



A royal albatross

Biodiversity Action Plan Te Mahi hei Tiaki i te Koiora 2019-2024



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1. Overview

1.1 Purpose

This plan sets out the actions that the Otago Regional Council (ORC) intends to take over the next five years to maintain and enhance biodiversity in Otago by implementing its Biodiversity Strategy, *Our Living Treasure/ Tō tātou Koiora Taoka*¹ and better integrating its biodiversity and biosecurity activities. It builds on and refines actions in ORC's Biodiversity Strategy.

1.2 Objectives

The plan has three key objectives:

1. *The full range of Otago's indigenous ecosystems are maintained in a healthy and fully functioning state, from the mountains to the ocean depths and from protected areas to productive landscapes.*
2. *Agencies, community groups and individuals work collaboratively in partnership, taking an integrated, efficient and cost-effective approach that is based on sound science.*
3. *People living in Otago value and better understand biodiversity so that we can all enjoy and share in its benefits, as the foundation of a sustainable economy and society.*

1.3 Key Actions

To achieve these objectives ORC will develop and implement a biodiversity programme in the following focus areas:

1. **Active management**
Prioritised 'on the ground' action is needed to maintain and enhance indigenous biodiversity and realise Objective 1.
2. **Regional leadership and coordination**
Joint goals, projects and partnerships are necessary to achieve Objective 2.
3. **Better information for better management**
Relevant, timely and easily accessible information is essential to enable Objectives 1, 2 and 3.
4. **Education and community engagement**
Only through winning hearts and minds and understanding community aspirations can Objective 3 be realised.
5. **Rules and regulation**
Most people are willing to support biodiversity outcomes, however, some bottom lines and "regulatory teeth" are also necessary to support people's voluntary efforts and achieve Objective 1.

The focus areas and actions within them are described in Section 5.

¹ <https://www.orc.govt.nz/plans-policies-reports/strategies/biodiversity-strategy>

2. What is the issue?

2.1 Indigenous biodiversity decline in Aotearoa

For over 80 million years the biodiversity of Aotearoa New Zealand evolved in geographical isolation and without the influence of humans. This led to a unique indigenous biodiversity that is particularly vulnerable to the effects of human activities and introduced pests.²

In the past 700-800 years, it is estimated that human activity has caused the extinction of one-third of indigenous land and freshwater birds, 18% of sea birds, three of seven frog species, at least 12 invertebrates (such as snails and insects), one fish, one bat, perhaps three reptiles and possibly 11 plants.³ Today, about one third of original native forest remains, mainly in mountainous and hilly areas. Wetland areas have been reduced to 10 percent of their original extent.

Despite the dedicated efforts of many people, groups and agencies to reverse this alarming trend over recent decades, Aotearoa's indigenous biodiversity continues to decline. Recent assessments of threatened species from land, freshwater and marine environments show that extinction risk for 86 species worsened in the past 15 years. In the last 10 years the conservation status for 26 species improved - over half of these species are dependent on conservation management. Native cover and wetland area have continued to decline and the volume of water in our rivers has reduced due to increased water use, which means habitat for freshwater species is reduced and degraded.⁴ In Otago we have a high proportion of endemic species and ecosystems that are found nowhere else. Species loss is irreversible.

Drivers of biodiversity loss include introduced predators, plants and diseases, land-use intensification for production or urban development, pollution in freshwater and coastal habitats, use of natural resources (e.g. fishing and fresh water extraction), and increasingly climate change.⁵

2.2 Why is biodiversity important?

Declining biodiversity has implications for us all and for future generations. Biodiversity (or biological diversity) refers to the variation among all living organisms.⁶ This diversity of life has both intrinsic and practical value to people. Papatūānuku/the Earth sustains us at a physical level by providing us with natural resources that enable us to survive and flourish. For many of us, including takata whenua, Papatūānuku has cultural and spiritual significance. Whatever our world view, maintaining the health and diversity of life is vital for our wellbeing and a sustainable economy and society.⁷

Losing biodiversity depletes natural capital and reduces the ecosystem services we all benefit from (see 2.3 below), for example nutrient cycling, carbon sequestration, water retention and a sense of heritage or identity. Currently provisioning ecosystem services (e.g. the growing of food and fibre) are increasing at the expense of regulating, supporting and cultural services, which are undervalued by markets.⁸ Without a change in current management practices these losses will detract from the quality of life for current and future generations.

² Brown, M. A., Stephens, R. T., Peart, R. and Fedder B. (2015). *Vanishing Nature: facing New Zealand's biodiversity crisis*. Environmental Defence Society, Auckland.

³ DoC (2004). *Protecting our places*.

⁴ MfE & Stats NZ (2019). *Environment Aotearoa 2019*.

<https://www.mfe.govt.nz/sites/default/files/media/Environmental%20reporting/environment-aotearoa-2019.pdf>

⁵ Ibid.

⁶ A more complete definition of biodiversity can be found in the Glossary.

⁷ Millennium Ecosystem Assessment (2005). *Ecosystems and Human Well-being: Biodiversity Synthesis*. World Resources Institute, Washington, DC. <https://www.millenniumassessment.org/documents/document.354.aspx.pdf>

⁸ Maseyk et al. (2017) *Conservation Letters*, 10(2).

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We all have a shared responsibility to protect, restore and enhance our remaining biodiversity. Halting the decline of indigenous biodiversity requires us to build on and expand current initiatives, apply best practice informed by ongoing research and monitoring, and increase collaboration across agencies and groups.

2.3 Biodiversity provides ecosystem services

The benefits that people gain from nature are referred to as ecosystem services. These fall into four main categories:

Provisioning services are the products obtained from ecosystem services (e.g. food, wood fuel, fibre, biochemicals and genetic resources).

Regulating services are the benefits people gain from the regulation of ecosystem processes (e.g. climate regulation, disease regulation, water regulation and purification, and pollination). These enable resilience in our environment, which will help in adapting to a changing climate.

Cultural services are the non-material benefits we obtain from nature (e.g. aesthetic, spiritual and religious values, knowledge systems, cultural heritage, sense of place and identity, recreation and ecotourism).

Supporting services support other ecosystem services (e.g. production of atmospheric oxygen, soil formation and retention, and nutrient and water cycling).⁹

3. ORC's Biodiversity Strategy

This Plan builds on and refines actions from ORC's *Biodiversity Strategy -Our Living Treasure/Tō tātou Koiora Taaka*,¹⁰ which was finalised in June 2018. This is an organisational strategy (rather than a joint regional strategy), which identifies how ORC will add value and strategic leadership to work that protects, enhances and restores biodiversity across Otago. It was informed by a comprehensive review of work currently underway across Otago¹¹ and extensive consultation with iwi and stakeholders, which included a regional hui, bilateral discussions and written feedback.

The strategy recognises the important role of mana whenua under the Treaty of Waitangi and the Resource Management Act 1991 (RMA) as kaitiaki of natural resources in Otago. ORC is committed to supporting mana whenua in this role.

ORC wants to partner with iwi and develop stronger relationships with other agencies, community groups and land managers to effectively address biodiversity declines in Otago.

The strategy includes indigenous and exotic biodiversity

While some exotic species are considered pests because they have a detrimental effect on indigenous species or ecosystem services, some exotic species are valued for the ecosystem services they provide. This includes providing habitat and filling functional niches left vacant by declines in indigenous species. Active management of pest species, such as invasive weeds and mammalian predators, is essential to maintain or enhance indigenous biodiversity and valued exotic species (e.g. grassland pasture).

⁹ Ibid.

¹⁰ <https://www.orc.govt.nz/plans-policies-reports/strategies/biodiversity-strategy> - accessed 21 August 2018.

¹¹ Wildlands (2017) *Strategic analysis of options to improve management of ecosystems and biodiversity in Otago*. Contract report # 4262. <https://www.orc.govt.nz/media/4026/strategic-biodiversity-options-for-orc-updated.pdf> - accessed 6 May 2019.

3.1 Vision and outcomes

The strategy has an overarching vision that “Otago is the proud home of thriving ecosystems and rich biodiversity.” It has five outcomes, some focused on indigenous biodiversity, and others on all biodiversity:

1. All indigenous species and ecosystems are maintained.
2. Threatened indigenous species and ecosystems are enhanced.
3. People are aware and proud of Otago’s biodiversity.
4. Kai Tahu’s role as kaitiaki is acknowledged and supported.
5. Otago’s biodiversity adds value to the regional economy.

3.2 Guiding principles

The strategy has four guiding principles as to *how* the Council will work:

1. *An ecosystems-based approach is taken to effectively manage biodiversity.*
We need to consider the connectivity and interdependencies between different places, species and management approaches.
2. *Biodiversity projects are led or co-led by local communities with support from councils and organisations.*
Much of the active management of biodiversity takes place at the community level (e.g. through planting or pest management programmes). Support from agencies is essential to coordinate efforts and help provide resources, advice and other support.
3. *People are conscious of and enjoy biodiversity in their everyday lives.*
We need to be aware of and appreciate the ecosystem services biodiversity provides that we all benefit from.
4. *Key stakeholders take a coordinated and collaborative approach towards enhancing biodiversity outcomes.*
ORC needs to work with partners and stakeholders to align our strategic direction and projects.

4. Roles and responsibilities

Roles and responsibilities for biodiversity management are overlapping, complex and poorly defined by national legislation,¹² hence agreement and cooperation at regional level is critical. Consultation on the Biodiversity Strategy indicated widespread support for ORC providing leadership and coordination to maintain, protect and enhance Otago’s biodiversity. The actions in Focus Area 2 will enable ORC in this role.

To work across rohe, agency and territorial boundaries we need a good understanding of the respective roles and priorities of iwi, other agencies, groups, land users and communities. While different agencies have specific roles in relation to biodiversity, there are also many passionate and committed groups and individuals undertaking valuable work. The diversity of players brings strength and challenges. Strength because only by working together towards shared outcomes can we hope to achieve the massive task before us. Our challenge is to encompass our diverse roles and interests so that we can align work, resources and kaupapa to protect Otago’s biodiversity.

¹² Willis, G. (2014). *Biodiversity: Roles and Functions of Regional Councils*. Enfocus, Auckland.

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Takata whenua have specific roles and responsibilities under the Treaty of Waitangi and the Resource Management Act 1991 (RMA). Takata whenua values are incorporated and protected in the Regional Policy Statement, regional and district plans and the Biodiversity Strategy.

Territorial authorities (i.e. city and district councils) are responsible for controlling the effects of land use on indigenous biodiversity. They also identify areas of significant indigenous vegetation or significant habitat of indigenous fauna under the RMA, which need to be maintained or enhanced.

4.1 ORC's role – focus on private land

The RMA provides the overarching framework for the role of regional councils in biodiversity management. The protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna are matters of national importance.¹³ In particular, regional councils are responsible for *the establishment, implementation, and review of objectives, policies, and methods for maintaining indigenous biological diversity*.¹⁴

Biodiversity protection has been an outcome sought by the RMA since it came into effect in 1991. However, since 2003, establishing objectives, policies and methods to maintain indigenous biodiversity has been a mandatory function for regional and district councils. Achieving this requires positive action, such as pest and weed control and the replanting of endemic flora, in addition to managing the adverse effects of resource use and development through regulation, advice and enforcement.¹⁵

ORC has an important role to play in protecting and enhancing our remaining biodiversity. While the Department of Conservation (DoC) is primarily responsible for protecting threatened species and on Crown land,¹⁶ ORC is in a unique position to lead regional initiatives that support land managers on private land. ORC intends to integrate its biodiversity and biosecurity activities under a common strategic framework and joint business plan (see Action 2.3).

ORC has a legislated role in biodiversity management through its functions under the RMA, and under the Biosecurity Act (1993) for pest management. In addition, under the Local Government Act (2002) and the Local Government (Rating) Act (2002) it has powers to rate for initiatives that maintain and enhance biodiversity. A key avenue through which the Council implements its biodiversity responsibilities is through the Regional Policy Statement for Otago (RPS).

ORC has recently reviewed its RPS, a new version of which was made partially operative in January 2019. The RPS has policies that relate to biodiversity protection and pest management, and regional and district plans are required to give effect to the operative RPS.

4.2 How the regional sector can best add value to biodiversity management

Gerard Willis has prepared two reports on behalf of the regional sector on the role of regional councils in biodiversity management. These reports considered:

- the roles and functions of regional councils in relation to other agencies and as enshrined in legislation; and¹⁷

¹³ RMA (1991), Section 6

¹⁴ RMA 1991, Section 30 (ga)

¹⁵ Willis, G. (2017). *Addressing New Zealand's Biodiversity Challenge. A Regional Council thinkpiece on the future of biodiversity management in New Zealand*. Enfocus, Auckland.

<https://www.es.govt.nz/Document%20Library/Other%20resources/Biosecurity%20resources/Addressing%20New%20Zealand's%20biodiversity%20Challenge.PDF> accessed 1 July 2018.

¹⁶ Land and Information New Zealand (LINZ) is responsible for Crown land in its management rather than DoC's.

¹⁷ Willis, G. (2014). *Biodiversity: Roles and Functions of Regional Councils*. Enfocus, Auckland.

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- how regional councils can best add value to biodiversity management given their unique functions, roles and strengths.¹⁸

In terms of adding value, the following key messages came through for regional councils.

Building on what regional councils do best

Regional councils can contribute to the greatest biodiversity gains by being bigger and better *operational managers*. They are responsible for maintaining (including advising and working alongside others to maintain) the quality and ecological integrity of key habitats and ecosystems mainly on private land. Working with land owners is a traditional strength of regional councils. The control of plant and animal pests, and other risks requiring positive action, needs to be recognised as the core dimension of biodiversity management at the regional level.

Better information for better management

Because the task of maintaining biodiversity is a huge challenge with limited funding and resources, *prioritisation* is critical to identify where the greatest biodiversity gains will be for the effort expended. This allows councils to develop management responses that prioritise the most threatened species and ecosystems within their regions.

Monitoring outcomes is critical as we need to know what we have in order to protect it and we need to track changes over time to know if we are having an impact.

A final shift identified for biodiversity information management is to move away from the current situation where information is held by individual organisations and towards a *biodiversity data commons* where information can be shared and accessed by everyone working to protect biodiversity. This requires regional and national level coordination.

Planning & delivering joined up action

Even with prioritisation, the task on private land is bigger than regional councils can manage alone. Therefore, the planning and resourcing of biodiversity management by regional councils needs to be in partnership with the Department of Conservation (DoC), rūnaka, city and district councils, land owners and the community and private sectors. This requires collaboration and a common understanding of management priorities.

5. Focus areas and actions

To regenerate Otago's biodiversity so that our full range of indigenous ecosystems are maintained in a healthy and fully functioning state we need to work together towards common goals based on agreed priorities. This requires *landscape-scale conservation* or an ecosystem approach, which is land management that involves working in collaboration and at a large scale - often around a catchment, estuary or other recognisable landscape unit. This is a scale at which natural systems tend to work best and where there is often most opportunity to deliver real and lasting benefits. In this way, it is possible to deliver environmental, social and economic benefits that are more difficult to achieve by managing small sites individually. Collaborating across landscapes means land managers can achieve greater success than working in isolation.¹⁹

ORC intends to undertake the actions in this plan and to lead work that improves regional coordination in biodiversity management, particularly on private land. This Plan organises, refines and prioritises actions

¹⁸ Willis, G. (2017). *Addressing New Zealand's Biodiversity Challenge. A Regional Council thinkpiece on the future of biodiversity management in New Zealand*. Enfocus, Auckland.

¹⁹ See *Scotland's Environment* website (accessed 5/6/19).

<https://www.environment.gov.scot/our-environment/people-and-the-environment/landscape-scale-conservation/>

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from the Biodiversity Strategy (see Appendix 1). The focus areas and actions in Table 1 (below) provide a strong foundation to maintain and enhance Otago's biodiversity and increase our future resilience.



Okia Reserve, Otago Peninsula

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Table 1. Summary of Focus Areas and Actions

Focus Area		By when
1. Increase active management		
Actions	1.1 Build on existing predator and weed control initiatives to develop and implement landscape scale programmes	Ongoing
	1.2 Develop and run pilot studies for voluntary planting programmes to support land users in the management of indigenous biodiversity and water quality	2024
	1.3 Develop and run pilot studies for a voluntary programme that supports land users to protect, maintain or enhance biodiversity on private land	2024
2. Regional leadership & coordination		
Actions	2.1 Employ a Biodiversity Programme Leader to support regional collaboration	November 2019
	2.2 Facilitate and participate in regional and national level engagement to improve collaboration and coordinate effort	Ongoing
	2.3 Integrate ORC's biodiversity and biosecurity activities into one cohesive work programme	June 2020
	2.4 Work with iwi and other agencies to scope a regional biodiversity strategy	June 2021
3. Better information for better management		
Actions	3.1 Complete biodiversity mapping and prioritisation of sites for active management	July 2020
	3.2 Develop a collaborative biodiversity research programme for Otago	December 2020
	3.3 Develop a region-wide monitoring network to evaluate the extent and condition of indigenous ecosystems over time and space	July 2024
	3.4 Scope work to develop a common platform to share information on biodiversity and biosecurity in Otago	December 2020
4. Education and community engagement		
Actions	4.1 Develop and provide advice on good management practices for indigenous biodiversity	Ongoing
	4.2 Support community groups working to enhance biodiversity by providing advice, connections and funding	Ongoing
5. Policy, rules and regulation		
Action	5.1 Implement the new Regional Pest Management Plan	Ongoing
	5.2 Strengthen provisions to protect and enhance biodiversity in reviews of the Regional Plans for Water and Coast	2025

Focus Area 1

Increase active management

This focus area is about ORC stepping up its contribution to and support for active management of biodiversity in the region at landscape scale. ORC will work with iwi and rūnaka to ensure that programmes and projects can be implemented on Māori land, which tends to have relatively high biodiversity values.²⁰

Action 1.1 Build on existing predator and weed control initiatives to develop and implement landscape scale programmes

ORC's proposed Biosecurity Strategy,²¹ which will be finalised later in 2019, sets out ORC's approach to a programme of action for effective biosecurity management across Otago. The strategy integrates the ORC's statutory and non-statutory biosecurity functions, including the proposed Pest Management Plan and all other biosecurity activities such as monitoring and surveillance, research, incursion responses and collaborative action. It will guide Council's delivery of biosecurity activities over the next 10 years through measures to protect our environment, economy and communities from the impact of harmful organisms, many of which have adverse effects on the biodiversity of indigenous species and ecosystems and of valued exotic species.

One of the four key priorities in the Proposed Biosecurity Strategy is:

Landscape Scale and Site Scale: Target key areas for collaborative and coordinated control

ORC will work with other agencies, groups, interested parties and volunteers to better protect our special places from harmful organisms and provide regional leadership and support for these initiatives. The proposed Biosecurity Strategy sets out three ways that landscape scale and site scale initiatives can be progressed:

Site-led programmes in the Pest Management Plan	How to add new site-led programmes to the Plan	Other site and landscape scale initiatives
For existing larger scale initiatives.	For new and future larger scale initiatives.	For smaller scale initiatives.
ORC has committed to four large scale site-led programmes in the Pest Management Plan: The Otago Peninsula, West Harbour - Mt Cargill, Quarantine and Goat Islands, and lagarosiphon site-led areas.	Appendix 2 of the Biosecurity Strategy sets out how new site-led programmes can be included in the Pest Management Plan.	Further actions also set out how other smaller site and landscape scale initiatives can be developed or supported.

²⁰ Biodiversity (Land and Freshwater) Stakeholder Trust (2018). *Report of the Biodiversity Collaborative Group*. https://www.biodiversitynz.org/uploads/1/0/7/9/107923093/report_of_the_biodiversity_collaborative_group.pdf accessed 5 June 2018.

²¹ ORC (2018). Proposed Biosecurity Strategy. <https://yoursay.orc.govt.nz/37664/documents/91268>

Action 1.2 Develop and run pilot studies for voluntary planting programmes to support land users in the management of biodiversity and water quality

ORC intends to develop voluntary programmes to support the planting of indigenous species with the goal of enhancing:

- indigenous biodiversity, particularly in low land areas where indigenous cover is less common than in hilly and mountainous areas; and
- water quality with respect to reducing the run-off of nutrients, faecal bacterial and sediment to water ways

Planting and excluding stock from riparian margins, wetlands and other low-lying areas provides a variety of ecosystem services, for example providing habitat for indigenous fauna, filtering nutrients and sediment from run off to water bodies and flood mitigation through water retention and absorption.²² Research and experience from other regions has shown that these gains do not need to be at the expense of production.²³ Indigenous planting also increase on farm biodiversity, attract native fauna and facilitate connectivity between habitats. Predator and weed management within planted areas will be essential to realise biodiversity gains.

Initially we will investigate planting programme effectiveness in different areas of the region to build natural capital and enhance ecosystem services. Riparian planting may work best in some areas, whereas in other areas planting low lying areas and wetlands may be more effective. Pilot studies will be put in place and monitored. Subject to resourcing through ORC's next Long-Term Plan (2021-2031), our vision is to roll out planting projects across the region, where land users and communities are supportive.

Planting programmes will include both general, industry and catchment specific approaches, working with established catchment groups in the region. We anticipate that land manager support is likely to include advice on management options and assistance with the cost and sourcing of plants endemic to areas.

Action 1.3 Develop and run pilot studies for a voluntary programme that supports land users to protect, maintain or enhance biodiversity on private land

ORC intends to develop and run pilots for a voluntary programme to provide support and advice to people managing land with high indigenous biodiversity values. Initially we will investigate options and then run pilot projects with willing land users to determine what works best to enhance biodiversity outcomes in different parts of Otago. Advice to land users will include management and legal options that would be most useful to maintain or enhance biodiversity values on a particular property. ORC's long-term intention is a region-wide roll out of successful programmes.

Areas managed for biodiversity outcomes on a voluntary basis may be complemented with legal protection though other mechanisms, such as QEII covenants and designation of significant natural areas by city or district councils.

²² Maseyk et al. (2018). A case for integrating indigenous biodiversity into on-farm planning. *Journal of New Zealand Grasslands* 80; 55-60.

²³ Maseyk et al. (2018). Change in ecosystem service provision within a lowland dairy landscape under different riparian margin scenarios. *International Journal of Biodiversity Science, Ecosystem Services and Management*, 14(1), 17-31

Focus Area 2

Regional leadership and coordination

Consultation on the Biodiversity Strategy and this plan indicated wide-spread support from partners and stakeholders for ORC take a more active role in leading and coordinating biodiversity management at a regional level, especially on private land. To fulfil this role ORC intends to undertake the following actions.

Action 2.1 Employ a Biodiversity Programme Leader to support regional collaboration

A key purpose of the Programme Leader role is to provide leadership and to facilitate collaboration on biodiversity programmes and projects across the region. The Programme Leader will also oversee the planning and delivery of other actions in this plan and help to connect interested people and community-led groups with information, advice and contacts.

Action 2.2 Facilitate and participate in regional and national level engagement to improve collaboration and coordinate effort

This involves ORC organising regular cross-agency meetings to share information and identify potential operational gains to enable agencies to work together more fluidly. Regional biennial hui are planned and governance, liaison and technical working groups could be established if other parties agree this would add value to regional work. Similar groups are proposed under ORC's Biosecurity Strategy and it is intended that these groups be combined to cover both biodiversity and biosecurity activities. ORC is also part of several regional sector groups that facilitate national coordination and initiatives (e.g. the Bio-managers Special Interest Group).

Establish joint governance and liaison groups

The purpose of establishing joint governance and liaison groups is to build agreement around regional priorities and to develop partnerships on key projects. Because resources to manage biodiversity are scarce in relation to the size of the task, partnerships are valuable to achieve common goals. Such partnerships are likely to include contributions of information, funding and human resources, including help from communities and volunteers.

The governance group would help to provide strategic direction on priorities and membership will ideally include rūnaka and elected representatives and board members from relevant and interested organisations. The liaison group would have a more operational focus and include people actively working with land users and communities to protect, enhance and maintain biodiversity.

Hold a regional biodiversity forum by July 2020

The Council intends to hold a regional biodiversity forum every two years. The first Council-convened forum was held in October 2017. The draft biodiversity and biosecurity strategies and the review of the Pest Management Plan were discussed at this forum, which proved valuable in bringing together diverse stakeholders and to share and hear views on biodiversity and biosecurity in Otago. The second regional forum will be an opportunity to share and discuss the regional biodiversity mapping (see Action 3.1), and its implications and uses going forward, with a wide range of partners and stakeholders.

Action 2.3 Integrate ORC's biodiversity and biosecurity activities into one cohesive work programme

Biodiversity/biosecurity has been identified as one of four strategic priorities for ORC. A new ORC team has been established that is responsible for both biodiversity and biosecurity. Work is underway to develop an integrated strategic framework (Phase 1) and business case options (Phase 2) to progress ORC's biodiversity

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and biosecurity activities. The integrated framework and business case will underpin the successful implementation of this Plan and inform ORC's Long-Term Plan process for 2021-2031.

Action 2.4 Work with iwi and other agencies to scope a regional biodiversity strategy

A regional strategy jointly developed and owned by agencies and groups working across the region was one of two key actions agreed in principle at a regional hui convened by the Otago Conservation Board in September 2018. ORC is committed to working with iwi and other agencies to scope a regional strategy by the end of 2020 and has initiated discussions to progress this work.

Focus Area 3

Better information for better management

Action 3.1 Complete biodiversity mapping and prioritisation of sites for active management

A key action underpinning this plan is to develop a framework for regional prioritisation of terrestrial, freshwater, coastal and marine ecosystems in Otago. There are four key parts to this described below. The final output, expected by July 2020, will identify areas where active management is likely to bring the greatest biodiversity gains.

Map current and potential ecosystems

ORC has a project underway to map Otago's ecosystems and biodiversity, including mapping potential and current terrestrial ecosystems as agreed by Bio-managers²⁴ across the country. This project is expected to be completed by March 2020.

Mapping mana whenua values

Mapping takata whenua values, in particular mahika kai and taoka sites, means that cultural values can be taken into account in determining priority areas for active management. Discussions are underway with Kai Tahu with the aim of getting this work started.

Mapping iwi, agency and community biodiversity initiatives across the region

Mapping of initiatives that support biodiversity and biosecurity across Otago will help to inform the prioritisation by identifying areas currently managed and what they are managed for. This exercise will also be valuable in aligning and coordinating operational work across different agencies and groups.

Prioritisation

Once ecosystems have been mapped they will be prioritised for management based on several factors including:

- the proportion of original ecosystems remaining;
- the proximity of other threatened ecosystems and species;
- condition layers, for example:
 - whether an area has been previously logged
 - weed and pest distribution
 - whether area is already managed;

²⁴ Bio-Managers is a Special Interest Group (SIG) of senior managers working in biodiversity and biosecurity management for regional councils and unitary authorities across New Zealand.

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- how practical it is to restore ecosystems; and
- the ecosystem services provided by ecosystems.

The areas selected for management through this process will then be refined with input by local experts. The resulting prioritisation will inform operational policy, for example, ecosystem types could be rated from priority 1 to 3 with ratings informing areas of operational management and criteria for grants towards biodiversity protection and restoration.

Management actions will be tailored to particular sites (ideally through the development of management plans) and are likely to include:

- the protection of remaining indigenous vegetation;
- pest and weed control;
- riparian planting;
- restoration of high value terrestrial ecosystems
- planting and maintenance of endemic species;
- fencing and stock exclusion from areas with particularly high biodiversity values; and
- wetland restoration.

Action 3.2 Develop a collaborative biodiversity research programme for Otago

In partnership with iwi, the University of Otago, communities, and other agencies ORC will develop a research programme for biodiversity in Otago. Informed by the mapping work in Action 3.1, this research will help to align management solutions to critical areas, thus optimising benefits. Research will also include investigation and assessment of the economic and financial implications for land users aiming to maintain and regenerate biodiversity through active management and land retirement methods. This will facilitate the adoption of active management methods by land users. Decision-making tools will enable land users to assess and evaluate land use options, to effectively implement and regenerate biodiversity on private land.

Action 3.3 Develop a region-wide monitoring network to evaluate the extent and condition of indigenous ecosystems over time and space

Based on objectives informed by regional prioritisation (Action 3.1), ORC will develop a monitoring programme to reflect the state of, pressures on, and responses to, biodiversity in Otago.

The monitoring programme will also include:

- monitoring of the Pest Management Plan and the Biosecurity Strategy.
- Indicators of community engagement in biodiversity.

The monitoring programme will need to be established and protected to ensure:

- regularly and consistently collected data over time; and
- robust evidence-based research that is collatable across districts and regions.

Terrestrial biodiversity indicators

Manaaki Whenua/Landcare Research has already developed an agreed suite of indicators of terrestrial biodiversity (including wetlands) for use by regional councils.²⁵ To implement these, the Council needs to

²⁵ Lee, W. G. & Allen, R. B. (2011). *Recommended monitoring framework for regional councils assessing biodiversity outcomes in terrestrial ecosystems* (LC144). Landcare Research, Dunedin.

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analyse existing data and collect new data. Existing data includes the change in land base cover over time. Other indicators are qualitative and require field surveys using standardised methodologies, for example, bird counts and the condition of indigenous vegetation. New data will need to be collected if the Council is to report on these and assess the impact of its implementation of biodiversity and biodiversity strategies and plans.

Develop a monitoring framework for coastal and fresh water biodiversity

ORC's freshwater biomonitoring programme has recently been reviewed. Information from this review and from ecological prioritisation (Action 3.1) will help inform the indicator framework for freshwater and coastal biodiversity. The Council has an estuary monitoring programme consistent with requirements for biodiversity, however, a broader framework for coastal monitoring needs to be developed.

Action 3.4 Scope work to develop a common platform to share information on biodiversity and biosecurity in Otago

The goal of this project is a common information platform for biodiversity and biosecurity information relevant to the Otago region that is transparent, comprehensive and available to all people. Such a platform would integrate the mapping work described in Action 3.1 with other information held by ORC, other agencies, the University of Otago and community groups.

Initially, we will undertake a scoping exercise to determine what resources, platforms and information gaps currently exist and how ORC could add value to the goal of information sharing. This could be by developing a new platform, or by contributing to the enhancement of an existing platform or a new national platform.

There are several useful examples and resources of similar programmes nationally. For example, ORC contributed to the development of Nature Space as part of the regional Bio-managers collective. Depending on the data platform set up, data may be able to be synchronised to existing platforms rather than creating something from scratch (e.g. Nature Space and the National Conifer Programme).

The mapping and prioritisation of ecosystems in Action 3.1 has been completed or is underway for most regions in Aotearoa. The regional sector has agreed to use the same methodology so that information can be collated on a national basis. ORC will advocate with iwi and central government agencies for the creation of a national data commons where iwi, agencies, community groups, land users and others can access and share information.²⁶

Focus Area 4

Education and Community Engagement

The second key action agreed at the Otago Conservation Board Regional Forum²⁷ was to recognise the importance of community education and storytelling. Communities are at the heart of influencing change. Whether on farm or in urban areas, respect for the environment and the care of biodiversity must be fully integrated into everyday practice.

Action 4.1 Develop and provide advice on good management practices for indigenous biodiversity

ORC will develop and distribute advice on good management practice for biodiversity, which is tailored to different audiences, including groups and individuals living in urban and rural areas and working in different

²⁶ Note that this will work require consideration of indigenous intellectual property.

²⁷ The Otago Conservation Board convened a regional hui in Dunedin on 27 September 2018.

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types of farming and forestry. For example, information sheets on riparian planting, farm forestry and pest plants. There will also be an online pest hub that will include the plants and animals in the Regional Pest Management Plan, and other organisms that communities are interested in.

Action 4.2 Support community groups working to enhance biodiversity by providing advice, connections and funding

Communities have a critical role in the active management of biodiversity. Funding from agencies can make a big difference to support the good work of land users, communities, NGOs and volunteers. Agency involvement is also important to support and coordinate the efforts of different groups and effect meaningful change.²⁸

Funding

The Environment Community Otago (ECO) Fund supports work that protects and enhances Otago's environment, including work that protects, enhances and maintains biodiversity. The Council contributes \$250,000 every year to the ECO Fund, which is split into three funding rounds. The fund is available for project work and administrative support.

Private companies and philanthropic interests also have an interest in supporting biodiversity. Through partnerships with these sectors, funding can be leveraged for projects that support regional priorities. Establishment of Trusts will be considered to enable legally protected philanthropic interests.

In the future, ORC intends to establish a dedicated biodiversity fund with criteria aligned to regional priorities. Funding would be made available in areas and for projects that will make the biggest difference to biodiversity outcomes in Otago.

Focus Area 5

Rules and regulation

Action 5.1 Finalise and implement the new Regional Pest Management Plan

The Council has a regional leadership role in pest management under the Biosecurity Act 1993 and notified a Proposed Regional Pest Management Plan on 1 November 2018. This plan builds on the 2009-2019 Pest Management Strategy and previous pest management programmes. Its purpose is to provide a framework to efficiently and effectively manage or eradicate specified organisms in Otago. Doing so will:

- minimise the actual or potential adverse or unintended effects associated with those organisms; and
- maximise the effectiveness of individual actions in managing pests through a regionally coordinated approach;
- benefit biodiversity outcomes in the region.

Action 5.2 Strengthen provisions to protect and enhance biodiversity in Water and Coast Plans

Upcoming reviews of the Regional Plan Water and Regional Plan Coast will need to give effect to ORC's recently reviewed Regional Policy Statement,²⁹ which has strengthened provisions to maintain and enhance indigenous biodiversity. Work has started on the Water Plan Review, which is expected to be notified in

²⁸ Brown, M. A. (2018). *Transforming community conservation funding in New Zealand*. Predator Free New Zealand. <https://predatorfreenz.org/saving-community-conservation/pfnz-trust-transforming-community-conservation-funding-in-nz-may-2018-compressed/> accessed 1 October 2018.

²⁹ The proposed Regional Policy Statement was notified in 2015 and the majority of it became partially operative in December 2018.

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2025. Both plans will have strengthened provisions in relation to indigenous biodiversity as a result. This regulatory approach will support and reinforce the other actions in this Plan.

6. Monitoring and reviewing the Action Plan

The effectiveness of the Biodiversity Action Plan will be monitored and reviewed as follows:

- ORC will report regularly to its Policy Committee on progress with implementation;
- Through the monitoring programme in Action 3.3, ORC will report on the state of, pressures on, responses to and impact of biodiversity outcomes in Otago.
- The efficiency and effectiveness of the Plan will be reviewed after five years (i.e. 2024). This review will include:
 - whether actions were implemented;
 - how effective the Plan's actions were in achieving the desired outcomes and addressing regional priorities; and
 - a report to the Policy Committee on the relevance, efficiency and effectiveness of the Plan.

Glossary

Biodiversity refers to the variety among all living organisms, including diversity within species (genetic diversity), between species and of ecosystems. These different aspects of biodiversity are interdependent, and to maintain biodiversity each must be protected.³⁰

Indigenous biodiversity refers to species and habitats that occur naturally in a place, including migratory species.

Endemic biodiversity refers to species and habitats that occur naturally in a place and that are not found elsewhere.



³⁰ Willis, G. (2014). *Biodiversity: Roles and Functions of Regional Councils*. Enfocus, Auckland.
[https://www.marlborough.govt.nz/repository/libraries/id:1w1mps0ir17q9sgxanf9/hierarchy/Documents/Your%20Council/Meetings/2015/Environment%202015%20List/Item 5 30 April 2015 Biodiversity-Roles and Functions of Regional Councils-Willis-Nov 2014.pdf](https://www.marlborough.govt.nz/repository/libraries/id:1w1mps0ir17q9sgxanf9/hierarchy/Documents/Your%20Council/Meetings/2015/Environment%202015%20List/Item%205%2030%20April%202015%20Biodiversity-Roles%20and%20Functions%20of%20Regional%20Councils-Willis-Nov%202014.pdf) accessed 29/8/18.

WHAT DOES ORC PROPOSE TO DO?

This is a high-level plan that ORC will add to and refine as the strategy is implemented.



Leadership and Collaboration

	TASKS	TIME
Hold a regional biodiversity forum to discuss regional priorities, activities, and opportunities, and to celebrate success		Every two years
Partner with city and district councils, Kāi Tahu, DOC, Fish and Game, and other organisations on key projects		Project basis
Establish a regional biodiversity liaison group and Technical Working Party to align and co-ordinate biodiversity projects		Within two years
Administer the ECO Fund - an ORC fund that supports groups working to achieve good environmental outcomes		Ongoing
Support community groups by promoting their work and providing expert advice and connections		Ongoing
Employ a biodiversity coordinator to act as a central point of contact and drive strategy implementation		Within one year
Participate in national level initiatives and collaboration to improve biodiversity outcomes		Ongoing



Education and Information Sharing

	TASKS	TIME
Provide information on biodiversity management to individuals, other organisations, and communities, including on good management practices for indigenous biodiversity and the importance of ecosystem services		Ongoing
Support region-wide education programmes, including EnviroSchools		Ongoing
Develop and maintain an online portal to:		
<ul style="list-style-type: none"> · Share information and resources on biodiversity · Provide a forum for discussions within and between communities 		Ongoing

Appendix 1 cont'd



Monitoring and Research

	TASKS	TIME
Undertake research on key biodiversity matters, including: <ul style="list-style-type: none"> · Issues with a high biodiversity risk and insufficient information · Regional pest management opportunities · Potential climate change effects and responses 		Project basis
Develop a spatial plan showing biodiversity outcomes sought, values, protected areas, and planned initiatives		Within three years
Undertake residents' surveys on biodiversity outcomes, perceptions and practices		Every five years
Identify and report on biodiversity indicators for Otago		Every five years



Regulatory

	TASKS	TIME
Administer and review the Regional Pest Management Plan		Ongoing
Ensure regional and district plans give effect to the biodiversity outcomes sought in the Regional Policy Statement for Otago		Ongoing
Manage effects of activities on coastal and freshwater biodiversity through resource consent processes		Ongoing