DEMO, 31/05/17
This report described the regulatory activity for the reporting period of 14 April to 26 May 2017

Mr Bodeker reaffirmed Council's responsibility in regard to myrtle rust infestation currently identified in the North Island. He confirmed that MPI is the lead agency with ORC undertaking activity in support of the MPI programme.

A request was made for the Rabbit Co-ordination Group agenda and action plan to be provided to councillors for each meeting.

Mr Maclean confirmed the Rabbit Coordination Group agenda and action plan will be provided with the Director's report for future meetings.

Moved Cr Woodhead
Seconded Cr Hope

That this report is received.

Motion Carried

Item 2
2017/0813 **RMA, Biosecurity Act and Building Act Enforcement Activities for the period from 14 April to 26 May 2017.** DPPRM, 26/05/17
The report detailed the Resource Management Act 1991, Biosecurity Act 1993 and Building Act 2004 enforcement activities undertaken by the Otago Regional Council during the period 14 April to 26 May 2017.

Moved Cr Neill
Seconded Cr Kempton

That this report be noted.

Motion Carried

Item 3
2017/0835 **Consent processing, consent administration and Building Control Authority update.** DPPRM, 29/05/17
The report detailed consent processing, consent administration and building control authority activity for the period 13 April to 26 May 2017.

Cr Bell raised a concern in regard to an upcoming RMA consent hearing.

Cr Kempton left the room at 4:33pm due to conflict of interest as a member of the hearing panel.

A point of order was raised as the matter was outside the committee's jurisdiction.

Action: Cr Bell to provide the Chief Executive with the details of the constituent complaint.

Moved Cr Woodhead
Seconded Cr Hope

That this report be noted

Motion Carried

Cr Kempton returned to the meeting at 4:39pm

Item 4
2017/0819 **Progress Report 1C - Deemed Permit Replacements and Water Groups,** DPPRM, 24/05/17
The report noted progress on Project 1C implementation of the Regional Plan: Water policies for the period 18 April to 26 May 2017.

Moved Cr Robertson
Seconded Cr Hope

That the report is noted.

Motion Carried

The meeting was declared closed at 4:40pm

Chairperson

Otago Regional Council

REPORT

Document Id: A1015216

Report Number: 2017/0907
Prepared For: Regulatory Committee
Prepared By: Director Environmental Monitoring and Operations
Date: 18 July 2017

Subject: **Biosecurity & RMA Monitoring Report 27 May-14 July 2017**

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1. Précis

This report describes the Regulatory activity for the reporting period 27 May-14 July 2017.

2. Biosecurity

2.1 Myrtle Rust

ORC biosecurity staff remain on standby to assist MPI with the Myrtle Rust response but at this stage it has not been requested.

2.2 Aquatic pest activity

Lagarosiphon covering an area of 3.5 ha in Paddock Bay in Lake Wanaka has been sprayed by LINZ contractors.

Signage developed by the ORC is to be erected below the Kawarau Falls at Lake Wakatipu in an effort educate boat users about the risk of transferring Lagarosiphon from Kawarau River into Frankton Arm. Further initiatives are being considered by the Wakatipu weed management group to prevent the spread of Lagarosiphon into the lake.

2.3 Marine biosecurity

A staff member attended a marine pest identification training workshop this reporting period. The workshop, facilitated by the Ministry for Primary Industries and NIWA, covered marine pest management roles and responsibilities, marine pathway plans and marine pest identification. This was valuable staff training and provided useful insights to consider as Council reviews the Regional Pest Management Plan for Otago.

2.4 Wallaby activity

Approximately 4100 hectares of land has been inspected this reporting period in Central Otago, North Otago and the Maniototo. This was undertaken by staff and contractors using specially trained wallaby detection dogs. No evidence of wallaby activity was found.

A farm manager in the Tarras area reported seeing a wallaby during this reporting period. He took note of its location and contacted the ORC immediately. Staff deployed to the area and located it at night using night vision thermal imaging equipment. The animal, a barren female, was promptly dispatched. This is an excellent example of the community and the Council working together for a successful outcome.

Suspected wallaby scat found near Boundary Creek Manuherikia West Branch was sent to Landcare Research for DNA testing and returned a positive result for wallaby DNA.

A member of a hunting party shot and killed a male wallaby on a North Otago station in the Kakanui Mountains. ORC staff carried out inspection and confirmed the kill. The surrounding sign indicated the wallaby was a lone animal.

A sighting was reported in the Macraes area. This is as yet unconfirmed but further surveillance is being carried out in that area.

A single wallaby was sighted crossing SH85 near Brothers Peaks. This sighting has been confirmed and further surveillance of that area is being carried out.

2.5 National wilding conifer programme

Land Information New Zealand has developed and released a Wilding Conifer spatial mapping tool. This will greatly assist in measuring the progress of the national programme and give users the ability to map new infestations. The tool was launched by the Minister of Land Information and the Minister of Conservation. The Otago Regional Council was acknowledged by the Minister of Conservation at the launch for its contribution to and funding of wilding control efforts in Otago.

During the launch, it was also announced that Otago will have another new management Unit, the Lammermoor's, funded for control as part of the national programme.

2.6 Nassella

Property inspections in the Cardrona Valley were carried out this reporting period with 901 plants located and destroyed. The majority of these plants were seedlings. Ranging will be carried out in Nov-Dec to locate seeding plants which are more visible at that time of year.

Two landowner "field days" were held in the Roxburgh area this reporting period. A total of 220 plants were destroyed during the field days.

2.7 Rabbits

Rabbit inspections have continued over this period with the focus on Central Otago and the Otago Peninsula. Follow up and auditing of Rabbit Control Plans is also continuing.

There are a number of rabbit poison operations being undertaken this winter. ORC staff have been working with landowners and contractors providing guidance in regard to poisoning best practice.

K5 update summary:

- The Project Steering Group has made a decision to revise the timeframe for the release of RHDV1 K5 to March 2018.
- Key project risks, programme and communications plan have been revised to reflect the revised planned release timeframe of March 2018.
- ACVM (Agricultural Compounds and Veterinary Medicines) application - a deviations application has been prepared and submitted to ACVM.

- ACVM has requested further information in respect of the deviations sought and this has been submitted.
- ACVM is currently considering the application
- Unwanted organism application - this has been completed in draft and will be submitted alongside the final ACVM application.
- Planning is underway for release process and roll out.
- Stakeholder engagement is ongoing in line with confirmed strategy.
- Website resource is complete and ready to go live.

2.8 Rabbit complaint procedures

From time to time, Council receives complaints from land occupiers, regarding rabbit infestations. These are usually regarding rabbits on a neighbouring property but can occasionally be from someone complaining that they have "too many" rabbits on their own property.

Each complaint is logged in our incidents database. The complaint is then assigned to a compliance officer for follow up. The compliance officer will contact the complainant (in most cases) for further detail if required.

If a property inspection is required, it will be programmed in for inspection. The property in question will be inspected and assessed against the Maximum Allowable Limit identified in the Pest Management Plan for Otago 2009, which is set at 3 on the McLean Scale (referred to in the RPMP as MAL3). Neighbouring properties will also be assed at the same time, including the complainant's property if necessary.

If any of the properties are found to have rabbit numbers in excess of MAL3, a Rabbit control Property Plan (property plan) is requested of the land occupier, in accordance with the procedures set out in the RPMP.

In the property plan, the occupier must detail how they intend on reducing and maintaining rabbit numbers at or below MAL3 over the following 3 years.

Property plans are subsequently audited each year to ensure they have been implemented.

For those property occupiers that contact Council seeking advice on how to control rabbits, they are referred to a range of resources available relevant to their situation. For small peri-urban lifestyle blocks, there are options available to enable the occupiers to carry out their own control, or employ a contractor. For residential property occupiers, control options can be very limited. Often the best option is to install rabbit proof fences to prevent rabbits from entering their properties and causing a nuisance.

3. Marine Pollution response readiness

ORC has 28 staff trained in marine oil spill response, including some Port Otago Limited staff. To ensure a continual state of readiness, several training exercises are held each year. One such training exercise was held during this reporting period. A Maritime New Zealand staff member from MNZ's Marine Pollution Response Service in Auckland was on-site to assess the exercise and "revalidate" the staff involved. The exercise involved scenario planning, staff tasking, oiled wildlife recovery planning and

"on-water" equipment deployment. All staff involved were revalidated successfully. A number of other agencies attended and took part in the successful exercise including POL, Department of Conservation and the Yellow Eyed Penguin Trust.

Staff deploy an oil "skimmer" during a marine oil spill training exercise on the Otago harbour.

Rapid deployment and harbour booms are set in place during a marine oil spill training exercise on the Otago Harbour.

4. Recommendation

That this report is received.

Scott MacLean
Director Environmental Monitoring and Operations

Otago Regional Council

REPORT

Document Id: A1020572

Report Number: 2017/0947
Prepared For: Regulatory Committee
Prepared By: Environmental Services
Date: 25 June 2017

Subject: **Rabbit Serum Results 2017**

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1. Précis

Wild rabbit serum samples were collected across 10 sites in Otago during February and March 2017 as part of the Otago Regional Councils long term monitoring of Rabbit Haemorrhagic Disease Virus (RHDV). An additional 10 sites were sampled between December and January at sites where K5 had been expected to be released in the autumn 2017. Sera were tested for antibodies using a competition ELISA to determine immunity levels to RHDV within the wild rabbit population.

Those samples with detectable antibody levels at the 1:40 dilution or greater were considered to be immune to the virus. Samples where antibodies were not detected or only detected at the 1:10 dilution were not considered immune.

At two of the 10 long term monitoring sites where rabbit numbers were low and attaining sample sizes greater than 15 has been difficult, immunity rates were again low at 9% and 12%.

Overall immunity at our long term monitoring sites ranged from 9% to 87% across all sites in Otago, with the average immunity of all 10 sites 66%. This level of immunity was similar to the previous sampling of 2015, where immunity was 62%, and also similar to levels found in 2009 and 2011. The average immunity for a subset of eight of the 10 sites sampled that had consistently averaged between 70 and 76% between 2009 and 2015 peaked at 80% this year, and this is likely to be a more representative estimate of immunity levels across Otago.

At our pre-K5 release sampling sites immunity ranged between 3% and 90% with average immunity the same as to that found at our long term monitoring sites.

The average immunity to RHDV across Otago appears to be showing an increasing trend. However, rates of increase between sites remain highly variable.

2. Introduction

First discovered in China in 1983 and illegally introduced into New Zealand in 1997 (Czech variant), rabbit haemorrhagic disease virus (RHDV1) infects European rabbits (*Oryctolagus cunniculas*) causing the rapid development of acute rabbit haemorrhagic disease (RHD). There are now several variants of the virus, one of which the Korean variant (K5), is subject to an import application by ECan to have it introduced into New Zealand. Another virus, RHDV2, was discovered in Europe and has since become

established in Australia. Although it causes death in a similar way, RHDV2 is a separate virus rather than a variant of RHDV1. It is different from the RHDV1 virus in that it has the ability kill young rabbits 3-4 weeks old as well vaccinated rabbits and has been found to jump species and cause the death of European Brown hares in both Europe and Australia.

RHDV1 causes susceptible rabbits to suffer blood clotting within vital organs and usually die within 50hrs of contracting the disease. Rabbits under 10 weeks of age usually survive viral challenge and become immune for life. The offspring of these immune rabbits are protected by maternal antibodies for a time before becoming susceptible after a few months. Some rabbits may also become immune through exposure to a benign rabbit calici virus (RCV) which is also present in New Zealand. The K5 variant is purported to be able to overcome the immunity given by RCV and hence the interest in having it imported into NZ.

The Otago Regional Council has carried out long term monitoring of RHD since its outbreak in Otago in September 1997. Monitoring is carried out every two years across 10 permanent monitoring sites spread throughout Otago and aims to understand how well the virus is working in relation to rabbit immunity. This year because of the possibility of the release of RHDV1 K5, an additional 10 sites across Otago with high rabbit numbers were chosen and samples taken to establish baseline data before release of K5.

Sampling involves the taking of 30 rabbit serum samples as well as information on breeding status and rabbit age over the period mid-February to early March. Rabbit spotlight night counts were also carried out across the monitoring sites as part of a wider programme monitoring rabbit population trends across Otago.

3. Methods

Rabbits were shot at night under spotlight using either a .22 or 12G shotgun and blood extracted immediately using a 5ml syringe with 18gx40mm needle inserted into the heart. At least 2ml of blood is drawn off and transferred into a labelled 9ml vacutainer with z serum clot activator. Rabbit sex, breeding and body condition were recorded and an eyeball taken for aging.

Collected blood was centrifuged the following morning to separate the serum, which was then drawn off into labelled micro-titre tubes before being frozen. Serum samples were sent to the Hopkins Research Centre at Massey University to be tested for RHDV antibodies using the Cuppuci competitive ELISA test. As part of the test, serum is diluted at a rate of 1:10 and 1:40 to determine the level of antibodies within each sample. Those samples that were seropositive at 1:40 dilution were considered to be from rabbits immune to RHDV. Samples that were seropositive at the 1:10 dilution or seronegative were classed as not immune.

Eyeballs were fixed in 10% formalin for 2 weeks before the eye lens was extracted and dried at 85^0C for 72 hours. Eye lenses were then weighed and the age estimated using the formula of Dudzinski & Mykytowycz (1961). Age data, sex, body and breeding condition were matched with immunity status of the individual rabbit for analysis.

4. Results

A total of 255 samples from the long term monitoring sites were sent for testing. Immunity to RHDV over the 10 monitoring sites varied from 9 to 87% (Fig 3). The average immunity across all sites was 66% (Fig 1.) and this was not significantly different (t-test p>0.05) to that recorded in 2015 (62%).

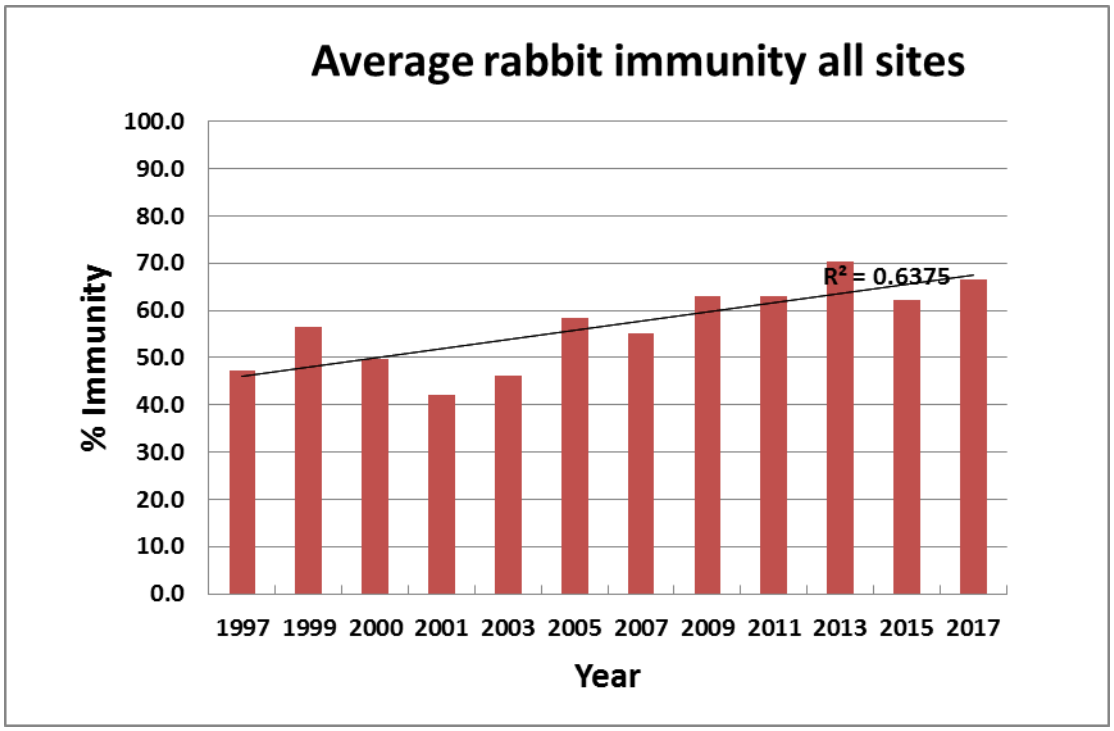

Fig 1. Average rabbit immunity by year across all 10 monitoring sites

Both the Tarras and Poolburn sites had the highest immunity of all sites at 87%, and this was a marked increase in immunity for these sites from previous years. In comparison at the two sites, Hillend and Manorburn, rabbit numbers were again very low, so only 11 and 8 rabbits were able to be obtained from each site. These sites had the lowest immunity of 9% and 12% respectively.

If the sites of Manorburn and Hillend are excluded from the analysis due to the statistically inadequate sample sizes, the average immunity for the remaining subset of 8 sites was higher at 80% (Fig 3.). This was not significantly different to the 72% average immunity for the 8 sites in the previous sampling in 2015 (t-test p>0.05) and similar to the preceding years of 2013 (76%), 2011 (72%) and 2009 (74%).

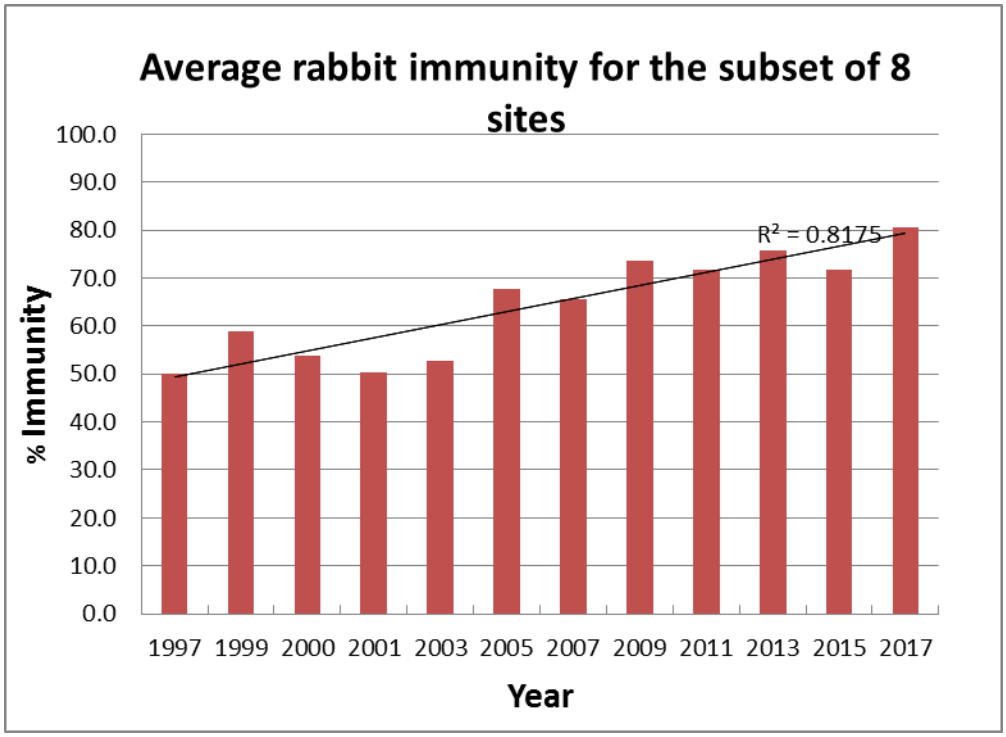

Fig 2. Average rabbit immunity by year for the 8 sites

Of the subset of 8 sites, Tarras 2 had the lowest immunity at 67% while the Ida valley and Tarras 1 had the highest immunity at 87%. Bannockburn 83% immunity, the Fruitlands sites 77% and 83% and Dunback 77% immunity. The long term trend for increasing immunity within the rabbit population continued across all sites, with considerable variation in the rates of increase between sites (Fig 3).

Demographic analysis of the population indicated the highest proportion of rabbits sampled was within the 17 to 30 week age bracket corresponding with the 2016 spring-summer cohort. The peak of seropositive rabbits was from 20-30 weeks indicating the virus was active over the spring-summer 2016/17 period. On the long term monitoring sites the median age of rabbits was 28 weeks and this is similar to the median age found in previous years. Across all 20 sites, 76% of seropositive rabbits were less than a year old.

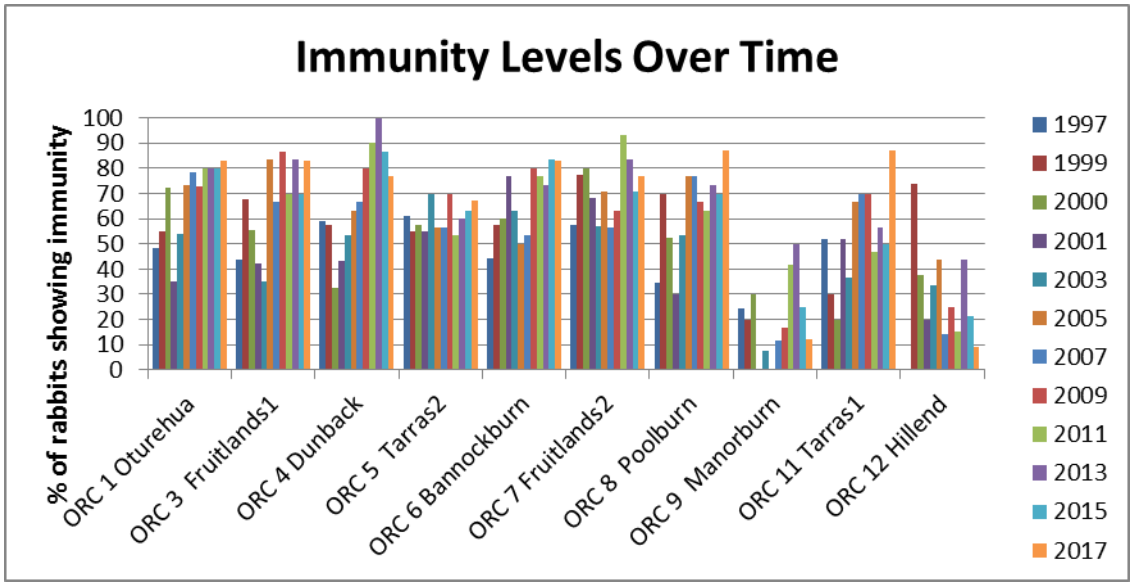

Fig 3. Average immunity levels at each site over time

At the K5 sites a total of 303 samples were taken across 10 sites. These sites showed immunity ranging from 3% at Moeraki, to 90% at both the Ida Valley and Arrowtown (Fig 4.). Average immunity across all sites was 66% and this was the same average immunity found for our long term monitoring sites. Again if the outliers of Moeraki and Island Block with low immunity are excluded the remaining eight sites give an average immunity of 80% which again concurs with what we found for the long term monitoring sites.

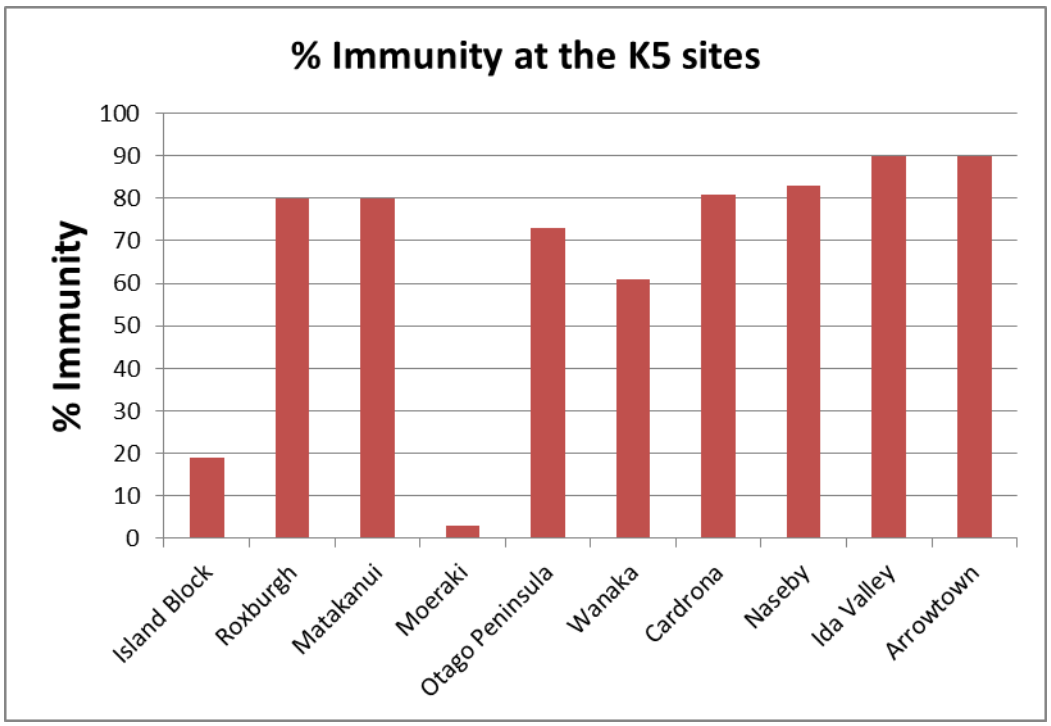

Fig 4. Percentage immunity across K5 sites

5. Discussion

Average rabbit immunity to RHDV1 across all long monitoring sites in Otago was higher (66%), although not significantly, than the previous sampling period in 2015. Similarly at the K5 sample sites the average immunity was also 66%. When the two long term monitoring sites that had low sample sizes and low immunity are excluded from the analysis, the average immunity across Otago is 80%. This higher level of immunity is likely to be more representative of immunity levels across Otago.

In comparison, Environment Canterbury have also shown average immunity levels in 2015 at their MacKenzie Basin study sites to be in the range of 60 to 70% (B. Glentworth, pers. comm.) and in Marlborough 64% (S. Sam, pers. comm.). Results for this year's sampling were not available at the time this report was prepared.

The very low immunity for two of the long term monitoring sites can perhaps be explained by the low numbers of rabbits at these sites and the inability of the virus to cause an epidemic, whereas at the K5 sites the low immunity is more difficult to explain given these sites were chosen due to their high rabbit numbers and epidemics should have easily become established. Possible hypotheses for the low immunity at the Moeraki site might be based on the environmental conditions, such the salt laden environment the rabbits were shot from, whereas environmental factors associated with the Island block site are more difficult to distinguish.

Although antibody testing provides a useful estimate of immunity at a given point in time for a rabbit population, it fails to adequately identify the causes of changes in immunity. Age data in our sampling allows us to exclude an increase in the number of older immune rabbits as a cause for an overall increase of immunity because the median age of immune rabbits has stayed more or less the same since sampling began in 1997 and 76% of seropositive rabbits were less than a year old.

Other possible scenarios for an increase in immunity are that the virus is becoming less virulent and so there are more survivors after each epidemic. This is possible, but virus isolated from infected rabbits from different parts of Otago by Landcare Research in 2014 and used to inoculate healthy sero-negative rabbits still shows a high virulence in many areas.

The presence of a benign rabbit calici virus (RCV) in NZ which causes immunity but not death may be also be a cause for increases of immunity. This has certainly been the case in Australia, and it is for this reason the K5 variant, which has the ability to overcome the protective effects of the benign virus, has been introduced into Australia. Rabbit population decreases of up to 42% have been reported since the release of K5 into Australia in April 2017.

In terms of what an increasing immunity means for rabbit populations in Otago, ORC spotlight rabbit counts have shown a cyclical trend in the rabbit population every 4-5 years since the arrival of RHDV. Certainly rabbit numbers appear to have shown an increase in peri-urban areas due to pest controllers being constrained by what techniques they can now use to control rabbits. This has come about though both changes in public perception and acceptance of traditional forms of rabbit control (shooting and

poisoning) as well as health and safety issues. It now seems that the only means of reducing rabbits in these areas is with a biological control.

However, the overall long term trend in rabbit numbers across wider Otago does not appear to be increasing with increasing immunity. Rabbit spotlight counts show rabbit abundance at less than 4 per spotlight km for much of Otago, and this is similar to Marlborough (<3 per spotlight km) and parts of Canterbury's MacKenzie Basin where rabbit numbers continue to remain low (<4 per spotlight km) despite little secondary control (B. Glentworth pers. comm.).

It is difficult to determine how much these trends in rabbit population might be attributed to traditional primary and secondary control measures. However, anecdotal evidence from landholders this year and through ORC compliance inspections indicate that in many areas rabbit numbers are being suppressed by RHD and the rates of increase are well below those seen pre-RHD.

Although RHD is both highly variable in nature and predictability as to where and when outbreaks may occur, evidence indicates that RHD will work best at those sites with very low rabbit numbers as rabbits at these sites generally show the least immunity.

Although RHD might not cause the spectacular knockdowns of rabbit populations we first saw when it arrived, it still appears to be regularly removing a proportion of the rabbit population in many areas complementing secondary control methods. Despite the apparent increase in immunity rabbit populations still remain well below the levels seen pre-RHD.

6. References

Duckworth, Janine. (2015). Kararehe Kino, 26; Vertebrate Pest Research. Landcare Research, Lincoln.
Dudzinski, M. L., & Mykytowycz, R. (1961). The eye lens as an indicator of age in the wild rabbit inAustralia. CSIRO Wildlife Research 6, 156-159.
Glentworth, Brent. Environment Canterbury, Timaru.
Sam, Shona. Marlborough District Council, Blenheim.

7. Recommendation

That this report be received.

Scott Maclean
Director Environmental Monitoring and Operations

REPORT

Document Id: A1019531

Report Number: 2017/0942
Prepared For: Regulatory Committee
Prepared By: Peter Kelliher, Legal Counsel
Date: 11 July 2017

Subject: **Resource Management Act 1991, Biosecurity Act 1993 and Building Act 2004 Enforcement Activities from 27 May 2017 to 30 June 2017**

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1. Précis

This report details Resource Management Act 1991, Biosecurity Act 1993 and Building Act 2004 enforcement activities undertaken by the Otago Regional Council during the period 27 May 2017 to 30 June 2017.

2. Resource Management Act 1991

a) Permitted Activity - Inspections

Table 1. Infringement Notices

Details	Period – 27 May 2017 to 30 June 2017	Total – from 1 July 2016
Discharge of contaminants to land in breach of a regional rule - effluent	0	22
Discharge of contaminants to land in breach of a regional rule - silage	0	1
TOTAL	0	23

Table 2. Authorised Legal Proceedings

Details	Period – 27 May 2017 to 30 June 2017	Total – from 1 July 2016
Discharge of contaminants to land in breach of a regional rule - effluent	0	5
TOTAL	0	5

Otago Regional Council

b) Complaint Response

Table 3. Infringement Notices

Details	Period – 27 May 2017 to 30 June 2017	Total – from 1 July 2016
Disturbing the bed of a wetland	0	1
Disturbing the bed of a river	1	3
Discharge of contaminants to land where it may enter water – petrol	0	2
Discharge of contaminants to land where it may enter water – sediment	0	3
Depositing sediment on the bed of a river	0	1
Discharge of contaminants to land where it may enter water – wastewater	0	7
TOTAL	1	17

Table 4. Authorised Legal Proceedings

Details	Period – 27 May 2017 to 30 June 2017	Total – from 1 July 2016
Discharge of contaminants to land in breach of a regional rule - effluent	0	3
Discharge of contaminants to land where it may enter water – sediment	0	1
Discharge of contaminants to land where it may enter water – sediment; and Damming of water in breach of a regional rule	0	1
Discharge of contaminants to air – burning prohibited materials	0	1
Discharge of contaminants to land where it may enter water – wastewater	1	2
Disturbing the bed of a river	0	1
TOTAL	1	9

Table 5. Abatement Notices

Details	Period – 27 May 2017 to 30 June 2017	Total – from 1 July 2016
To cease discharging a contaminant in breach of a regional rule	0	2
To remove rubbish, material and debris from the head of a gully	0	1
TOTAL	0	3

Otago Regional Council

3. Total Infringements issued and Authorised Legal Proceedings – 1 July 2016 – 30 June 2017

Table 6. Total Infringement Notices Issued (Inspections and Complaint Response)

Details	**Total – from 1 July 2016**
DAIRY EFFLUENT	
Discharge of contaminants to land in breach of a regional rule - effluent	22
OTHER	
Discharge of contaminants to land in breach of a regional rule - silage	1
Disturbing the bed of a wetland	1
Disturbing the bed of a river	3
Discharge of contaminants to land where it may enter water – petrol	2
Discharge of contaminants to land where it may enter water – sediment	3
Depositing sediment on the bed of a river	1
Discharge of contaminants to land where it may enter water – wastewater	7
TOTAL	40

Table 7. Total Authorised Proceedings (Inspections and Complaint Response)

Details	**Total – from 1 July 2016**
DAIRY EFFLUENT	
Discharge of contaminants to land in breach of a regional rule - effluent	8
OTHER	
Discharge of contaminants to land where it may enter water – sediment	1
Discharge of contaminants to land where it may enter water – sediment; and Damming of water in breach of a regional rule	1
Discharge of contaminants to air – burning prohibited materials	1
Discharge of contaminants to land where it may enter water – wastewater	2
Disturbing the bed of a river	1
TOTAL	14

4. Recommendation

That this report be noted.

Fraser McRae
Director Policy Planning and Resource Management

Otago Regional Council

REPORT

Document Id: A1021050

Report Number: 2017/0950
Prepared For: Regulatory Committee
Prepared By: Marian Weaver
Date: 18 July 2017

Subject: **Consents and Building Control Report to 30 June 2017, and 1 July 2017 to 14 July 2017**

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1. Consent Processing

1.1 Limited Notification

- Two applications for water permits went to limited notification in this period, both because written approval from an affected party could not be obtained.
- Kyeburn application for deemed permit replacements went to a hearing on 23 June. The hearing was closed on 17 July and the decision is pending.
- Groundwater take in North Otago; hearing was tentatively booked for 30 June but negotiations between parties continuing.

1.2 There are no publicly notified applications, appeals or objections at present.

1.3 The consent order on RM16.179 for Port Otago consents for dump sites off Otago peninsula was received from the Court and the consents have been issued.

2. Consent Statistics

Table 1. Consents Statistics Summary

	Lodged			Rejected	Decision Given		
Reporting Period	Consents	Variations			Consents	Variations	
		Regular	Water reporting date			Regular	Water reporting date
15/16 year totals	415	40	11	6	353	46	11
16/17 Year total	385	63	14	0	373	70	13
1/7 to 14/7 2017	12	3	0	0	12	8	0

All decisions on consents were given within RMA allowed timeframes.

Otago Regional Council

3. Consent Administration

Table 2. Consent Administration Statistics

Reporting Period	Transfers Received	Transfers Issued	S417 Certs Received	S417 Certs Issued
15/16 totals	**125**	**125**	**4**	**1**
16/17 totals	**263**	**242**	**9**	**12**
1/7-14/7 2017	4	4	0	0

4. Building Consent Authority (BCA) Administration

Table 3: Building Act Statistics

	Building Permits		Certificate of Acceptance		Code Compliance Certificate	
	received	**issued**	**received**	**issued**	**received**	**issued**
15/16 totals	6	6	2	10	2	4
16/17 totals	**3**	**3**	**2**	**2**	**3**	**2**
1/7-14/7 2017			1			

5. Public Enquiries

335 enquiries were received during the 6 week reporting period and appendix 1 shows 2581 over the last financial year.

Table 4. Public Enquiries Statistics

Period	Number of Enquiries
15/16 year total	**2495**
16/17 year to date	**2581**
1/7-14/7 2017	97

6. Recommendation

That this report is noted.

Fraser McRae
Director Policy Planning and Resource Management

Otago Regional Council

Appendix 1 Public Enquires 1 July 2016 – 30 June 2017

Total Number of Enquiries 2581

Enquiry Type	No.	% of Total
Current Consents	918	35.6 %
Mining Privileges	21	0.8 %
Other	234	9.1 %
Permitted Activities	877	34 %
Pre-application	254	9.8 %
Property Enquiries	207	8 %
Students	2	0.1 %
TLA Enquiries	7	0.3 %
Transfers	61	2.4 %

Enquiry Location	No.	% of Total
Central Otago District Council	750	29.1 %
Clutha District Council	149	5.8 %
Dunedin City Council	408	15.8 %
Outside Otago	30	1.2 %
Queenstown Lakes District Council	397	15.4 %
Throughout Otago	61	2.4 %
Unspecified	625	24.2 %
Waitaki District Council	161	6.2 %

Enquiry Method	No.	% of Total
Counter	89	3.4 %
Email	1597	61.9 %
Fax	2	0.1 %
Internet	12	0.5 %
Letter	10	0.4 %
Telephone	871	33.7 %

Otago Regional Council

Public Enquires 1 July to 14 July 2017

Total Number of Enquiries **97**

Enquiry Type	No.	% of Total
Current Consents	43	44.3 %
Mining Privileges	1	1 %
Other	4	4.1 %
Permitted Activities	30	30.9 %
Pre-application	11	11.3 %
Property Enquiries	8	8.2 %

Enquiry Location	No.	% of Total
Central Otago District Council	48	49.5 %
Dunedin City Council	9	9.3 %
Outside Otago	1	1 %
Queenstown Lakes District Council	20	20.6 %
Throughout Otago	2	2.1 %
Unspecified	14	14.4 %
Waitaki District Council	3	3.1 %

Enquiry Method	No.	% of Total
Counter	2	2.1 %
Email	69	71.1 %
Letter	1	1 %
Telephone	25	25.8 %

Otago Regional Council

REPORT

Document Id: A1021565

Report Number: 2017/0955
Prepared For: Regulatory Committee
Prepared By: Marian Weaver
Date: 19 July 2017

Subject: **Deemed Permit Replacement Progress - 26 May 2017 to 14 July 2017**

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1. Background

The Water Plan promotes the replacement of deemed permits and other water permits that expire in 2021 to be held by water management groups. This project implements the Plan policies and this report notes progress.

2. Promotion of Group Formation

A prime focus of the project is to meet with clusters of deemed permit holders based on catchments, in order to outline the steps required for deemed permit replacement and encouragement to form water management groups.

The following Meetings have been held or are planned:

Meetings held	
Crown Terrace	10th May
Coal Creek (Teviot)	10th May
Upper Manorburn	13th June

Upcoming meetings	
Statutory bodies	Early August
Planning consultants	Mid-August
Manuherikia tributaries	4 meetings October

There are no meetings with water users in August and September as this is the busiest time of the year for farmers with lambing and calving. Staff involved in this work will be on leave during this period. Meetings will resume in October.

Group Permit Applications

An application from the Kyeburn group of permit holders for the replacement of 34 permits was heard in late June and the decision is pending.

An application from 3 permit holders in the Eweburn catchment is being processed.

Objectives

Performance Measure 1:

Water taken under deemed permits are replaced by resource permits (water permits) by 2021, less any permits cancelled or surrendered.

Performance Target 2:

50% of the volume of water taken in Otago under consents is being managed by groups at 1 October 2021; 50% of water permits are managed through groups or water allocation committees.

All deemed permits are replaced or have applications lodged by 31 March 2021.

Progress on Objectives:

For reporting purposes a "group" includes existing irrigation companies and Territorial Authorities.

Table 1.Allocated Surface Water

	Total	**Groups**	**TLA**	**Other**	**%Held by Groups & TAs**
l/sec	322,154	69,508	5,685	246,961	23.3%
No. Permits	1,152	131	71	950	17.5%

No change since last report.

Including the impact of the water measuring regulations, (some cancellations and surrenders and consent replacement) the number of deemed surface water permits is slowly decreasing. In April 2014 there were 458, and on 19 July 2017 there were 382 deemed permits.

3. Recommendation

That this report is noted.

Fraser McRae
Director Policy Planning & Resource Management

OTAGO REGIONAL COUNCIL

Agenda for a meeting of the Finance and Corporate Committee to be held in the Council Chamber, 70 Stafford Street, Dunedin on Wednesday 2 August 2017, following the Regulatory Committee

Membership:
Cr Doug Brown (Chairperson)
Cr Andrew Noone (Deputy Chairperson)
Cr Graeme Bell
Cr Michael Deaker
Cr Carmen Hope
Cr Trevor Kempton
Cr Michael Laws
Cr Ella Lawton
Cr Sam Neill
Cr Gretchen Robertson
Cr Bryan Scott
Cr Stephen Woodhead

Apologies: Cr Noone

Leave of Absence: Cr Neill

In attendance:

Please note that there is an embargo on agenda items until 8:30am on Monday 31 July 2017

CONFIRMATION OF AGENDA

CONFLICT OF INTEREST

PUBLIC FORUM

MINUTES

The minutes of the meeting held on 14 June 2017, having been circulated, for adoption.

ACTIONS

Status report on the resolutions of the Finance & Corporate Committee

Report No.	Meeting	Resolution	Status
2017/0781 Grants, Legal Cases and Personal Grievances	3/5/17	*That Council receive a report on the effectiveness and outcomes of each grant, including the bulk water grants at the end of this financial year, 30 June 2017.*	OPEN (schedule for report to F&C Committee 13/9/17)

PART A- RECOMMENDATIONS

Item 1
2017/0951 **Port Otago Ltd – Statement of Corporate Intent**. DCS, 18/7/17 -

The report summaries the Board of Port Otago Limited's Draft Statement of Corporate Intent (SCI). The SCI is a requirement to provide to Council as shareholder for its comment and consideration.

The Draft Statement of Corporate Intent for the three years to June 2020 is circulated with the agenda.

Item 2
2017/0962 **Public Transport Update – July 2017** DCS, 25/07/17 -

This report provides staff response to the petition received and public forum comments made at Council's 28 June meeting. It further provides an update on the designation process for the Dunedin Central Bus Hub and the introduction of Public Wi-Fi on both the Dunedin and Wakatipu networks.

Item 3
2017/0957 **Director's Report – July 2017**. DCS, 19/07/17 -

The report provides the schedules of payments for May and June 2017 for Finance and Corporate Committee endorsement.

PART B – FOR NOTING

Item 4
2017/0945 **2018-2028 Long Term Plan (LTP) process and timetable** DCS, 14/07/17 -

The report outlines the 2018-2028 Long Term Plan (LTP) development process and the timetable for its completion.

Item 5
2017/0954 **Insurance Renewals 2017/18**. DCS, 21/07/17 -

The report outlines the renewal of Council's existing insurance policies for the period 30 June 2017 to 30 June 2018.

Item 6
2017/0936 **Preliminary Financial Report for the year ended 30 June 2017**. DCS, 27/07/17 -

The report provides preliminary information in respect of the overall Council finances for the twelve months ended 30 June 2017.

OTAGO REGIONAL COUNCIL

Minutes of a meeting of the Finance and Corporate Committee held in the Council Chamber, 70 Stafford Street, Dunedin on Wednesday 14 June 2017, commencing at 12:12pm

Membership:
Cr Doug Brown (Chairperson)
Cr Andrew Noone (Deputy Chairperson)
Cr Graeme Bell
Cr Michael Deaker
Cr Carmen Hope
Cr Trevor Kempton
Cr Michael Laws
Cr Sam Neill
Cr Gretchen Robertson
Cr Bryan Scott
Cr Stephen Woodhead

Apologies:
Cr Deaker
The apology was accepted.

In attendance:
Peter Bodeker (CEO)
Nick Donnelly (DCS)
Michele Poole (Acting DSHE)
Gavin Palmer (DEHS)
Scott MacLean (DEMO)
Fraser McRae (DPPRM)
Lauren McDonald (Committee Secretary)
Sharon Bodeker
Sean Geary
Janelle Houliston
Gerard Collings
Eleanor Ross

Members of the public welcomed.

CONFIRMATION OF AGENDA
Cr Brown advised that the paper in regard to Elected Member reimbursements had been withdrawn from the agenda and will be tabled at an upcoming committee round.

CONFLICT OF INTEREST
No conflicts of interest were advised.

PUBLIC FORUM
No public forum held.

Otago Regional Council

MINUTES

The minutes of the meeting held on 3 May 2017, having been circulated, were adopted on the motion of Crs Noone and Hope. ***Carried.***

ACTIONS

Status report on the resolutions of the Finance & Corporate Committee

Report No.	Meeting	Resolution	Status
2017/0769 Director's Report	3/5/17	*That a response be made to Mary McFarlane on matters raised at Public Forum on 22 March 2017, in regard to the impact of the Port Otago Ltd operation on the Port Chalmers community and environment.*	CLOSED Letter sent by Director Corporate Services - 23/5/17

PART A- RECOMMENDATIONS

Item 1
2017/0838 **2017/18 Annual Plan - Recommendations from the Hearing Committee**. DCS, 29/05/17

The report presented the Hearing Committee's recommendations in respect of the Draft Annual Plan. A summary of all submissions received to the 2017/18 Draft Annual Plan were circulated separately with the agenda.

Cr Brown summarised the Annual Plan hearing process and the covering report.

Discussion was held on the six key consultation topics.

Mr Bodeker responded to questions from councillors in regard to the rural water quality risk assessment programme. He advised a report would be presented to Council taking into consideration the Annual Plan submissions received.

Queenstown office
Discussion was held on the level of presence wanted for the Queenstown office, size and flexibility of the office space, level of services, staffing and its possible location.

Moved Cr Robertson
Seconded Cr Laws

That a full time presence and full time office be based in the Queenstown area with the CEO to establish staffing.

Motion Carried

New activities:

Additional comments made on sections:

3.7.2 - Lake restoration scoping work included:

- Review of priorities and principles around lake restoration in Otago.
- Review of legislative requirements
- "Full picture" look at priorities for the most at risk lakes.
- Consider additional Otago lakes for scoping work to be undertaken.

3.11 – Lagarosiphon
It was confirmed that the review of the Regional Plan: Pests would provide the opportunity for community input.

A suggestion was made that a regional rate rather than a sub-regional rate across CODC and QLDC for lagarosiphon control.

Moved Cr Bell
Seconded Cr Laws

That lagarosiphon control should be funded from a regional rate rather than on a sub-regional rate basis.

Motion Carried

The Hearing Panel members and staff were thanked for their efforts throughout the Annual Plan process.

Moved Cr Brown
Seconded Cr Woodhead

1. *That this report be received.*
2. *That the recommendations of the Hearing Committee within this report, and within the summary of submissions be endorsed.*
3. *That it is financially prudent to have an operating deficit in the 2017/18 financial year.*
4. *That the amendments to the Schedule of Fees and Charges be endorsed.*
5. *That the 2017/18 Annual Plan, incorporating the recommendations from the Hearing Committee be placed before the June Council meeting for adoption.*
6. *That the 2017/18 Rates Resolution be placed before the June Council meeting for adoption.*

Motion carried

Item 2

2017/0833 **Regional Public Transport Plan Otago 2014 Draft Addendum Concord – Green Island Community Link 2017**. Hearing Panel Chair, Cr Robertson, 29/05/17

The report provided a summary of the submissions received in response to the Concord – Green Island Community Link component of "The Otago Regional Council Regional Public Transport Plan 2014 draft Addendum: Wakatipu Basin and Green Island – Concord Link March 2017".

The report included an overview of the hearing panel deliberations and the panel's recommendation to adopt a draft addendum, as it related to the proposed Concord – Green Island Community Link with further amendments.

Three appendices to this report were circulated separately with the agenda, entitled:
Appendix 1 – Draft Addendum: Wakatipu Basin and Concord – Green Island Link
Appendix 2 – Summary of submissions received on the Green Island-Concord link
Appendix 3 – RPTP Addendum – Concord – Green Island Community Link– May 2017

Moved Cr Robertson
Seconded Cr Noone

a) *That Council receive this report.*

b) *That Council reinstate the Concord – Green Island community link as an extension to the Number 70 Brighton – Abbotsford bus service, Unit 5.*

c) *That Council adopt "The Otago Regional Council Regional Public Transport Plan 2014 Addendum: Concord – Green Island Community Link - May 2017" attached as Appendix 3.*

Motion carried

Item 3

2017/0859 **Arthur Street, Canongate, Russell Street Community Survey – Bus Service**. DCS, 09/06/17

The report provided a summary of the results of a survey undertaken of residents and ratepayers in the Canongate Russell Street and Arthur Street area about the reinstatement of that portion of the bus service.

Appendices included with the report:
Appendix 1 – Copy of survey form.
Appendix 2 – Waverley–Belleknowes pre 15 August 2016.
Appendix 3 – Waverley–Belleknowes current.
Appendix 4 – Waverley–Belleknowes post Bus Hub/Interchange.

Mr Collings, Manager Support Services responded to questions from councillors on the survey results and the total mobility scheme.

A request was made for staff to provide a summary of the comments received on the survey form.

Moved Cr Kempton
Seconded Cr Woodhead

That Council:
(*a) Receives this report.*
*(b) That Canongate, Russell Street and Arthur Street **are not** included in Route 19.*

Voting was held by division.
For: 6, Against: 4

Motion carried

The meeting adjourned 2:25pm and recommenced at 4:16pm.

Item 4
2017/0853 **Director's Report – June 2017**. DCS, 01/06/17

The report provided detail on the Dunstan Ward By-election and account payments for endorsement. Polling Day was confirmed as Tuesday, 20 June.

Moved Cr Hope
Seconded Cr Neill

a) That this report be received.
b) That the payments and investments summarised in the table above and detailed in the payment schedule, totalling $3,673,184.26, be endorsed.

Motion carried

PART B – FOR NOTING

Item 5
2017/0872 **Public Transport Update – June 2017** DCS, 09/06/17

The report provided Council with an update on the recent award of contracts for Unit 1, Unit 2, and the trial Ridge Runner services to Ritchies Transport Holdings Limited and Go Bus Transport Limited.

Moved Cr Kempton
Seconded Cr Scott

That Council receives this report.

Motion carried

Item 6
2017/0858 **Financial Report to 30 April 2017**. DCS, 08/06/17

The report provided information in respect of the overall Council finances for the ten months ended 30 April 2017.

Moved Cr Kempton
Seconded Cr Woodhead

That the report be received.

Motion carried

The meeting was declared closed at 4:20pm

Chairperson

Otago Regional Council

REPORT

Document Id: A1021316

Report No: 2017/0951
Prepared for: Finance and Corporate
Prepared by: Director Corporate Services
Date: 18 July 2017

Subject: **Port Otago - Statement of Corporate Intent**

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1. Précis

Each year the Board of Port Otago Limited is required to provide, for the comment of Council as shareholder, a Draft Statement of Corporate Intent (SCI). The Draft Statement of Corporate Intent for the three years to June 2020 has been received and is attached for Council's consideration.

2. Draft Statement of Corporate Intent

The Draft Statement of Corporate Intent sets out the objectives of the group, and the intended nature and scope of activities for the three-year period to 30 June 2020. The three-year scenario covered by the Draft Statement is reviewed annually on a rolling basis. The Deputy Chair and Chief Executive of Port Otago Limited will be in attendance to answer any questions.

The Statement of Corporate Intent process is the formal opportunity for Council, as 100% shareholder of the Port Otago Group, to have input into the intended activities of the company and its subsidiaries.

Key aspects of the objectives include:

a) Quality service.
b) Continuous customer service improvement.
c) Appropriate return on assets.
d) Recognition of environmental sensitivity of the Otago harbour and impact on local communities.
e) A safe and satisfying working environment.
f) Good corporate citizenship.
g) Communication.
h) Active property management.

Specific activities for the year ending 30 June 2018 include:

a) Actively review activities to focus on customer service and optimum utilisation of resources.
b) Actively promote a positive and safe working environment with continuous improvement in health and safety performance.
c) Actively seek shipping and port related business development opportunities.
d) Commence the 140 metre extension to the multi-purpose wharf at Port Chalmers.

e) Complete deepening the existing shipping channel to Port Chalmers to 14 metres.
f) Continue with the upgrade to the electrical power supply to the Port Chalmers container terminal, through the upgrade of substations on site.
g) Identify an appropriate location for the excavated material from Flagstaff Hill, including making material available for the Dunedin to Port Chalmers cycleway.
h) Take delivery of two new diesel electric straddle carriers and two new empty container handlers.
i) Develop a long term plan for the Dunedin slipway including the appropriate location and work required to meet best practice operating procedures.
j) Continue with the acoustic treatment programme within the Blue (60 dBA to 65 dBA) and Yellow (55 dBA to 60 dBA) noise zones at Port Chalmers. Actively progress, as approached by property owners, acoustic treatment applications for properties situated within the noise zones. Continue to measure and monitor noise and implement, where possible, new initiatives to minimise the effect of port noise on the community.
k) Work constructively with the community through the Port Environment/Noise Liaison Committee by continuing to update and implement the Port Environment Plans. Maintain the landscaped areas at Flagstaff Hill, Back Beach and Boiler Point.
l) In conjunction with the Port Environment/Noise Liaison Committee review the effectiveness of the Committee and identify opportunities to improve community engagement. As part of the review take into account changes required, if any, arising from the Dunedin City District Plan review.
m) Continue to work constructively with the community consultative groups including Manuwhenua Consultation Group, the Next Generation Technical Group, Project Consultative Group and Dredging Working Party. Where possible, implement recommendations arising from the work of the consultative groups.
n) Work with the community to complete a beach renourishment project at Te Rauone Beach.
o) Continue the ongoing programme of identifying business and environmental risks faced by the Group and review the effectiveness of policies and procedures in place to minimise and manage the risk.
p) Continuation of dredging in the harbour to facilitate safe access of ships to berths.
q) Continue to evaluate and take up opportunities for property investment, divestment and development to improve asset quality, values, rates of return and future portfolio growth potential.
r) Consider sales opportunities of Dunedin leasehold land, where a sale advances economic development within Dunedin city.
s) Complete an office/warehouse development at Oak Road, Auckland.
t) Continue with the development and realisation, through land sales, of the Te Rapa Gateway property development in Hamilton.
u) Complete construction and leasing of the six-unit industrial office/warehouses within the Te Rapa Gateway industrial development.
v) Complete construction and leasing of two 1,300m2 warehouses within the Te Rapa Gateway industrial development
w) Continue to work with other stakeholders to develop opportunities to facilitate the re-development of the Harbourside area in Dunedin.

Otago Regional Council

3. Performance Targets

Performance targets in relation to trade, container terminal productivity, environmental, health and safety, and financial measurement and performance are also set out in the document.

4. Shareholders' Funds

The expected level of shareholders' funds as at June 2018 is $443 million.

5. Recommendation

That the attached Draft Statement of Corporate Intent for Port Otago Limited and its subsidiaries for the three years to 30 June 2020 be endorsed.

Nick Donnelly
Director Corporate Services

Attachment: Port Otago Ltd- Draft Statement of Corporate Intent (SCI) I to 30 June 2020

PORT OTAGO LIMITED

Statement of Corporate Intent

for the three years to 30 June 2020

Port Otago Limited

Statement of Corporate Intent

This statement is presented by the Directors of Port Otago Limited in accordance with the requirements of Section 9 of the Port Companies Act 1988 and reflects the intentions of Port Otago Limited, its subsidiaries and associates ("the Group") for the three years of the Company's operations from July 2017 to June 2020.

(a) Objectives of the Group

1. To provide a quality service to cargo owners and shipping lines by way of a competitive choice in the supply chain.

2. To continue to review activities and services focusing on continuous customer service improvements and optimum utilisation of staff and resources to meet the demands of changing trade patterns.

3. To implement pricing and cost management strategies so that long term profits are earned to give shareholders an appropriate return on the port infrastructure and to provide funds for future development of the Group.

4. To recognise in all aspects of the Group's activities the environmental sensitivity of the Otago Harbour and the impact on local communities.

5. To provide staff with secure employment, a safe working environment, satisfying rewards and opportunities and training for increased responsibilities and advancement within the Group.

6. To conduct itself as a good corporate citizen consulting on matters of public interest.

7. To communicate the Company's plans and achievements to staff, shareholders and the wider community and to be receptive to constructive comment.

8. To manage the investment property portfolio through active acquisition, development and, at times, divestment to produce a diversified portfolio by property type and location. To manage investment property holdings to achieve the best long-term value gain while limiting exposure to undeveloped land.

(b) Nature and scope of activities

(I) The activities of the Company, its subsidiaries and associates are to comprise generally:

1. The efficient operation and promotion of the Port of Otago.

2. Provision of integrated container and cargo handling, warehousing and container depot services.

3. Provide pilotage and towage services to facilitate the safe navigation of commercial shipping requiring pilotage within the Otago Harbour and Fiordland.

4. Grow the investment property portfolio, evaluate and take up new investment and development opportunities to improve asset values, and rates of return.

5. Sales of leasehold land will be considered where a sale advances development and employment opportunities in Dunedin.

6. Evaluate opportunities considered likely to add value to, or enhance the competitiveness of, the Company.

7. Such other actions that may be required to meet the objectives of the Company recorded under item (a) above.

(II) The following table details the company's trading subsidiaries and joint ventures:

Name	**Percentage owned**	**Principal Activity**
Subsidiaries		
Chalmers Properties Limited	100%	Property investment
Te Rapa Gateway Limited	100%	Property investment
Fiordland Pilot Services Limited	100%	Shipping services
South Freight Limited	100%	Transport investment
Joint ventures and associates		
HarbourCold Dunedin	50%	Cold store operation
Icon Logistics Limited	50%	Transport company
Hamilton Porter Joint Venture	66.6%	Property investment

(III) The specific activities of the Group for the three years under review to June 2020 are expected to include the following:

Year ending June 2018

Port Otago – port operations

1.1 Actively review activities to focus on customer service and optimum utilisation of staff and resources to meet the demands of changing trade patterns. Review pricing to ensure service charges provide an appropriate return on the port infrastructure.

1.2 Actively promote a positive and safe working environment for staff through a team focus, providing opportunities for career advancement and emphasising safety in all activities. Seek continuous improvement in health and safety performance.

1.3 Actively seek shipping and port related business development opportunities. Continue to evaluate opportunities to expand the Group's warehousing, transport and logistics services.

1.4 Commence the 140 metre extension to the Multi-Purpose wharf at Port Chalmers.

1.5 Complete deepening the existing shipping channel to Port Chalmers to 14 metres.

1.6 Continue with the upgrade to the ~~electricial~~electrical power supply to the Port Chalmers container terminal, through the upgrade of substations on site.

1.7 Identify an appropriate location for the ~~evcavated~~excavated material from Flagstaff Hill, including making material available for the Dunedin to Port Chalmers cycleway. If possible, commence the excavation works and start the process to realign the road and rail line to Back Beach.

1.8 Take delivery of two new diesel electric straddle carriers and two new empty container handlers.

1.9 Develop a long term plan for the Dunedin slipway including the appropriate location and work required to meet best practice operating procedures.

1.10 Continue with the acoustic treatment programme within the Blue (60 dBA to 65 dBA) and Yellow (55 dBA to 60 dBA) noise zones at Port Chalmers. Actively progress, as approached by property owners, acoustic treatment applications for properties situated within the noise zones.

Continue to measure and monitor noise and implement, where possible, new initiatives to minimise the effect of port noise on the community.

1.11 Work constructively with the community through the Port Environment/Noise Liaison Committee by continuing to update and implement the Port Environment Plans. Maintain the landscaped areas at Flagstaff Hill, Back Beach and Boiler Point.

1.12 In conjunction with the Port Environment/Noise ~~Laision~~Liaison Committee review the effectiveness of the Committee and identify ~~opportunites~~opportunities to improve community engagement. As part of the review take into account changes required, if any, arising from the Dunedin City District Plan review.

1.13 Continue to work constructively with the community consultative groups including Manuwhenua Consultation Group, the Next Generation Technical Group, Project Consultative Group and Dredging Working Party. Where possible implement recommendations arising from the work of the consultative groups.

1.14 Work with the community to complete a beach renourishment project at Te Rauone Beach.

1.15 Continue the ongoing programme of identifying business and environmental risks faced by the Group and review the effectiveness of policies and procedures in place to minimise and manage the risk.

1.16 Continuation of dredging in the harbour to facilitate safe access of ships to berths.

Chalmers Properties Limited, subsidiary and joint ventures

1.17 Continue to evaluate and take up opportunities for property investment, divestment and development thereby improving the asset quality, values, rates of return and future portfolio growth potential.

1.18 In line with the Port Otago Group investment strategy consider sales opportunities of Dunedin leasehold land, where a sale advances economic development within Dunedin city.

1.19 Complete an office/warehouse development at Oak Road, Auckland.

1.20 Continue with the development and realisation, through land sales, of the Te Rapa Gateway property development in Hamilton.

1.21 Complete construction and leasing of the six unit industrial office/warehouses within the Te Rapa Gateway industrial development.

1.22 Complete construction and leasing of two 1,300m^2 warehouses within the Te Rapa Gateway industrial development.

1.23 Continue to work with other stakeholders to develop opportunities to facilitate the re-development of the Harbourside area in Dunedin.

Year ending June 2019

Port Otago – port operations

2.1 Review the port and port related activities to focus on customer service and optimum utilisation of resources to address changing trade patterns.

2.2 Continue to provide staff with a positive, safe and rewarding working environment.

2.3 Continue to seek new shipping opportunities and continue to evaluate opportunities to expand the Group's warehousing, transport and logistics services.

2.4 Conclude the Next Generation port development projects with the completion of the extension to the Multi-Purpose wharf and wharf sheetpiling.

2.5 Commence the Boiler Point fishing wharf at Port Chalmers.

2.6 Commence the upgrade of the yard and entrance at the South Freight container depot at Strathallan Street.

2.7 Commence the development of the container hub site at Dukes Road, Mosgiel.

2.8 Commence planning for the redevelopment of the Port Otago Head Office at Port Chalmers.

2.9 Subject to being able to conclude agreements to take the ~~evcavated~~excavated material from the Flagstaff Hill conclude the project to realign the road and rail line to Back Beach.

2.10 Continue ongoing programme of identifying business and environmental risks faced by the Group and review the effectiveness of policies and procedures in place to minimise and manage the risk.

2.11 Continue to work constructively with community consultative groups. Continue to review and refreshing, when required, community engagement. Continue to review the Noise Management Plan and where possible achieve further improvements to noise abatement procedures. Continue to monitor total port noise.

Chalmers Properties Limited, subsidiary and joint ventures

2.12 Continue to implement the strategy for enhancement of the property portfolio.

2.13 Continue to implement strategies for the sale or redevelopment of leasehold land in Dunedin.

2.14 Continue with the development and realisation, through land sales, of the Te Rapa Gateway property development in Hamilton.

2.15 Continue to work with other stakeholders to develop opportunities to facilitate the re-development of the Harbourside area in Dunedin.

Year ending June 2020

Port Otago – port operations

3.1 Continue to review the port, warehousing and related activities to focus on customer service and optimum utilisation of resources to address changing trade patterns.

3.2 Continue to provide staff with a positive, safe and rewarding working environment.

3.3 Continue to manage and monitor total port noise.

3.4 Complete the development of the container hub site at Dukes Road, Mosgiel.

3.5 Continue to redevelop the South Freight container depot at Strathallan Street, Dunedin.

3.6 Continue programme of business and environmental risk, evaluation and management.

3.7 Continue to work constructively with community consultative groups. Continue to review and refreshing, when required, community engagement. Continue to review the Noise Management Plan and where possible achieve further improvements to noise abatement procedures. Continue to monitor total port noise.

3.8 Continuation of dredging in the harbour to facilitate the safe access of ships to berths.

Chalmers Properties Limited, subsidiary and joint ventures

3.9 Continue to implement an active property investment and management strategy.

3.10 Continue to implement strategies for the sale or redevelopment of leasehold land in Dunedin.

3.11 Continue with the development and realisation, through land sales, of the Te Rapa Gateway property development in Hamilton.

3.12 Continue to work with other stakeholders to develop opportunities to facilitate the re-development of the Harbourside area in Dunedin.

(c) Ratio of Consolidated Equity to Total Assets

Financial Year ending 30 June	Actual or estimate	Consolidated Shareholders funds	Total assets	Ratio of Shareholders Funds to Total Assets
2016	Actual	$402m	$497m	81%
2017	Estimate	$432m	$535m	81%
2018	Estimate	$443m	$554m	80%
2019	Estimate	$450m	$563m	80%
2020	Estimate	$457m	$571m	80%

Equity comprises the issued and paid up capital together with retained earnings, the property revaluation reserve and any other reserves. Total assets represent all assets of the Group determined in accordance with the accounting policies as set out in the 2017 Annual Report.

The preferred range over time for the equity ratio is between 70% and 85%. The timing of capital expenditure, the income yields on Company investments and prevailing market conditions may mean it is prudent for the Company to operate outside the preferred equity ratio range for periods of time.

(d) Accounting Policies

The Company's accounting policies are detailed in the 2017 Annual Report which is available from the Company's website located at http://www.portotago.co.nz

(e) Performance Targets

The performance of the Company in relation to its objectives may be judged by comparing actual results with budgeted targets of the following nature:

Trade
Port Otago's 2018 financial year budgeted container throughput is 180,000 twenty foot equivalent units (TEU) and the budgeted conventional cargo throughput is 1.6 million tonnes.

The expected number of vessel arrivals in the year to 30 June 2018 is 487 vessels.

Container terminal productivity
The Company aims to achieve gross container crane productivity for the year ending 30 June 2018 of 27.5 lifts per crane hour.

Environmental	**Performance target**
Incidents leading to pollution of Harbour	- Nil
Full compliance with all resource consent conditions	- Nil breaches of resource consent conditions

Health & Safety
The Company has a Zero Harm strategy in place and it endeavours to be an industry leader in setting new standards of safety. With the involvement of every team member it is planned, through a process of continuous improvement, to progressively improve health and safety performance.
The performance measures to be used are:
- maintain Workplace Safety Management Practice (WSMP) tertiary status;
- maintain compliance with the Australian and New Zealand health and safety standard AS/NZS 4804:2001

The Total Injury Frequency Rate (TIFR) target for the year to June 2018 is 9 for every 1 million work hours. This compares to a TIFR of 15.6 for every 1 million work hours for the year to 30 June 2017.

Financial measurement and performance
The performance measures to be used are:

Earnings before interest and taxation (EBIT) return on average total assets.

Return on equity	-	Profit, including unrealised fair value movements, divided by average shareholders' equity.
Equity ratio	-	The percentage that shareholders' funds represent of total assets with the target range between 70% and 85%.
Debt servicing ratio	-	The number of times interest is covered by the profit before tax, interest, unrealised fair value movements and unrealised impairment charges. Unrealised fair value movements include investment property revaluations, changes in the value of interest rate swaps and changes in the value of foreign exchange contracts.

The budgeted targets for Port Operations, Chalmers Properties Ltd (excluding property revaluations) and the Port Otago Group for the year ending 30 June 2018 are:

	Port Operations
EBIT return on assets	6.5%
Return on equity	9.2%
Equity ratio at 30 June 2018	78%
Debt servicing ratio	12 times

	Chalmers Properties Ltd
EBIT return on assets	4.9%
Return on equity	3.7%
Equity ratio at 30 June 2018	82%
Debt servicing ratio	6 times
(Property revaluations not included)	

	Port Otago Group
EBIT return on assets	5.6%
Return on equity	4.5%
Equity ratio at 30 June 2018	80%
Debt servicing ratio	8 times

(f) Dividend Policy

1. The return to the shareholders from shares held in Port Otago Limited will include dividends from trading profits earned.

2. The intention is to maintain ordinary dividends at least at $7.5 million, increasing over time to within the range of 50% to 70% of the group's normalised operating surplus after tax.

3. Subject to meeting the required solvency tests, pay a special dividend of $1.5 million for the year ended 30 June 2018 and $0.75 million for the year ended 30 June 2019.

(g) Information for Shareholders

Sufficient information will be made available to the Company's shareholders so that they may properly assess the value of their investment in the Company, in particular any change in value.

An Interim Report covering the six months to 31 December of each year shall be provided by 28 February. The report shall include a commentary on activities and unaudited financial statements for the period.

The Annual Report for each year ending 30 June shall be provided by 30 September of each year. The annual report shall include a commentary on activities, a comparison with performance targets set out in the Statement of Corporate Intent and audited financial statements for the year.

In conjunction with the Interim and Annual Reports the Company shall report to the shareholder on progress with implementing the Objectives and the Specific Activities set out in the Statement of Corporate Intent.

(h) Procedures for business acquisition

The Group will only invest in shares of another company or business if the acquisition will produce shareholder added value over the longer term.

If any Company within the Group intends to subscribe for or otherwise acquire a financial interest in any company or business where the cost of that interest or acquisition exceeds 10% of Group shareholders funds it will have prior consultation with its shareholders.

(i) Activities subject to Compensation

The Company will provide the following services for the Otago Regional Council for which the company expects to be remunerated or reimbursed by the Regional Council:

a) Assistance in matters of good navigation and safety on Otago Harbour.
b) Provision of such services as may be requested by the Regional Council.

REPORT

Document Id: A1022489

Report No: 2017/0962
Prepared for: Finance and Corporate
Prepared by: Director Corporate Services
Date: 25 July 2017

Subject: **Public Transport Update - July 2017**

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1. Précis

This report provides staff response to the petition received and public forum comments made at Council's 28 June meeting. It further provides an update on designation process for the Dunedin Central Bus Hub which is currently being publicly notified by the DCC.

The report confirms the introduction of Public Wi-Fi on both the Dunedin and Wakatipu networks by the end of this calendar year.

An update on the tender process for the Wakatipu Services confirms a targeted implementation date of 20 November 2017, and the Finance and Corporate Committee are asked to authorise the Chief Executive to award the necessary Public Transport service contracts.

2. Bus Stop Petition

At the 28 June Council meeting, BusGo presented a petition seeking bus stops be placed in the vicinity of the Public Library and Bracken Court (Lower Moray Place) (appendix 1).

Public Library

Upper Moray Place (in the vicinity of the Library) is currently not serviced by the Public Transport Network. This section of Moray Place will remain without a service once the Bus Hub becomes operational. With the proposed location of the Hub in Great King Street, it is approximately a 250m walk to the Library.

Bracken Court

With the location of the Bus Hub in Great King Street, bus services will no longer access Princes and George Streets between Moray Place South and Saint Andrew Street. This will result in approximately 540m between the Princes Street/Dowling Street stop and Great King Street.

The road layout, proximity to pedestrian crossings and number of vehicle entrances, make it difficult to provide for stops in this location. The matter will be raised with DCC for consideration.

During the presentation, BusGo referred to Council's policy regarding bus stop placing contained in the Regional Public Transport Plan which states;

"Policy 18
(a) In built-up urban areas, spacing between bus stops of 300 and 400m are desirable in most situations, certainly no more than 500m apart and no less than 200m apart."

The policy sets guidance for staff for network planning as new routes are introduced, and work is undertaken in discussion with DCC regarding the placement of new stops and infrastructure changes. BusGo specifically referred to the distance between the Rattray/Arthur Street stops and Princes Street. This particular instance is known to staff. Prior to the petition regarding the Canongate extension, staff were actively engaged in the required consultation process with affected residents for the placement of stops in the vicinity of the Rattray Street/Smith Street intersection. This was suspended until Council resolved its position with regard to the Belleknowes Service. The process will now be reactivated.

3. Public Forum Council 28 June

At the June Council meeting, two members of the public addressed Council with concerns regarding the provision of public transport in Dunedin as follows;

Lynne Hill

Council Meeting extract – *"Mrs Lynne Hill requested that Council reassess decisions made about public transport against ORC mission statement and objectives. She advised after discussion and feedback from other bus users that she did not believe decisions about bus route changes and bus stop removals were being achieved in a transparent manner, that they were being imposed at short notice and without adequate consultation.*

She felt the public transport services did not take into account the social concerns, such as the change of bus routes and bus stops adversely affecting the elderly, those with limited mobility and passengers with young children. Passengers using strollers and walking frames etc. were being disadvantaged as not all of the "kneeling buses" lowered to the level of the pavement, impacting passengers with limited mobility. She requested that Council reconsider the route changes in relation to social needs rather than just focussing on faster and more direct routes. She highlighted that the elderly community were an increasing demographic, needing the bus services most and that making buses more difficult to reach and to get on and off, was not looking to the future."

Staff response: Council has consulted on its public transport proposals in a full and transparent manner. Council is now implementing the programme of improvements adopted in the Regional Public Transport Plan (RPTP). The revised network and improvement programme is seeking to improve access to the services and accessibility of all aspects of public transport. For example, in adopting NZTA's standard "Requirements for Urban Buses" (RUB), Council has adopted the accepted standard for kneeling buses, wheelchair accessibility, priority seating for those with disabilities, and standards for the visually impaired. All buses are assessed against RUB prior to being allowed to enter service on the network. The new buses that have entered the fleet are compliant with the NZTA standard, and varying kerb heights throughout the city are a factor in the ability of buses to meet the kerb.

Ann McWhirter

Council Meeting extract – "*Ann McWhirter spoke to the Bus Route No. 19 – Belleknowes section. She advised she wished to remind decision-makers of the wider goals and policies underpinning the Regional Public Transport Plan.*

Ms McWhirter referenced parts of the Otago Southland Land Transport Plan 2015-2021 (OSLTP) in regard to the main aims of the transport system: to meet social needs; that access in the network is in a manner that is convenient and affordable to funders and users; provides infrastructure which is affordable and appropriate to function, and that transport planning takes a journey-based, customer-focussed approach.

She requested that Council apply the principles and strategies of the OSLTP to the City Rise area by amending the No. 19 service on the city route so that it would turn left at the Harvey Norman site intersection (re-joining the Smith Street route) and on the return journey, to continue up Maclaggan Street to Canongate. She believed the re-inclusion could occur without major expenditure and could also proceed as a trial route until introduction of the Bus Hub. She concluded by advising that the City Rise area could cope without bus shelters rather than no service."

Staff Response: Staff consider that the RPTP, the Dunedin network improvement programme, and the Total Mobility Scheme are consistent with the aims and policies of the OSLTP. The OSLTP through its aims, objectives and policies consider the network as a whole, including all transport modes and commercial and subsidised transport providers. Council's programme of improvements have already seen a significant improvement in the quality, accessibility, and age of the fleet.

In implementing the Bus Hub and new infrastructure, technology and printed media accessibility is a key focus. In adopting the new network, Council have taken an entire journey approach including consideration of all bus users, which also includes other modes of travel including walking and cycling.

4. Bus Hub

The designation process for the Bus Hub has been publicly notified by the DCC with submissions closing with the City on 18 August 2017. DCC will advise its hearing schedule in due course. Once submissions have been heard by the DCC, it will make recommendation to Council for ORC to make its decision.

5. Wi-Fi

Staff are finalising details with the bus operators regarding implementation of public Wi-Fi on all bus services on the Dunedin network. It is expected that this will be operational late September early October of this year. Wi-Fi will also be available on the new Wakatipu network.

6. Wakatipu

Tenders are currently being called for Units 6 and 7 of the Wakatipu Public Transport network. Unit 7 is by way of an open tender. The Unit 6 is procured by way of a structured procurement process (approved and observed by NZTA), involving a negotiated contract (as required by the Land Transport Management Act) with the incumbent operator.

Funding for the new services is included within the 2017/18 Annual Plan.

To meet the targeted implementation date of 20 November 2017, a timely tender award is required. As such, Council are asked to delegate the Chief Executive authority to award the necessary contracts for Unit 6 and Unit 7 in consultation with the Chairperson and the Chair of the Finance and Corporate Committee.

7. Recommendation

That the Finance and Corporate Committee;

a. Receives this report.

b. Authorise the Chief Executive, in consultation with the Chairperson and the Chair of the Finance and Corporate Committee, to award the necessary Public Transport service contracts for the Wakatipu Public Transport Network being Unit 6 and Unit 7.

Nick Donnelly
Director Corporate Services

Appendix 1 - Bus Go petition

To the Otago Regional Council, we the undersigned bus users ask that you please...

Name and address

1 Alison Lewis 44 Talen Rd Dun. 9010.

2 Grace Cameron-Taylor gracecameontaylor@gmail.com

3 Molly Roffey mfroffey@gmail.com

4 Merilyn Power colinmerilyn@xtra.co.nz

5 Friederike Schmalte 15 Reservoir Rd Warrington

6 S.C. White 3 Somerset Dunedin

7 Kay Murray 45 Norman St DN.

8 Robert Barzinger 91 Melville St DN Don't contact me

9 Dorothy Taylor 140A Kenmure Rd Dn

10 A. Gardiner 10a Queen St Dn..

11 G McWhirter 21 Carnarvon St DN

12 Marion Rae. 49 Signal Hill Rd Dn.

13 Shirley McFadyen. 135 Moturata Rd. Taieri Mouth

14 Rosemary Kelpe. 34b Bay View Rd Dn.

15 Mary Cumming 19/4 Gilmore St. Dunedin

Name and address

16 Geoff Thompson 2 Raleigh St Dun

17 G Fitzgerald.

18 [illegible] Andy Concord

19 [illegible] Concord

20 [illegible] Kaikorai

21 Jay Alderson-Muir Roslyn

22 A Howel. SN DN

23 [illegible] Mornington 9016

24 [illegible] View

25 Malik Jeana - St Kilda

26 Rhina Chan - Bay View Road, South Dunedin

27 Wayne Johnson - Ocean Grove.

28 Kaylee Halfwaybush

29 Angus Gallagher NEV

30 Phil Greenwood Portobello

To the Otago Regional Council, we the undersigned bus users ask that you please...

Name and address

1 Damian Smith
6 Northumberland St

2 Mal Sayers
100 Easther Cres
Dn

3 ANALIZA OBERT
CENTRAL CITY

4 Sue Smaill
19 Derwent St
Helensburgh

5 Sen Pupualii
32 Glen Rd Whiringatoa

6 Hanin Taha
Brockville

7 ~~Py~~ Dorje-Dempster
Halfway bush

8 Quentin Still — Waikouaiti

9 Tj Rauwiri — Waikouaiti.

10 Zeneka McNeill waitati

11 Whaipuro Hirewini Horetane

12 Joseph Hancock

13 Josh Dick

14 Tawhiao

15

Name and address

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To the Otago Regional Council, we the undersigned bus users ask that you please...

Name and address

1 Danielle Halfway bush
2 Phillip Pon central
3 Alice Carlton hill
4 W Kenney "N.E.V.
5 Txadd Brockville
6 Chris McFein
7 Dale Beaton mornington
8 Blake duggan Concord
9 [illegible] Wakari
10 Becca Wakari
11 Peter Dowden, Woodhaugh
12 Telagi Papau Shiel Hill
13
14
15

Name and address

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To the Otago Regional Council, we the undersigned bus users ask that you please...

Name and address

1 Gaylene Boecie Halfway Bush.
2 Keegan Gray
Brockville
3 Mitchell Barnes
Helensburgh
4 Jen Hannagan Wakari
R. [illegible] Caversham
5 H. Cumming Wakari
6 Mary Cumming Wakari
7 Kelsey Bradshaw Halfway Bush
8 Murray Mein Burnside 9018
9 Nigel Benson, South Dn.
10 ~~K~~ [illegible], Maryhill
11 [illegible] Maryhill
12 D. Makaore. Musselburgh
13 [illegible] (Andersons Bay)
14
15 H Tupi [illegible] Waverley

Name and address

16 Shandelle Taylor
NEV.
17 [illegible] Fairfield
18 W.H. Livingstone Corstorphine
19 Clive McNeill Balaclava.
20 Barbie McIlroy Kaikorai
21 P. [illegible] WAKARI
22 Mina (North East Valley)
23 Derek Hoogwey Brockville
24 Lucy Livingston Wakari
25 Tom Hall City Rise
26 Ken Reichelt [signature] Louisiana, USA
27 [illegible] (NEV)
28 Francis [illegible] Caversham
29 Michael [illegible] St Clair
30 Jarlin [illegible]

To the Otago Regional Council, we the undersigned bus users ask that you please...

Name and address

1 Jocelyn Moran 17 Forbury Rd.
2 S Mason 48 P Ravelston St, Tainui
3 MIKE MULDOONEY 3/63 SERPENTINE AVE
4 Owen Morris 52 Allenby Ave
5 Ron Cairns 99 [illegible]
6 Madeleine Broadstock 38 Columba Ave
7 Jeremy Belcher, Dunedin.
8 Linda Clapham, NEV, Dn
9 Darlen McKay Kenmure Dn.
10 Ruby Kyle Mornington
11 Sophia McKenzie Saint Clair
12 [illegible] Dunedin
13 Rebecca Lawrence Woodhaugh
14 HANNAH PHILLIPS DUNEDIN
15 Mikal NEV.

Name and address

16 [illegible] NE Valley
17 [illegible] North east valley
18 [illegible] South Dunedin
19 [illegible] North Dunedin
20 KIM SENG TAY ROSLYN
21 Em Davidson Caversham
22 [illegible] (Sth Dunedin)
23 Josh Lee (mornington)
24 Donald Scott - Shorstaphire
25 Joe Kussel [illegible] Belleknowes
26 R. Stephen Lookout Point.
27 Sofia Amer St Clair.
28 Sam Donkin Balaclava
29 Kathleen Laing Mornington
30 Maria Shera Halfway Bush

To the Otago Regional Council, we the undersigned bus users ask that you please...

Name and address

1 Peter Williams 322 Chain Hills Road RD1. Dunedin Peter F.D. [signature].
2 Matthew Farmer 24 Burke St Age
3 Tianna Farmer 24 Burke St
4 Tina Elkins Brockville
5 Courtney Elkins Brockville
6 David Foote Mornington
7 Mihaela Cale St Clair
8 Sam Cairns Halfway Bush
9 Alan O'Hara Glenleith
10 Ricky Jellyman DN CITY
11 W. Nash Corstorphine
12 Johnathon Kay Brockville
13 Woman 2 Stenton Place
14 J Fraser Brockville Sarah Fraser
15 Geoffrey White South Dunedin

Name and address

16 [signature] 121 Stafford St
17 Sophie 84 Spottiswoode
18 M Blackley 41 Littlebourne Rd Roslyn.
19 D Alla 77 Dowling St DN
20 H Walker St Kilda
21 V Wall St Kilda
22 Susan Pryde Kaikorai
23 [signature] Mount Cargill
24 [signature] City Centre
25 [signature] Pine Hill
26 [signature] St Clair
27 [signature] Andy Bay
28 Mohammed Matter Kew
29 Mohammed ALHALLAQ High st
30 Lama Tarawia Kew

REPORT

Document Id: A1021580

Report No: 2017/0957
Prepared for: Finance and Corporate
Prepared by: Director Corporate Services
Date: 19 July 2017

Subject: **Director Report - July 2017**

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1. Account Payments

Schedules of payments made are referred to the Finance and Corporate Committee for endorsement. The financial commitments and payment authorisation are made in accordance with Council's financial delegations and internal control procedures.

Payment Category	May 2017	June 2017	TOTAL
Trade payments	3,187,961.57	4,702,890.49	7,890,852.06
Payroll	761,912.63	748,118.00	1,510,030.63
Investments	1,000,000.00	1,400,000.00	2,400,000.00
Total	**4,949,874.20**	**6,851,008.49**	**11,800,882.69**

2. Recommendations

2.1 That this report be received.

2.2 That the payments and investments summarised in the table above and detailed in the payment schedule, totalling $11,800,882.69, be endorsed.

Nick Donnelly
Director Corporate Services

Otago Regional Council

REPORT

Document Id: A1020375

Report No: 2017/0945
Prepared for: Finance and Corporate
Prepared by: Manager Projects
Date: 14 July 2017

Subject: **Long Term Plan Process and Timetable**

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1. Précis

Planning is underway for the development of the 2018-28 Long Term Plan (LTP). The purpose of this paper is to inform the Finance and Corporate Committee of how the LTP will be developed and the timetable for its completion. Note is made that the LTP and its consultation document will be audited.

2. Background

Under the Local Government Act (LGA), all local authorities are required to produce a 10 year long term plan every three years. The next LTP will cover the period 2018 through to 2028, it must be adopted by 30 June 2018, and will commence on 1 July 2018.

3. Content of the LTP

Part 1 of Schedule 10 of the LTP sets out the information required to be included in an LTP. In summary, the LTP must contain the following information:

- ***Community outcomes*** - describe the community outcomes for the region.
- ***Groups of activities*** – identify activities within groups of activities, provide rationale for delivery of those activities, and any significant negative effects an activity may have on the community.
- ***Capital expenditure*** – identify expenditure budgeted to meet additional demand, improve the level of service, and replace existing assets.
- ***Statement of service performance*** – for each group of activities, identify levels of service, measures and performance targets, and any intended level of change to levels of service provided for in the year before the LTP commences.
- ***Funding impact statements*** – for each group of activities, and for council as a whole, showing expenditure and sources of funding.
- ***Development of Maori capacity to contribute to decision making processes*** – set out steps to foster this development.
- ***Strategies and policies*** – as follows:
    - Financial strategy.
    - Infrastructure strategy – covering a 30 year period.
    - Revenue and financing policy.
    - Significance and engagement policy – a summary of this policy.
- ***Financial statements*** – forecast for the 10 year period, and previous year comparisons.
- ***Statement regarding balancing of the budget*** – if a deficit is proposed for Council's operating budget for any year of the plan, a statement for reasons and implications.

- ***Rating base information*** – projected number of rating units.
- ***Reserve funds*** – purpose of funds, and movements over the 10 year period.
- ***Significant forecasting assumptions*** – including life cycle of significant assets sources of funds for future replacement of those assets, and the level of uncertainty around the assumptions.

4. Consultation

Section 93A of the LGA requires Council to use the special consultative procedure to adopt the LTP. It also requires the preparation of a consultation document, and the draft LTP must not be used as an alternative.

The consultation document must provide a fair representation of matters proposed in the LTP, describing issues and options for each issue.

5. LTP Process

Council's strategic plan provides the direction for Council activities over the next 10 years. It will be the key driver for the preparation of the LTP.

The Executive Leadership Team (ELT) has met to give consideration to the LTP, and its development, and key process points identified included the following:

- Council involvement throughout the process is critical.
- For managers to plan their work programmes, clear direction that comes out of the strategic direction needs to be given from the executive.
- Staff to engage with the territorial authorities about their significant assumptions such as population growth and how they may affect ORC's activities, and any other matters for consideration over the 10 year period of the LTP.
- Examine ORC activities, their purpose and their scope, and the connectivity between projects.

5.1 Community Outcomes

We are proposing to undertake a review of Council's community outcomes, giving consideration to the outcomes presented in the Regional Policy Statement, and the work undertaken previously. We consider that the current outcomes could be presented in a more community focused manner. Recommendations will be taken to a Council workshop.

5.2 Activities and Projects

Developing the work programme for the next 10 years will involve the following steps:

- Meeting with managers to provide direction by ELT.
- Each activity will be assigned a director sponsor, and a project owner (director or manager).
- Project meetings will be held, e.g., water quality implementation, where all managers involved in the delivery of this will meet, along with the director sponsor, to consider purpose, scope, what needs to be delivered, how, and when.
- Proposals will be checked for alignment with the strategic plan.
- Assumptions will be documented.
- Identification of resources needed (hours, skill sets etc.) to deliver the work programme, along with other estimated expenses will be prepared.
- The Revenue Policy will be applied to determine how expenditure will be funded.
- Council workshops will be held to discuss proposals, and confirm direction.

5.3 Strategies and Policies

Reviewing and updating Council's strategies and policies is a piece of work, separate from the activity/project planning exercise, and will be undertaken at an early stage in the process. Recommendations will be presented to councillors at workshops to discuss proposals and confirm direction.

5.4 Fees and Charges

A review of compliance fees is being proposed, to ensure the adequacy and appropriateness of our charges. In addition, a full review of council's schedule of fees charges will be undertaken to ensure charges comply with the revenue policy.

6. Timetable

Set out below is the timetable for completing the development of the LTP and consultation document.

Task	Involvement	Date	Workshop/Council/ Committees	Date
1. Directors to meet with managers to guide preparation of activities and projects.	ELT Managers	3 July 2017		
	Council		2. Council review of strategic plan	11-12 July 2017
			3. Council workshop on the strategic plan. Brainstorm high level strategic priority activities.	2 August 2017
4. Engagement with territorial authorities on significant assumptions etc.	CE, DCS DSE Manager Projects	July to September 2017		
5. Activity / project meetings and estimates preparation	Director sponsors Managers	August to early October 2017		
			6. Council workshop on • Activity framework – clarity on key issues • significant assumptions	13 Sept 2017
7. Review community outcomes wording	DSE Manager Projects	August / Sept 2017		
			8. Council workshop on introduction to the financial strategy, and community outcomes	27 Sept 2017

9. Review of Revenue Policy	Manager Projects	August / Sept 2017	10. Council workshop on Revenue Policy	18 October 2017
11. ELT review of activities and projects	ELT	16 October 2017	12. Council workshop on activities and projects	1 Nov 2017
13. Initial audit visit on progress	Deloitte	November 2017*		
			14. Council workshop on activities and estimates	29 Nov 2017
15. Review of fees and charges	Manager Projects Management Accountant	October / November 2017	16. Council workshop on fees and charges	13 Dec 2017
17. Preparation of the Infrastructure Strategy	Manager Engineering	November 2017	18. Council workshop on the Infrastructure Strategy	13 Dec 2017
19. Review of Financial Strategy	Manager Projects	January 2018	20. Council workshop on Financial Strategy	31 January 2018*
21. Develop a communications & engagement plan	DSE Snr Strategic Coms & Engagement Advisor	February 2018	22. Council workshop on communications & engagement plan	21 February 2018*
23. Prepare draft LTP and Consultation document	Manager Projects Comms	December 2017 to February 2018	24. Council workshop on draft LTP and consultation document	21 February 2018*
25. Audit of LTP	Deloitte	February 2018*		
26. OAG hot review	Deloitte Manager Projects	End of February 2018*		
	Deloitte Audit & Risk Committee		27. Auditors report to Audit & Risk Committee	7 Mar 2018*
	Council or Finance & Corporate Committee		28. Endorsement of the LTP Consultation Document	21 March 2018*
29. Submissions close		9 May 2018*		
	Hearing committee		30. LTP hearings	23 May – 29 May 2018*
	Finance & Corporate Committee		31. Recommendations from hearing committee to Finance & Corporate Committee	13 June 2018*
	Council		32. Adoption of the final LTP	27 June 2018*

* Dates subject to confirmation of meeting schedule for 2018

7. Recommendation

That this report be noted.

Nick Donnelly
Director Corporate Services

Otago Regional Council

REPORT

Document Id: A1021519

Report No: 2017/0954
Prepared for: Finance and Corporate Committee
Prepared by: Manager Support Services
Date: 21 July 2017

Subject: Insurance Renewals 2017/18

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1. Précis

Council staff have finalised renewal of Council's insurance cover, with an overall premium increase of 12%. Factors influencing the increase include increased property values, increase in vehicle fleet numbers, value and claim history, and increased staff numbers.

2. Renewal Update

Staff have completed the renewal of Council's existing insurance policies for the period 4 pm 30 June 2017 to 4 pm 30 June 2018.

This year there has been an increase in most of Council's policies. Key factors influencing premiums are as follows;

> *Material Damage* – increased asset values and recent adverse natural events and disasters. Increases in this policy have been offset somewhat by a rebate on the Fire Service Levy of approximately $2,000. With the current market and the significant projected increases in Fire Service Levies, Council should expect further increases for the premiums for 2018/19.
>
> *Motor Vehicles* – increased fleet numbers and value, including the vehicles required for civil defence. The premium also reflects Council's claims profile which over the couple of years has been unfavourable.

It is also noted that Council's Professional Indemnity and Public Liability Insurance cover has increased from $200,000,000 to $300,000,000 with no increase in premium.

Council now no longer carry marine hull insurance having disposed of its oil spill response craft in favour of hiring appropriately equipped and skippered vessels to respond to marine oil spills.

Harbourmaster and wreck removal cover is provided under Council's Professional Indemnity and Public Liability Insurance cover.

3. Summary of cover

The insurance categories and a comparison of premiums between the 2016/17 and 2017/18 years are scheduled below:

Cover	Premium		
	Excess $	**2016/17 $ excl. GST**	**2017/18 $ excl. GT**
Material Damage (property, contents)	See note i)	63,862	65,186*
Business Interruption	5,000	3,424	3,704
Motor Vehicle	1,000	30,740	45,959
Fidelity Guarantee	25,000	7,950	8,550
Personal Accident	Nil	4,128	4,364
Marine Hull	500	927	-
Professional Indemnity and Public Liability Insurance	5,000/10,000	29,400	29,400
Employers and Statutory Liability and Defence costs		7,865	9,530
Travel		800	900
Total		**149,096**	**166,693**

*includes Fire Service Levy rebate

Notes:

i) The excess of Material Damage claims are as follows:

Subsidence and Landslip:	$50,000.
Natural Disasters (as defined in the policy):	5-10% of the Material Damage site. Sum insured minimum $5,000.
All other claims:	$5,000 per claim.

ii) Fidelity, the level of cover at $2,000,000.

iii) Public Liability and Professional Indemnity Limit increased from $200,000,000 - $300,000,000

iv) Harbourmasters' liability at $25,000,000.

v) Employer's and Statutory Liability at $2,000,000.

vi) Defence Costs associated and additional to v) above at $1,000,000.

4. Recommendation

That this report be noted.

Nick Donnelly
Director Corporate Services

Otago Regional Council

REPORT

Document Id: A1018822

Report Number: 2017/0936
Prepared For: Finance and Corporate
Prepared By: Finance Manager
Date: 27 July 2017

Subject: **Preliminary Financial Report for the year ended 30 June 2017**

The following preliminary information is provided in respect of the overall Council finances for the twelve months ended 30 June 2017. The information included in these financial statements is preliminary only, as certain year-end financial procedures have yet to be completed, and valuation information as at 30 June 2017 is yet to become available.

1. Preliminary Statement of Comprehensive Revenue and Expense and Preliminary Statement of Financial Position

Otago Regional Council
Preliminary Statement of Comprehensive Revenue and Expense
For the year to 30 June 2017

		$000s		
		Year to 30 June 2017		
	Note Ref.	Budget	Actual	Variance Note *
Revenue:				
Rate revenue		15,940	15,963	23
Government subsidies	Note 1	9,575	8,444	(1,131)
Other revenue	Note 2	3,892	5,712	1,820
Dividend income from Port Otago Ltd	Note 3	7,400	7,800	400
Interest and investment income	Note 4	2,150	2,279	129
Rental income	Note 5	1,111	1,051	(60)
Gain in value of investment property	Note 6	313	-	(313)
Total revenue		**40,381**	**41,249**	**868**
Less expenses:				
Operating expenses		27,734	27,597	137
Employee benefits expense	Note 7	12,133	12,927	(794)
Depreciation/amortization charge	Note 8	1,761	1,937	(176)
Total expenses		**41,628**	**42,461**	**(833)**
Surplus/(deficit)		**(1,247)**	**(1,212)**	**35**
Income tax benefit		115	98	(17)
Surplus/(deficit) after tax		**(1,132)**	**(1,114)**	**18**
Revaluation gain – shares in subsidiary	Note 9	10,000	-	(10,000)
Net comprehensive revenue		**8,868**	**(1,114)**	**(9,982)**

Note *
In the above statement, bracketed variances indicate revenue less than the budgeted level, and expenditure in excess of the budgeted level.

Note 1 – Government Subsidies

The Council receives subsidies from Government agencies on eligible expenditure. The level of subsidy income is therefore directly related to the level of eligible expenditure.

Public Passenger Transport

Subsidy income from the Public Passenger Transport project is down $2,194,000 on the budget of $9,193,000.

Within this project, some individual variances are the result of lower than budgeted expenditure levels in respect of developmental work of a capital nature, resulting in a lower level of claimable subsidy at this time.

These subsidy variances are the Electronic Ticketing System Replacement project with a variance of $1,261,000, the Real-time Information project with a variance of $281,000, and the Bus Hub project with a variance of $653,000.

Dunedin Bus Contracts activity also has a lower level of subsidy with a variance of $364,000 against a budget of $3,709,000 – reflecting a change from the budgeted basis and level of contract activity.

Stock Truck Effluent Disposal Site

Subsidy income related to the establishment of a Stock Truck Effluent Disposal site in Central Otago is budgeted at $252,000, however the project has not yet advanced to the point of eligibility for significant subsidy funding, with only $14,000 claimed to date, leaving a timing variance of $238,000.

Biodiversity – Wildings

Unbudgeted subsidy income of $1,114,000 was received from the Ministry of Primary Industries (MPI) to fund Wilding Tree Control work. The 2016/17 budget made allowance for work of $100,000, fully funded from the Wilding Tree targeted rate, however the availability of the MPI funding during the year has enabled considerably more control work to be undertaken than provided for in the original budget.

Note 2 – Other Revenue

The amount of other revenue earned of $5,712,000 exceeds the budgeted amount of $3,892,000 by $1,820,000.

The major reason for revenue exceeding budget is the receipt of unbudgeted gross contract bus fare revenue of $1,473,000. Bus contracts were fully budgeted on a net contract basis where the Council makes payments to operators net of fare revenue. Some contractual arrangements are now on a gross basis, where Council pays the gross amount to operators and receives gross fare revenue from the operators. This change in arrangement results in higher than budgeted revenue and expenditure.

Note 3 – Dividend Income from Port Otago Limited

Dividend income is accrued during the year based on the budgeted dividend level set in the Annual Plan, being $7.4 million for the June 2017 year.

Actual dividend revenue reported for the year comprises interim dividends received for the June 2017 year of $7.0 million along with the final dividend of $0.8 million for the preceding year received in September 2016. The variance is timing related as Port Otago has paid slightly higher interim dividends this year compared to previous years.

Note 4 – Interest and Investment Income

This revenue line comprises interest earned on term deposits and bank accounts of $1,343,000 and an increase in fair value of the managed fund portfolio of $936,000.

Interest earned on the term deposit portfolio for year to 30 June 2017, amounts to a weighted average interest rate of 3.55%.

The increase in fair value of the managed fund incorporates income received and changes in the market value of investments due to price changes, and foreign exchange rates where applicable. The overall change in fair value is subject to monthly fluctuations due to movements in the market valuation factors.

Note 5 – Rental Income

The primary reason for rental income being less than budget is that the budget provided for income on property that has been disposed of subsequent to formulation of the budget. This includes properties formerly held for the Leith Flood Protection Scheme and sub-lease income on the former Queenstown office.

Note 6 – Gain in Value of Investment Property

Investment Property is revalued annually as at 30 June 2017. At the time of preparation of this report, the revaluation amounts were yet to be received from the external valuer. Accordingly, in this report, the revaluation gain is shown as a zero amount. The revaluation gain will be reflected in the June 2017 Annual Report.

Note 7 – Employee Benefits Expense

A significant portion of the increased cost over that budgeted is related to the development of the new Civil Defence and Emergency Management structure, which includes the employment of the staff members based at the territorial local authorities. Amounts recovered from the TLA's are not offset in expenditure but are reflected in revenue. Additional resourcing within the Council operational directorates was also required, contributing to the overall increase in cost.

Note 8 – Depreciation and Amortization

The total of the depreciation and amortization charge of $1,937,000 exceeds the budgeted amount by $176,000. A significant factor in this variance is additional depreciation on flood protection and drainage scheme assets – with the Leith scheme accounting for $59,000 of the overall variance, and the Lower Clutha Scheme $20,000. Additional depreciation charges on computer hardware, and amortization charges on consents and compliance and general software systems, accounts for a further $64,000 of the variance.

Note 9 – Revaluation Gain – Shares in Subsidiary

The annual budget makes provision for an increase in the valuation of the Council's 100% shareholding in Port Otago Limited. A revaluation of the shares as at 30 June 2017 is being undertaken, but will not be available until mid-August. Accordingly, in this report, the revaluation gain is shown as a zero amount. The revaluation gain will be reflected in the June 2017 Annual Report.

Otago Regional Council

Otago Regional Council
Preliminary Statement of Financial Position as at 30 June 2017

	Note Ref.	30 June 2017 $000's	30 June 2016 $000's
Current Assets			
Cash and cash equivalents	Note 1	4,433	2,540
Other financial assets	Note 1	54,057	56,198
Trade and other receivables		3,484	3,298
Other current assets		261	207
Property held for sale and inventory	Note 2	1,291	1,284
		63,526	**63,527**
Non-Current Assets			
Property plant and equipment		85,731	84,138
Intangible assets (computer software)		2,019	1,800
Investment Property	Note 3	10,785	10,785
Deferred tax asset		98	98
Shares in subsidiary Port Otago Ltd	Note 4	418,239	418,239
		516,872	**515,060**
Total Assets		**580,398**	**578,587**
Current Liabilities			
Trade and other payables		7,229	4,134
Employee entitlements		1,289	1,483
Revenue in advance		57	-
		8,575	**5,617**
Non-current Liabilities		-	-
Total Liabilities		**8,575**	**5,617**
Net Assets		**571,823**	**572,970**
Total Equity and Reserves			
Public equity		**132,827**	**137,205**
Reserves			
Available-for-sale revaluation reserve	Note 4	398,239	398,239
Asset revaluation reserve	Note 3	8,724	8,724
Building reserve		13,985	10,997
Asset replacement reserve		5,903	5,987
Emergency response reserve		4,033	3,891
Water management reserve	Note 5	1,427	1,433
Kuriwao endowment reserve		6,361	6,271
Environmental Enhancement Reserve	Note 6	324	223
		438,996	**435,765**
Total Equity and Reserves		**571,823**	**572,970**

Note 1 – Cash and Cash Equivalents and Other Financial Assets

Funds surplus to the Council's immediate and short term requirements are managed on Council's behalf by the BNZ. An investment portfolio and term deposits with durations of 4-12 months are included in the classification Other Financial Assets. Current bank balances and term deposits with durations of less than 4 months are included in Cash and Cash Equivalents.

Note 2 – Property held-for-sale

The fair value of Property held-for-sale as at 30 June 2017 and the resulting adjustment from the previous year valuation are yet to be confirmed. The updated valuation amount will be reflected in the June 2017 Annual Report.

Note 3 – Investment Property and Asset Revaluation Reserve

Investment property is revalued annually. A revaluation of properties as at 30 June 2017 is currently being undertaken, and as yet, is unavailable.

Once the revaluations are received, the value of the property and the revaluation reserve will be updated and the changes reflected in the June 2017 Annual Report.

Note 4 – Shares in Port Otago Ltd and Available-for-Sale Revaluation Reserve

The shares in Port Otago Ltd are included at the 30 June 2016 valuation. An external revaluation of the shares as at 30 June 2017 is currently being undertaken, and is expected to be available mid-August. Once the revaluation is received, the value of the shares and the revaluation reserve will be updated and the change reflected in the June 2017 Annual Report.

Note 5 – Water Management Reserve

Note is made that in the year ended 30 June 2017, grants amounting to $58,000 have been made to water strategy and irrigation groups.

Note 6 – Environmental Enhancement Reserve

Note is made that in the year ended 30 June 2017, grants amounting to $238,000 have been made from the fund to organisations in support of community projects contributing to the enhancement of the local environment, the purpose for which the reserve was established.

The reserve has been increased in the current year by the transfer of $250,000 from general reserves, from monies received from an enforcement matter in the sum of $75,000, and through interest earned on the fund balance.

2. Activity Expenditure – Preliminary Report

The table below summarises activity expenditure, including capital expenditure, for the year to 30 June 2017. The reported expenditure is preliminary only as certain year-end financial procedures have yet to be completed.

The notes that follow the table identify the projects that have significantly contributed to the major overall activity variances.

Otago Regional Council

Activity Expenditure Summary
Preliminary Report Only

	Note Ref.	$000s Year to 30 June 2017 Budget	Actual	Variance Note *
Environment	Note 1			
Air		451	444	7
Environmental Incident Response		1,263	1,326	(63)
Land		1,982	3,307	(1,325)
Rivers and Waterway Management		1,822	1,543	279
Water		7,654	7,662	(8)
		13,172	**14,282**	**(1,110)**
Community	Note 2			
Public Information and Awareness		1,937	2,702	(765)
Democracy		1,548	1,778	(230)
Financial Contributions		350	350	-
Regional Economic Development		100	17	83
		3,935	**4,847**	**(912)**
Regulatory	Note 3			
Policy Development		176	571	(395)
Consents and Compliance		2,712	2,659	53
Harbour Management		273	709	(436)
		3,161	**3,939**	**(778)**
Flood Protection & Control Works	Note 4			
Leith Scheme		5,020	2,104	2,916
Taieri Schemes		2,034	1,288	746
Clutha Schemes		1,810	1,159	651
Other projects		267	305	(38)
		9,131	**4,856**	**4,275**
Safety and Hazards	Note 5			
Natural Hazards		1,261	1,297	(36)
Emergency Management		702	1,449	(747)
		1,963	**2,746**	**(783)**
Transport	Note 6			
Regional Land Transport Planning		167	357	(190)
Public Passenger Transport		16,320	14,013	2,307
Stock Truck Effluent Disposal Sites		495	66	429
		16,982	**14,436**	**2,546**
		48,344	**45,106**	**3,238**

* Variances – bracketed variances denote expenditure in excess of budget.

Note 1 – Environment

The Environment activity is over-expended by $1,110,000 in total, against a budget of $13,172,000. The two project groups contributing significantly to this overall variance are the Land and the Rivers and Waterway Management project groups.

Land
The two Land projects significantly over-expended are noted below.

The Biodiversity project is over-expended by $993,000 against a budget of $705,000. The project included budgetary provision of $100,000 for Wilding Tree related work, however the provision of unbudgeted Ministry of Primary Industry funding allowed for work of $1,288,000 to be undertaken – an additional $1,188,000 of expenditure.

The Pest Management Strategy Implementation project is over-expended by $456,000 against a budget of $825,000 and mainly relates to additional expenditure on the Wallaby project, Velvet Leaf response and extra inspection work for Old Man's Beard throughout the region.

Rivers and Waterway Management
The Rivers and Waterway Management projects are *under-expended* by $279,000 against a budget of $1,822,000.

A significant contributing factor in the under-expenditure was the over-estimation in the budgets of the extent of the natural hazard work required.

Note 2 – Community

Public Information and Awareness
The Public Information and Awareness group of projects shows net over-expenditure of $765,000 against a budget of $1,937,000.

The primary cause of the variance is a change in the way the LAWA project is administered and accounted for, with expenditure of $436,000 being recorded against the budget of $15,000. This is offset by unbudgeted other income as this is a national initiative and is funded by contributions from other regional councils.

Additionally, the Public Information project is over-expended by $224,000 against a budget of $1,392,000, with a significant contributing factor being additional staff time on annual planning and reporting that wasn't separately budgeted for.

The Responses to Issues project is over-expended by $197,000 against a budget of $271,000 due to a large number of proposals and TLA applications for assessment and response, some of which have been complex, requiring additional resource and associated cost.

Democracy
The costs associated with the democratic function of Council are $230,000 in excess of the budget of $1,548,000, due largely to election costs exceeding the budgetary provision by $139,000.

Regional Economic Development
The Regional Economic Development project is under-expended by $83,000 against the budget of $100,000.

A consultant has been engaged and is underway with the initial phase of this project, however some of the initial costs incurred have yet to come to hand.

Note 3 – Regulatory

The Regulatory activity overall is over-expended by $778,000 against the budget of $3,161,000.

Policy Development
The Regional Policy Statement project was budgeted to be completed prior to this financial year, however, completion took longer than anticipated and the RPS was released in late September 2016. The current year budget provides for annual expenditure of $176,000 whereas actual expenditure incurred has amounted to $571,000 resulting in over-expenditure of $395,000.

Harbour Management
The Harbour Management project is over-expended by $436,000 against a budget of $273,000. Harbourmaster services are currently being contracted out until internal resourcing is in place. External harbourmaster resourcing comes at a higher cost than the budgeted internal resource basis of operation.

Note 4 – Flood Protection and Control Works

The Flood Protection and Control activity overall is under-expended by $4,275,000 against the budget of $9,131,000.

Leith Scheme
The Leith Scheme is under-expended by $2,916,000 against the budget of $5,020,000. The variance to this point is largely due to timing in respect of the ITS Bend section of the scheme which is progressing at a different rate than that provided for in the budget phasing. This work will be completed early in the 2017/18 financial year.

Taieri and Clutha schemes
The Taieri and Clutha schemes are under-expended by $746,000 (budget $2,034,000) and $651,000 (budget $1,810,000) respectively. These variances comprise both timing in terms of work phasing and permanent savings on budget.

In respect of permanent savings, at the time of budget preparation there was uncertainty regarding the nature and extent of water quality improvement work necessary for the consenting of pump stations. The budgets allowed for water quality infrastructure improvement work, however this is no longer required and changes to operational procedures at minimal cost will be sufficient.

The water quality infrastructural improvement work allowed for in the year to date budgets amounts to $212,000 in the Lower Clutha scheme, $121,000 in the West Taieri scheme, and $127,000 in the East Taieri scheme.

Note 5 – Safety and Hazards

Emergency Management
The Emergency Management project is over-expended by $747,000 against the budget of $702,000. The additional expenditure relates to the establishment of Emergency Management Otago (EMO), creation of a new EMO website and additional costs over that budgeted associated with the transition to the new integrated staff structure.

Note 6 – Transport

Public Passenger Transport
The Public Passenger Transport project is under-expended by $2,307,000 against the budget of $16,320,000.

There are some significant individual sub-project variances within this project, however most of these are in respect of developmental work of a capital nature, and result from work progressing at a different rate than anticipated in the budget.

The significant areas of under-expenditure were in respect of the National Electronic Ticketing System replacement with a variance of $1,940,000 (budget of $3,228,000), the Real-time Information System with a variance of $551,000 (budget of $559,000), and the Bus Hub facility with a variance of $1,281,000 (budget of $1,718,000).

The significant areas of additional expenditure are in respect of the gross bus contracts where costs are $760,000 in excess of the budgeted amount of $7,272,000, and expenditure related to the replacement Total Mobility System with expenditure of $243,000 carried over from the 2015/16 budget.

Regional Land Transport Planning
The Regional Land Transport Planning project is over-expended by $190,000 against the budget of $167,000, largely reflecting the fact that the work entailed in this project is significantly more comprehensive and costly than was provided for in the budget.

Stock Truck Effluent Disposal Sites
The Stock Truck Effluent Disposal Sites project is under-expended by $429,000 against the budget of $495,000. The project is tracking through the initial planning phases, including site selection. It is projected that construction (budgeted in the 2016/17 year) will carry over to the following financial year.

3. Recommendation
That this report be received.

Nick Donnelly
Director Corporate Services

OTAGO REGIONAL COUNCIL

Agenda for a meeting of the Technical Committee to be held in the Council Chamber, 70 Stafford Street, Dunedin on Wednesday, 2 August 2017, following the Finance and Corporate Committee

Membership:
Cr Andrew Noone (Chairperson)
Cr Ella Lawton (Deputy Chairperson)
Cr Graeme Bell
Cr Doug Brown
Cr Michael Deaker
Cr Carmen Hope
Cr Trevor Kempton
Cr Michael Laws
Cr Sam Neill
Cr Gretchen Robertson
Cr Bryan Scott
Cr Stephen Woodhead

Apologies: Cr Noone

Leave of Absence: Cr Neill

In attendance:

Please note that there is an embargo on agenda items until 08:30am on Monday, 31 July 2017

CONFIRMATION OF AGENDA

CONFLICT OF INTEREST

PUBLIC FORUM

MINUTES

Minutes of the meeting held on 14 June 2017, having been circulated for adoption.

ACTIONS

Status report of resolutions of the Technical Committee.

Report No.	Meeting	Resolution	Status
2017/0848 Waiwera River Catchment Water Quality Study	14/6/17	That a stakeholder engagement proposal is brough to the next Communications round.	CLOSED. Item 1 of Communications Committee agenda 2/8/17

PART A PRESENTATIONS

PART B ITEMS FOR NOTING

Item 1
2017/0802 **Director's report on progress**, DEHS, 08/06/17

The report provides information on: Lakes Hayes Remediation; review of State of the Environment (SOE) monitoring; Clean Water Package 2017 – National Proposed Swimmability Targets; National Flood Forecasting Model; Sector Research; Waitaki District Council District Plan Review; Leith Flood Protection Scheme; Stock Effluent Disposal Sites.

Item 2
2017/0844 **Ecological Assessment of the Waikouaiti, Catlins and Shag Estuaries**, DEHS, 17/07/17

The covering report summarises the 2016/17 ecological assessments carried out in the Waikouaiti, Catlins and Shag Estuaries to inform the development of the Coastal Strategy and to complement work being undertaken on the effects of surface water-groundwater interactions on water quality in the lower Shag River.

The technical reports are circulated separately with the agenda:

Waikouaiti Estuary - Broad Scale Habitat Mapping 2017/17
Waikouaiti Estuary - Fine Scale Monitoring 2016/17

Catlins Estuary - Broad Scale Habitat Mapping 2016/17
Catlins Estuary - Fine Scale Monitoring 2016/17

Shag Estuary - Broad Scale Habitat Mapping 2016/17
Shag Estuary - Fine Scale Monitoring 2016/17

OTAGO REGIONAL COUNCIL

Minutes of a meeting of the Technical Committee held in the Council Chamber, 70 Stafford Street, Dunedin on Wednesday, 14 June 2017, commencing at 2:48pm

Membership:
Cr Stephen Woodhead (Deputy Chairperson)
Cr Graeme Bell
Cr Doug Brown
Cr Michael Deaker
Cr Carmen Hope
Cr Trevor Kempton
Cr Michael Laws
Cr Sam Neill
Cr Andrew Noone
Cr Gretchen Robertson
Cr Bryan Scott

Apologies:
Cr Deaker
The apology was noted.

In attendance:
Peter Bodeker (CE)
Gavin Palmer (DEHS)
Nick Donnelly (DCS)
Fraser McRae (DPPRM)
Michele Poole (Acting DSHE)
Scott MacLean (DEMO)
Adam Uytendaal *(Item 1 & 2)*
Rachel Ozanne *(Item 1& 2)*
Lauren McDonald (Committee Secretary)

Members of the Yellow-eyed Penguin Trust and staff were welcomed to the meeting

CONFIRMATION OF AGENDA
The agenda was confirmed.

CONFLICT OF INTEREST
No conflicts of interest advised.

PUBLIC FORUM
No public forum held.

MINUTES
Minutes of the meeting held on 3 May 2017, having been circulated were adopted on the motion of Crs Woodhead and Laws. ***Carried***

ACTIONS
(Status report of resolutions of the Technical Committee).

No current actions to be reported.

PART A PRESENTATIONS

Yellow-eyed Penguin Trust presentation on conservation science work

Presenters: Dr Eric Shelton, Trust Board Chair
Ms Sue Murray, General Manager
Dr Trudi Webster, Conservation Science Trust Advisor

Dr Palmer introduced the Trust members who provided detail on the work achieved for the reporting period February 2016 to May 2017 and the Trust plans for the future.

The presentation outlined:

- Background of the Trust and as an Otago "brand" in the tourism sector.
- Major issues faced by the Trust – in particular the declining number of penguin breeding pairs and the investigations of the causes.
- The role of the Trust science advisor - Trudi Webster
- Recent developments
- Future plans for the Trust – projects, strategies, collaborations.
- Areas of continued work and mutual support with ORC

Cr Brown left the meeting at 3:00pm.

Discussion was held on the investigations underway by the Trust in regard to the mass unexplained mortality rate and the resourcing needed to understand the impacts contributing to the bird decline.

Cr Woodhead confirmed Council's continued support and thanked Dr Shelton, Ms Murray and Dr Webster for the work of the Trust and their presentation to Council.

Cr Laws left the room at 3:28pm and returned at 3:37pm.

PART B ITEMS FOR NOTING

Item 1
2017/0802 **Director's report on progress**, DEHS, 08/06/17

The report provided information on: Alpine lakes and lake snow; climate change adaption; geomorphic change detection; flood forecasting capabilities; Owhiro Stream flood hazard investigation, and the Leith Flood Protection Scheme.

Dr Palmer summarised the report and discussion was held on the priority of research work streams detailed in Appendix A of the report and the status of funding bids made to MBIE by Catchments Otago and Landcare Research.

<u>Lake Snow</u>
Dr Palmer advised that the immediate research aim was to establish whether lake snow was an invasive species or not as this would determine future work streams and responsibilities. He confirmed further consideration was being given to progression of aspects of research, relevant to ORC's interests, as part of the Long Term Plan (LTP) process.

Moved Cr Scott
Seconded Cr Hope

That the report is noted.

Motion carried

Item 2
2017/0844 **Trophic Level Status of Lake Waipori and Lake Waihola**, DEHS, 08/06/17

The covering report summarised the trophic level monitoring undertaken between 2014 and 2016, water quality data collected over the three periods: 1997-1998; 2002-2004; and 2014-2016, and the water quality results.

The full ORC technical report entitled *"Lake Waipori and Lake Waihola Trophic Level Status"* was circulated separately with the agenda.

Ms Ozanne summarised the report and answered questions from councillors. Discussion was held on the trophic status remaining unchanged but noting a significant decrease in the levels of phosphorus detected during the monitoring period.

Moved Cr Neill
Seconded Cr Hope

That this report and the technical report "Trophic Level Status of Lake Waipori and Lake Waihola" are received and noted.

Motion Carried

Item 3
2017/0848 **Waiwera River Catchment Water Quality Study**, DEHS, 02/06/17

The covering report summarised the findings of the water quality study report. The full ORC technical report entitled *"Water Quality Study: Waiwera River Catchment"* was circulated separately with the agenda.

Ms Ozanne provided an overview of the study work undertaken and confirmed that the community was kept information of the water quality results throughout the survey period.

In response to a question Ms Poole advised that the communications team would investigate an strategic approach to release of the survey results to the community for the reports tabled in Items 2 and 3 of the agenda.

Discussion was held on the study results and possible future actions to address the ongoing rural water quality issues in the catchment.

Cr Scott left the room at 4:13pm

Moved Cr Noone
Seconded Cr Bell

That this report and the technical report "Water Quality Study: Waiwera River Catchment" are received and noted.

That a stakeholder engagement proposal is brought to the next Communications round.

Motion Carried

The meeting was declared closed at 4.15pm.

Chairperson

Otago Regional Council

REPORT

Document Id: A1015218

Report Number: 2017/0908
Prepared For: Technical Committee
Prepared By: Dr Jean-Luc Payan, Manager Natural Hazards
Dr Dean Olsen, Manager Resource Science
Chris Valentine, Manager Engineering
Date: 11 July 2017

Subject: **Director's Report on Progress**

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1. Lake Hayes Remediation

Dr Olsen and I met with Friends of Lake Hayes (FOLH), at their invitation, on 19 June to discuss remediation of Lake Hayes. The target in the 2017/18 Annual Plan[1] was explained and the options report prepared for FOLH by Dr Marc Schallenberg (University of Otago) was discussed. The meeting was very constructive with consensus reached on the broad options for which technical and funding proposals would be developed and publicly consulted on. It was agreed that ORC would continue to engage with FOLH and to keep them informed of progress.

2. Review of State of the Environment monitoring

NIWA is continuing the review of ORC's current regional State of the Environment (SoE) river and lake water quality and biomonitoring programmes. The purpose of the review is to 'future proof' these programmes so that they are fit for purpose in terms of the site network, monitoring variables and technology (including lake monitoring buoys). Recommendations are also expected regarding the water quality parameters measured, including analytical methods, and these recommendations are expected to bring this into line with the National Environmental Monitoring Standards for water quality analysis that is currently in preparation. The review will also consider long-term lake monitoring options, including for the large alpine lakes.

The review is expected to be finalized by September and will be reported to committee. Provision has been made in the 2017/18 Annual Plan to undertake detailed investigations and costings of the monitoring options arising from the NIWA review and to implement these within the monitoring network within the 2017/18 year where practicable. Substantive changes to the network will be considered during preparation of the 2018/28 Draft Long Term Plan.

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[1] The Annual Plan target is "*develop and publicly consult on technical and funding proposals for the remediation of Lake Hayes*".

Otago Regional Council

3. Clean Water Package 2017 - National Proposed Swimmability Targets

The Government recently published its Clean Water Discussion document[2] which proposes national targets relating to swimming for New Zealand's rivers and lakes[3]. Swimmability is assessed as a measure of safety as determined by *E. coli* concentrations in rivers and toxic algae biovolume in lakes.

The targets relating to swimmability are that:

1. 80%[4] of rivers and lakes are safe to swim in by 2030 and 90% of rivers and lakes are safe to swim in by 2040, and
2. the percentage of rivers and lakes which are fair, good and excellent increase over time.

To fulfil these targets, regional councils and unitary authorities have been asked to report to the Minister for the Environment on their proposed regional targets by October 2017 and on their final targets by March 2018. Councils are collaborating on the reporting. To support this, a taskforce has been established by the Ministry for the Environment (MfE) to provide nationally consistent data to support forecasting of swimmability against proposed limits. Dr Adam Uytendaal is a member of this taskforce providing support on lake swimmability.

In summary:

1. The national modelled 'current state' is 72% of waterways are swimmable (see Figure 1),
2. The Otago modelled current state is 82% swimmable. Otago waterways therefore meet the 2030 targets but improvements are needed to meet the 2040 target of 90% swimmable,
3. Modelled compliance of swimmability targets for Otago published by MfE provide a fair representation of the current state of swimmability across the region. The exception is Lake Wanaka and the lower branch of the Clutha. Feedback on this has been provided to MfE and the Swimmability maps will be updated accordingly,
4. The 'draft' swimmability attribute states are based on 4 separate metrics (see Table 1). Comparison of Region Plan: Water for Otago's Schedule 15 limits for different Receiving Water Groups satisfy the swimmability targets for three of the proposed metrics. However, for Group 1 and 2, the Schedule 15 limit of an 80th percentile of 260 *E. coli* for flows less than median flow will only just achieve the 4th and most stringent proposed attribute state of a 95th percentile of < 1200 *E. coli* at all flows,
5. The proposed attribute states are 'draft' only. It is our understanding that feedback from across the regional council sector is that there is a need to reduce the number of attribute states for assessing 'swimmability'.

[2] Director's Report on Policy Progress March 2017, Report to Otago Regional Council Policy Committee, Report 2017/0679, 22 March 2017.
[3] Rivers greater than 4th order and lakes with perimeters longer than 1,500 metres.
[4] Percentages are measured as the combined length of rivers and lake perimeters.

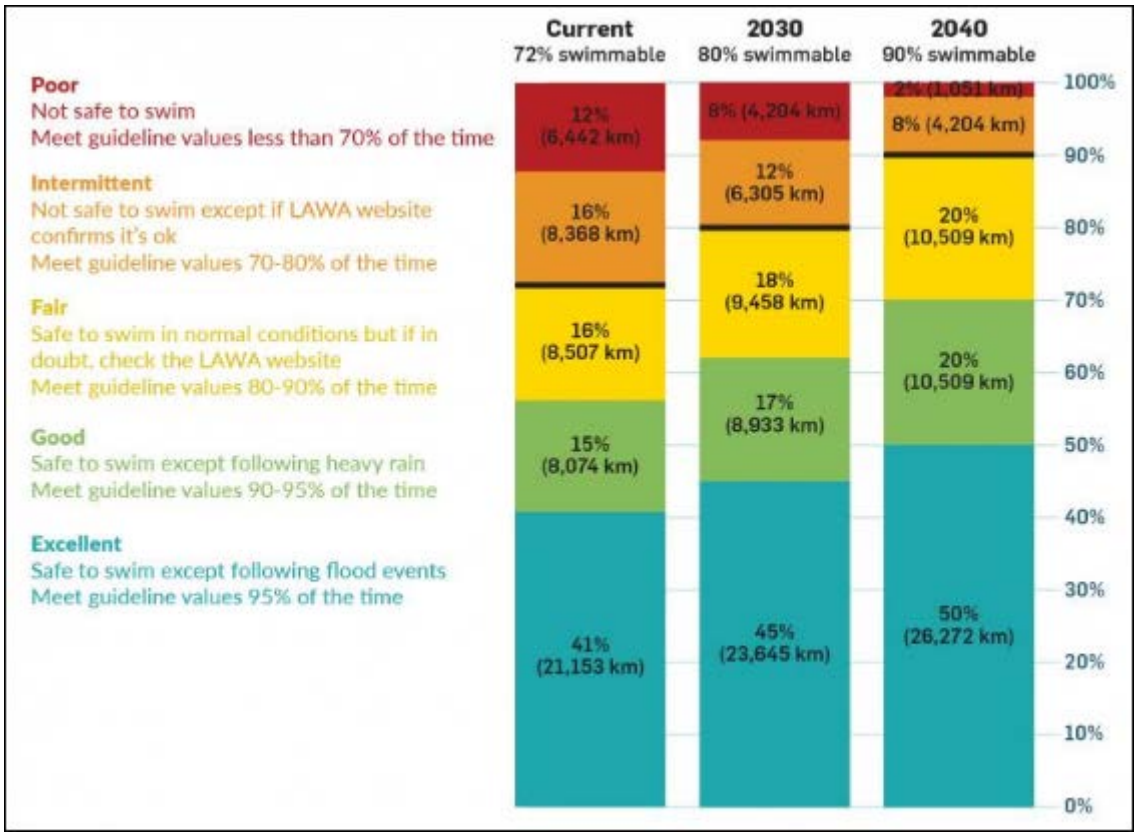

Figure 1: **Modelled national compliance with 'swimmability' targets. Current state and proposed targets for 2030 and 2040.**

CATEGORY	PERCENTAGE OF EXCEEDANCES OVER 540: E. COLI PER 100 ML	MEDIAN: E. COLI PER 100 ML	95TH PERCENTILE: E. COLI PER 100 ML	PERCENTAGE OF SAMPLES ABOVE 260: E. COLI PER 100 ML
Blue	< 5 per cent	⩽ 130	⩽ 540	< 20 per cent
Green	5-10 per cent	⩽ 130	⩽ 1000	20-30 per cent
Yellow	10-20 per cent	⩽ 130	⩽ 1200	20-34 per cent
Orange	20-30 per cent	>130	>1200	>34 per cent
Red	> 30 per cent	>260	>1200	>50 per cent

Table 1: **Proposed Swimmability attribute states – based on 4 separate assessments. Yellow represents the minimum acceptable level of exposure risk.** ***Taken from MfE website http://www.mfe.govt.nz/fresh-water/freshwater-management-reforms/clean-water-package-2017.***

4. National Flood Forecasting Model

NIWA's Chief Climate Scientist and NIWA other scientists met with staff on 17 July for a detailed presentation on and discussion of NIWA's National Flood Forecasting Model. The model forecasts the flow within 66,000 watercourses across New Zealand. It was agreed that ORC would continue to engage with NIWA and other regional councils with similar interests in how the model could be further developed and applied. Low flow forecasting and water quality modelling were also discussed.

5. Sector Research

I am continuing my involvement in the Nation Science Challenge: Climate Change and Stormwater and Wastewater Infrastructure Dialogue and participated in the second dialogue on 26 June. The dialogues have the aim of informing discussion papers that identify gaps in knowledge and subsequently form research projects.

I also participated in the regional councils "Integrated Science for the Future" Special Interest Group (SIG) Research Strategy Workshop on 20 and 21 July. The workshop provided the opportunity for regional councils and in particular the various regional council SIGs to share current thinking on key strategic issues and research needs for the sector. The topics discussed included freshwater, air quality, climate change, coasts, biodiversity, natural hazards, flood protection and river engineering.

6. Waitaki District Council District Plan Review

Dr Payan and his staff are working with the Waitaki District Council (WDC) to scope the requirements for natural hazards information to assist in the preparation of the District Plan review. ORC will provide technical information to inform the district plan review, taking a similar approach to the way it collaborated with Clutha District Council on Milton 2060 and with Dunedin City Council on the 2GP Dunedin District Plan Review. The focus is currently on assessing the needs for coastal hazard information. The work with WDC is planned to continue through the year and to include other natural hazards.

7. Leith Flood Protection Scheme

Engineering staff and I participated in the Otago Polytechnic Campus Development (OPCD) Urban Realm workshop on 5 July and outlined the Leith Flood Protection Scheme. It was agreed that ORC would continue to liaise with the Polytechnic and other stakeholders on the OPCD Urban Realm work and on the development of concepts for further enhancement of the Forth Street to Harbour section of the Water of Leith. The further enhancement is programmed for construction in the period 2018-2020 and will build on the initial enhancement works undertaken by ORC in 2011 (Figure 2).

Figure 2: **Water of Leith at low tide, before (left) and after (right) the construction of weirs downstream of ANZAC Street in 2011.**

Engineering works on the Union to Leith Footbridge stage of the Scheme are progressing (Figure 3). The removal of asbestos-contaminated soil is substantially complete. The asbestos is being excavated and removed from site in accordance with a plan approved by WorkSafe NZ and the University of Otago. Works to increase the height of the right bank wall are well underway.

For various reasons including the discovery of asbestos and the weather events in April and July (Figure 4) some of the construction works will extend beyond the planned completion date into the 2017/18 summer break. Staff are continuing to liaise closely with the university so as to minimise disruption to students, staff and visitors.

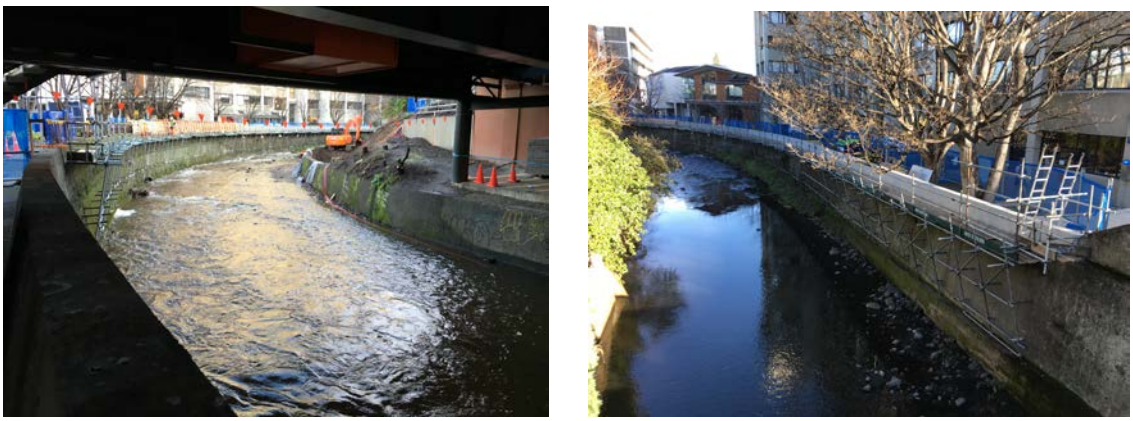

Figure 3: **Leith Flood Protection Scheme works underway between Union Street and Leith Footbridge (14 July 2017).**

Figure 4: **Leith Flood Protection Scheme following the flood event on 21 – 22 July 2017.**

Investigations for the Dundas Street stage of the Scheme are continuing. A civil and structural design contract for the culvert and modification to the existing bridge has been awarded to Opus Consultants Ltd. The first stage of their contract is to investigate the feasibility of three options in relation to increasing the freeboard below the existing bridge. Physical modelling of design options will be undertaken at the University of Auckland. The construction works are programmed to commence in early 2018 assuming a construction contract is awarded before the end of this calendar year.

8. Stock Truck Effluent Disposal Sites

Site selection has been completed for two new stock truck effluent disposal sites (STED) in Central Otago. Discussions with the Road Transport Association and their members have refined the options to two preferred sites. A business case has been completed and approved by NZTA for the design and construction of the two STEDs. The design contract will be awarded this month. Discussions are ongoing with CODC regarding the disposal of effluent from the two sites. It is possible one of the sites could be piped directly into the Cromwell wastewater collection system, and this opportunity is being investigated further as part of the detailed design contract.

9. Recommendation

That this report is noted.

Gavin Palmer
Director Engineering, Hazards and Science

Otago Regional Council

REPORT

Document Id: A1019349

Report Number: 2017/0940
Prepared For: Technical Committee
Prepared By: Rachel Ozanne, Environmental Resource Scientist
Date: 17 July 2017

Subject: **Ecological Assessment of the Waikouaiti, Catlins and Shag Estuaries**

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1. Précis

In 2016/2017 ecological assessments were carried out in the Waikouaiti, Catlins and Shag Estuaries to inform the development of the Coastal Strategy and to complement work being undertaken on the effects of surface water-groundwater interactions on water quality in the lower Shag River. The assessments are presented in the attached reports.

2. Background

Developing an understanding of the condition and risks to coastal and estuarine habitats is an important part of the management of these resources. In 2016, Wriggle Ltd were contracted to undertake ecological monitoring of the Waikouaiti, Catlins and Shag Estuaries, to assess the state of these estuaries and identify any areas of concern, including eutrophication, sedimentation, toxicity and habitat change. They undertook these assessments in December 2016.

The approach for monitoring the condition of the estuaries followed the National Estuary Monitoring Protocol (NEMP[1]) and the NZ Estuary Trophic Index (ETI[2]). The NEMP approach is new (2016), these are the first estuaries to which ORC has applied this approach. It consists of three components:

1. Ecological Vulnerability Assessment (EVA). This component looks at estuaries in the region and their vulnerability to major issues.[3]

2. Broad Scale Habitat Mapping (NeMP approach). This component maps the key habitats within the estuary, determines their condition and assesses changes to these habitats over time.

3. Fine Scale Monitoring (NeMP approach). Monitoring of physical, chemical and biological indicators.

Results are linked to risk indicator ratings that facilitate the assessment of overall estuary condition and enable easy comparison of ecological state between estuaries.

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[1] Robertson et al. 2002: Estuarine Environmental Assessment and Monitoring. MfE Contract No. 5096.
[2] Robertson et al. 2016a/b: NZ Estuary Trophic Index. Screening Tools 1 & 2. MBIE/NIWA Contract C01X1420.
[3] This component has not yet been undertaken on a regional scale for Otago.

3. Implications

To be consistent with the NeMP approach to estuary ecological monitoring, a baseline of ecological health needs to be established against which future trends can be compared. If ORC is to follow the NeMP approach, additional monitoring is required as follows:

Broad scale habitat mapping:	5-10 yearly cycle
Fine scale monitoring:	3-4 consecutive years of baseline monitoring, followed by 5 yearly impact monitoring.

The 2017/18 annual plan includes a target to "Design and establish a coastal SoE network". Consideration of the NeMP approach and how it will be applied in Otago will be considered as part of that project.

4. Recommendation

That this report and the technical reports attached are received and noted.

Gavin Palmer
Director Engineering, Hazards and Science

Attachments:

Waikouaiti Estuary - Broad Scale Habitat Mapping 2017/17
Waikouaiti Estuary - Fine Scale Monitoring 2016/17

Catlins Estuary - Broad Scale Habitat Mapping 2016/17
Catlins Estuary - Fine Scale Monitoring 2016/17

Shag Estuary - Broad Scale Habitat Mapping 2016/17
Shag Estuary - Fine Scale Monitoring 2016/17