

Rātā Foundation Environment Sector Scan

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Prepared for Rātā Foundation by

Karen Denyer, MSc (Hons)
Papawera



Rātā
Foundation

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EXECUTIVE SUMMARY

The Rātā Foundation is working through a programme of evidence informed priority setting to focus its funding strategically in the face of increasing demand. It has commissioned this report to provide background and technical expertise for the development of funding priorities for community organisations working for the environment. This report presents an analysis of environmental priorities and community environmental group needs in the Rātā region (Nelson, Tasman, Marlborough, Canterbury, Chatham Islands) and makes a number of recommendations for Rātā Foundation to consider.

A review of relevant documents and key informant interviews provides a scan of current and future environmental challenges facing the regions, along with possible actions for community organisations. This showed that the key environmental domains on which community organisations are most able to make traction are largely around land-based biodiversity. Therefore, this report is weighted towards biodiversity, while recognising the role of activities on land in helping to restore or maintain waterways, as well as other co-benefits around carbon sequestration, and other ecosystems services.

The following general recommendations are made for consideration:

- Focus funding on community led projects seeking direct environmental outcomes on environmental priorities.
- For biodiversity outcomes fund projects focused on ecosystems in threatened environments, habitat for threatened or regionally endemic species, sites of high ecological value that are subject to significant threats, and involve priority actions (in this order: legal protection e.g. through covenant; physical protection e.g. pest/livestock control; habitat restoration or enhancement; habitat re-creation/re-construction).
- Consider including land purchase and survey costs for legal protection of severely threatened or under-protected ecosystems in funding inclusions.
- Focus funding to education/sustainability programmes on those linking action with education, and consider the awareness campaigns that are part of a wider direct action project – e.g. to encourage direct action on private land by landowners.
- Continue to provide funding for operating costs and for paid coordinators.
- Offer multi-year funding, particularly for long-term projects.
- Assess applications firstly on direct outcome, cost-effectiveness and outcome certainty, then (and for substantial investment) on indirect benefits and special features.
- In addition to the Foundation’s standard eligibility and exclusions, exclude projects that solely focus on awareness raising, that have do not have a natural environment outcome, have no community input, or are socially divisive.
- Undertake regular (e.g. three-yearly) reviews of the environment sector activities and funding needs, e.g. via online surveys, to have a clear picture of the community groups in the Rātā Region, and their funding needs.

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Cover photo: Collecting raupo seed for restoration at Mangarakau wetland, Golden Bay, Joanne Vaughan, Friends of Mangarakau

1. INTRODUCTION

Rātā Foundation is one of twelve Community Trusts across New Zealand that funds not-for-profit organisations working in four funding areas:

- Canterbury (Christchurch, Waimakariri, Selwyn and Hurunui districts)
- Nelson (Nelson and Tasman districts)
- Marlborough (Marlborough and Kaikoura districts)
- Chatham Islands.

The Foundation’s vision and purpose is to contribute to stronger, more connected, happier and more prosperous communities.

In April of this year, Rātā Foundation¹ implemented a new Funding Framework, which is a step change towards funding for outcomes through being more evidence informed, including having appropriate internal practices in place to enable this endeavour. Additionally, Rātā is working through a programme of funding priority setting to focus its funding in the face of increasing demand.

This is a departure from the previous way of processing applications under annual rounds through sector-based closing dates. Environment was previously one of those sectors, and its funding budget was proportioned against 10 other sectors such as Social Services, Education, Sport and Recreation (reflected against community demand). In 2015/16 the total environment sector budget was \$450,000 across all Rātā regions.

Rātā has also identified four key focus areas to communicate its funding priorities externally, these are Learn, Support, Connect and Participate. Each area has a description that reflects the Foundation’s high level intent. ‘Our Focus’ under each area represents the Foundation’s current funding priorities.

As Rātā has not yet set its Environment funding priorities, they have proxy priority statements for organisations working on environmental projects under the Participate focus area:

- Involve people in enhancing and sustaining our natural environment.
- Provide opportunities for people to enjoy and spend time in our unique environments in Canterbury, Nelson, Marlborough and the Chatham Islands.

The majority of applicants received under the Environment closing date in the last two years were seeking funding to support initiatives to protect and enhance native biodiversity², for

¹ (formerly the Canterbury Community Trust)

² Biodiversity means the amount and variety of all life on earth, including plants, animals, fungi, micro-organisms, the genes they contain, and the ecosystems on land or in water where they live. MfE and DoC 2000

example habitat restoration, pest control, or raise awareness and promote community action on the ground.

Rātā Foundation is aware that environmental initiatives are wide ranging and cover projects such as those that seek to raise community's awareness of an issue, through to conservation focused actions that lead to long-term environmental outcomes. Rātā Foundation is also aware there are a number of funders in New Zealand (be that philanthropic, government – national or local) that fund across this continuum of environmental initiatives to varying degrees.

Given Rātā Foundation's need to ensure its funding is more focused, evidence-based and leads to positive outcomes in relation to its vision and focus areas, recommended priorities should take into account the range of environmental initiatives and determine where the Foundation is best placed to fund. Rātā Foundation also needs to understand best practice in this area to ensure its assessment practices are consistent and transparent given limited technical internal capability in this area.

The new funding framework puts in place two contestable funding programmes:

- Large Grants Programme– the intent of this programme is to support organisations which form part of the fabric of our communities and projects which provide wider community benefit.
- Small Grants Programme– the intent of this programme is to support grassroots initiatives in the community, including organisational running costs.

2. SCOPE AND METHODOLOGY

A literature review was conducted and nine semi-structured interviews³ were held with representatives from Department of Conservation, local authorities in the Rātā region, and key funding bodies (WWF, NEXT Foundation), to investigate and report on:

- the Rātā region's environmental issues and priorities, with a focus on ecological/conservation aspects
- broad community group profiles,
- best practice and hallmarks of success for environmental projects

Key items of literature included state of the environment reports, national, local and iwi strategies and policy/planning documents, as well as published reports on community groups.

³ See Acknowledgements

3. DEFINITIONS

3.1 ENVIRONMENT

Environment is a very broad term, defined in New Zealand's Environment Act (1986) as including ecosystems (including people), natural and physical resources, amenity/cultural values and the societal conditions that interact with them.

Natural and physical resources as defined in the Act include:

- Water
- Air
- Soil, minerals, hydrocarbons
- Energy
- All forms of flora and fauna (whether native to New Zealand or introduced)
- Any building, structure, machine, device, or other facility made by people

*Environment is a
very broad term...*

3.2 COMMUNITY LED ENVIRONMENTAL GROUP

Forgie *et al.* (2001) described community groups engaged in conservation initiatives as:

- operating at a local or community level
- voluntary⁴
- people-centred and participatory
- bound together by a common goal
- having community members make management decisions.

Expertise may be provided by outside agencies, but management responsibility remains with the group. Such groups may use descriptors such as 'stewards of', 'friends of' or 'care' (e.g. beachcare), combined with a place name to connect their activities to a specific location. Other groups may use 'trust' or 'society' as part of their name, reflecting their legal structures⁵.

Increasingly, national and local government is seeking to work with community groups and commercial organisations to achieve environmental outcomes, particularly within the conservation realm.

⁴ Peters *et al* 2015 noted that while such groups in New Zealand typically comprise volunteers, full- or part-time staff may also be employed.

⁵ Peters *et al* 2015

3.3 ENVIRONMENTAL ACTIVITIES

Environmental activities can include:

- Sustainability activities (waste reduction, composting, energy efficiency, clean-ups)
- Education and advocacy activities (campaigns, awareness raising)
- Biodiversity /conservation activities (legal and physical protection, restoration, re-construction, wildlife protection/rehabilitation)
- Environmental quality activities (e.g. planting to protect water or soil quality, air pollution measures, pesticide use reduction)

Many cross over into human health issues, e.g. water quality, organic farming, or energy-efficient home heating. Biodiversity crosses all of the environmental domains and is where many community environmental groups are working, under what is commonly called the natural heritage banner.

Community groups also engage in a range of environmental actions including:

- Awareness raising
- Advocacy / lobbying
- Education / interpretation
- Research
- Policy development/ input
- Training/skills development
- Legal protection/land purchase
- On-the-ground works (walkways, planting, pest control, habitat creation, e.g. pond construction)

Conceptually these activities operate on a continuum from indirect broad reach activities such as awareness raising, to direct action on the ground (Figure 1). They can also operate cyclically, with actions on the ground helping to raise awareness.



Figure 1: Continuum of environmental activities

4. COMMUNITY GROUPS

4.1 PROFILE OF LOCAL COMMUNITY GROUPS

An overview of the profile of community-based/community-led environmental groups in the Rātā region, and their funding needs, was beyond the scope of this Environmental Sector Scan. However, interviewees were all asked about their knowledge of the profile of their local community groups. Their observations, while not exhaustive reflect the diversity of community environmental groups and activities.

Marlborough District was noted as being small, with a very dispersed population, some living remotely on Sounds islands or rural valleys, and a lack of major academic institutions to provide leadership or technical support. All of these factors have hampered the formation and ongoing support of community-led environmental projects.

Conversely Nelson was seen as having a very engaged population with many active groups. The Chatham Islands (population c600) has a couple of community trusts with an environment focus (Taiko Trust, Chatham Heritage and Restoration Trust).

Some biodiversity-related community projects in Canterbury are listed on the ECAN website⁶ and Canterbury interviewees described their community groups as diverse, and with a lot of “long-termers” particularly landcare groups comprising farmers.

More broadly environmental community groups in the Rātā region may:

- Work on private or public land
- Focus on a small, local site or operate across a wider catchment-scale landscape
- Have projects that are one-off or long-term/ open-ended
- Be wholly volunteer-based or have paid staff
- Be initiated or led by professionals / academics (as volunteers)
- Operate independently or work closely with an agency such as DoC or a council
- Be focused on environmental or social outcomes, or both
- Be working on a specific or a range of ecosystem types
- Be newly established or have a long history
- Be formally established (e.g. Registered charities, incorporated societies), or operate informally (e.g. Some rural landcare groups)
- Be local groups or a branch of a larger organisation (e.g. Forest and Bird)

A national survey of 298 environmental groups engaged in conservation projects⁷ found that they typically:

- Comprise volunteers, although staff may also be employed.

⁶ <http://ecan.govt.nz/advice/biodiversity/restoration-trail/Pages/Default.aspx>

⁷ Peters *et al.* 2015

- Involve members who are over 65 years in age, though demographic changes may alter the future composition of such groups.
- Have varied numbers of participants, depending on how participants are defined.
- Are led by participants, who also contribute to project management decisions.
- Commonly operate in partnership with external bodies, such as resource management agencies, who provide groups with goods and services such as training and technical advice.

In 2010 a survey of 362 community groups working in partnership with the Department of Conservation⁸ found that:

- Almost half were doing on-the-ground conservation or restoration work.
- Half of the groups had been established for 10 years or less, while 42 groups had been established for 25 years or more.
- Most had few paid staff and lots of people involved as members, participants or affiliates.
- More than two-thirds of the groups were incorporated societies or charitable societies/trusts.

Similar patterns may exist in the Rātā region. A detailed survey of environment community groups is currently being undertaken by Trust Waikato for their region of operation, and may provide a useful methodology should Rātā Foundation wish to gather such information to help inform their funding models and application.

Regular (e.g. three-yearly) reviews of the environment sector activities and funding needs could be undertaken cost-effectively via online surveys using the Rātā Foundation applicant database as the contact list.

4.2 FUNDING NEEDS

In a national survey of community groups undertaking environmental projects⁹, 35% reported a need for more administrative support for items like staff wages, website development, marketing, financial administration, and legal advice. A further 22% needed greater operational support, including for pest control, plants, and track development, while 8% wanted more technical support such as GIS (geographic information system expertise), monitoring expertise, and remote sensing equipment.

Most interviewees cited paid coordinator fees as the most important funding gap

Community groups in the Rātā region were considered by interviewees to need funding for a similar range of items, including:

- Administration (e.g. rent, insurance, communications, rates, audit /legal fees)

⁸ Hardie-Boyes 2010

⁹ Peters *et al* 2015

- Wages/salary
- Promotion/ membership drives (e.g. advertising costs)
- Fundraising
- Professional advice
- Project plans/ feasibility studies/ H&S systems development
- Permits/consents, preparation/fees (e.g. for species translocations)
- Contracted services (particularly for technical, certifiable or higher risk activities, e.g. chainsaw or herbicide use, or skilled services e.g. project management, outcome monitoring)
- Hardware and consumables (e.g. herbicide, printed brochures, tools)
- Capital (e.g. walkways, storage sheds, vehicles)
- Attendance at conferences, events/ networking/ travel
- Training
- Volunteer costs (petrol, personal protective equipment, training)

Most interviewees cited paid coordinator fees as the most important funding gap, and the support that most contributes to sustainability and successful outcomes for community environmental groups, as this quote illustrates “[paying for coordinators is] so essential....and it’s such good value for money, you probably get \$5 for every \$1 you invest... between all the other funding they pull in, all the volunteer work” (Interviewee #1)¹⁰.

Others listed plans and feasibility studies, administration costs (legal fees, health and safety etc), and training. These items are often exempted by funders, but are the “lugs on a wheel...often overlooked ... but if you don’t have them the wheels fall off” – (Interviewee #1).

Funding for education, awareness and monitoring was also considered a gap in Canterbury, as it is not currently a priority for Environment Canterbury funding.

4.3 MARKERS OF SUCCESS

Understanding success factors can help shape funding priorities and assessments. Interviewees listed these elements as markers or causes of success for either community group sustainability or project outcome (no implied hierarchy):

Groups

- Paid coordinators
- Long-term funding security
- Good governance - strong leadership and well-connected trustees
- Genuinely¹¹ motivated volunteers

¹⁰ Interviewee comments have been kept anonymous and the numbers do not link to the list in the acknowledgements.

¹¹ Rather than pseudo volunteers (e.g. Community service workers, ‘reward-based’ volunteerism)

- Track record (indicator of likely future success), ability to demonstrate outcomes
- Succession plan (not reliant on one driver)
- Solid relationship with key agencies and the community, genuine trust

Projects

- Bigger scale and longer term projects
- Suitable skill sets - right people involved/ access to technical expertise/advice
- Support in local agencies (DOC, council), and of the landowner
- Good planning/ clear vision and objectives, certainty of outcome
- Use of best practice/ standard operating procedures
- Outcome monitoring/recording and reacting (adaptive management)
- Technically/legally feasible (and within the capacity of the groups skills/resources)
- Secure, long-term funding
- Practical – good physical access, close to source of volunteers
- Spin-off effects e.g. share the learning via social media for broader good effect

Collaborative projects¹²

- Common understanding of risks and problems
- Shared outcome/result
- Working agreement or memorandum of understanding
- Clearly defined roles and responsibilities
- Agreed strategy/action plan
- Measures to identify progress
- Operating plans and procedures
- Report, celebrate, and market achievements
- Review, adapt, improve

4.4 MONITORING AND REPORTING

Monitoring and reporting was mentioned as part of best practice by several of the interviewees. They acknowledged that it adds cost to a project, and that could be incorporated into the funding granted.

The scale of funding should set the scale of compliance requirements. For smaller scale funding simple indicators of appropriate use of funding (e.g. receipts, accounts) and outputs (e.g. photos, media articles) should suffice.

For larger and longer-term projects, it is good practice to monitor and report on inputs (e.g. number of traps purchased), outputs (e.g. number of stoats caught) and

...environmental outcomes may take many years to achieve, often well beyond the deadline for reporting back to funders

¹² From the Auditor of the Officer General www.oag.govt.nz/2012/biodiversity/docs/biodiversity.pdf

outcomes (e.g. increase in bird numbers). These not only serve to satisfy funders of appropriate and worth-while use of public funds, but, perhaps more importantly, provide the information need by the group to assess and if necessary adjust or adapt their programme to ensure they are on target.

However, along the spectrum of monitoring and reporting from input to output to outcome monitoring it becomes¹³:

- Harder to actually measure anything
- More ambiguous and less clear what is actually happening
- Harder to have control over the outcome
- A longer time frame in which to determine what actually happens
- More affected by confounding and often unanticipated external factors.

It is a salient point that environmental outcomes may take many years to achieve, often well beyond the deadline for reporting back to funders.

One interviewee suggested it would be helpful to funders if each funding body had a standard database to record the outputs of what they fund. This would provide a nationwide picture of achievements from the community funding sector (e.g. number of traps bought, number of trees planted, number of volunteer hours contributed).

¹³ Nowland-Foreman. G. 2016

5. ENVIRONMENTAL ISSUES AND PRIORITIES

5.1 NEW ZEALAND'S ENVIRONMENT

In its 2015 Business Growth Agenda¹⁴, the New Zealand government highlighted the importance of our environment: “As well as underpinning our economy, New Zealand’s natural environment is integral to our sense of national identity and has important cultural and recreational significance.”

“As well as underpinning our economy, New Zealand’s natural environment is integral to our sense of national identity and has important cultural and recreational significance.” MBIE 2015

The Office of the Auditor General provided more detail in 2012, particularly around biodiversity:

“As a remote and isolated group of islands, New Zealand has a wealth of biodiversity. Much of New Zealand’s indigenous biodiversity is endemic (... the flora and fauna do not live anywhere else), with small, self-sustaining, and site-specific populations. These characteristics make populations especially vulnerable to extinction from predation by introduced pests and diseases or from catastrophic events.

The state of New Zealand’s biodiversity is an important indicator of the health of the country’s ecosystems. Those ecosystems underpin the country’s prosperity and well-being by providing ecosystem services such as;

- *soil retention,*
- *water purification,*
- *improving water yield from catchments,*
- *managing carbon, and*
- *hazard reduction (such as the role wetlands play in reducing the severity of floods).*

The country’s lands and waterways are also an essential part of New Zealand’s “clean and green” image, which has helped to make tourism one of New Zealand’s most lucrative industries.”

¹⁴ Building Natural Resources chapter

Environment Aotearoa 2015¹⁵ is our most recent report on the state of the New Zealand environment. It outlines the importance of having a healthy environment. In reporting on trends and the current state of the environment, the report notes in its summaries that:

- 😊 The clarity of our fresh water has improved.
- 😊 Overfishing, seabed trawling and by-catch of protected marine species has declined.
- 😊 Some harmful air emissions from transport and home heating are reducing, and air quality showed a significant improvement since 2006.

However:

- 😞 Global greenhouse gas emissions, the amount of carbon dioxide in our atmosphere and average temperatures have increased.
- 😞 Sea levels and ocean acidity have risen.
- 😞 The diversity and conservation status of some indigenous species has declined.
- 😞 Water quality in rivers that run through intensively used land has worsened.
- 😞 More than 75% of soils under dairy farming are badly affected by compaction.
- 😞 Exotic pests are found over almost all mainland areas of New Zealand.
- 😞 Around one third of our seabirds and marine mammals are threatened with extinction, and Māui's dolphin is now one of the rarest marine mammals in the world.

¹⁵ Ministry for the Environment 2015

5.2 RĀTĀ REGION ENVIRONMENTAL FEATURES AND ISSUES

The Rātā Foundation’s region comprises the northern and upper eastern sides of the South Island and the Chatham Islands. It is geographically and ecologically diverse, ranging from snowy 2400 m peaks down to sea level. Parts of the region are considered biodiversity ‘hot-spots’ because they host a large number of endemic species (plants or animals found only in that area), including the Arthur Range in Nelson and inland and coastal Marlborough¹⁶. A snapshot of distinctive environmental features of each of the four areas of the region is presented in Figure 2.

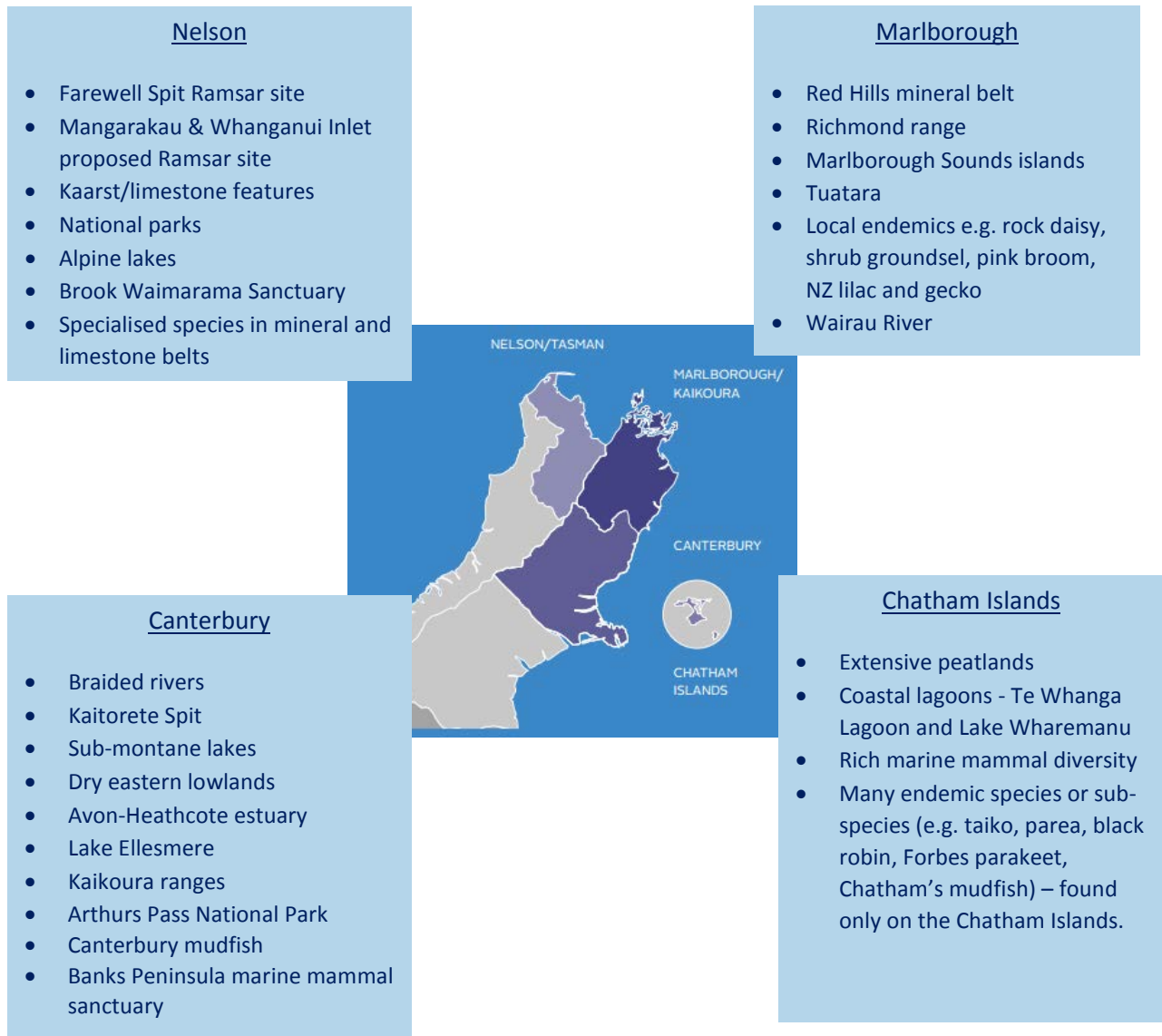


Figure 2: Rātā Foundation region with some key environmental features

¹⁶ www.landcareresearch.co.nz/publications/innovation-stories/endemism-hotspots

An overview of the local 'State of the Environment' for each of the four areas of the Rātā Region is summarised here, and in more detail in Appendix 2.

In Nelson/Tasman:

- Some pastoral streams have poor water quality, although 41 of 60 water quality attributes showed an improvement between 2010 and 2014.
- Air and coastal water quality are generally good, but sediment previously washed off the land is affecting coastal water clarity in places.
- Coastal and lowland areas in Nelson City have suffered almost total loss of indigenous plant and animal species, with many surviving remnants under threat from plant and animal pests.
- In 2008, less than 9% of the remaining lowland wetlands were formally protected¹⁷, other under-protected ecosystems include lowland forest and shrubland, coastal dunes and flats.
- There is a lack of published trend¹⁸ information on biodiversity.

In Marlborough:

- Lowland south Marlborough has very little native vegetation cover left and the area is classified as a "threatened environment". Remaining sites are often small, fragmented and impacted by farm stock, feral animals and weeds.
- Rivers are free of invasive pest fish, but didymo, yellow flag iris and lagarosiphon are established in many waterways.
- Lack of public awareness of plant pests is increasing the threat of weed spread and the incursion of new species.
- Most of the beaches rate 'Very Good' to 'Fair' for water quality
- Monitoring of Marlborough's estuaries is too recent to show trends.

In Canterbury¹⁹:

- Continued loss of vulnerable indigenous biodiversity in the heavily depleted coastal zone, lowland plains and foothills, and inter-montane basins.
- Canterbury hosts more threatened plant species than any other NZ region.
- Over 50 rare or threatened plant species are endemic to (only found in) the Canterbury region, and 30 invertebrate species endemic to Banks Peninsula. The ecosystems in which these species live are also often highly distinctive, e.g. Canterbury's braided river systems and limestone outcrops, and support specially adapted native species.
- Only 2 lowland forest remnants are left on Canterbury Plains, just 60 ha of Canterbury dryland plains vegetation is legally protected, and lowland indigenous character is diminished to patches of kanuka and scattered trees - the last habitats for many native species.
- The coastal margin is under pressure from housing development.

¹⁷ Formally protected means through legal mechanisms as for instance a reserve or covenant

¹⁸ To analyse trends over time that may indicate static, improving, or declining state, long term monitoring data is needed.

¹⁹ The state of the environment report from which most of this information was derived was published prior to the Canterbury earthquakes, which may have had significant effects on sedimentation in waterways and the extent of wetlands.

- High country lakes and inland reaches of rivers have good water quality while shallow coastal lakes and the lower reaches of rivers are nutrient-enriched. Nutrient enrichment can affect how suitable rivers are for aquatic plants and animals to live in.

On the Chatham Islands:

- Waterways are naturally enriched with phosphorus but relatively low nitrogen levels are helping maintain water quality and limit algal blooms.
- Native fish are abundant and aquatic pest species are absent.
- Forest cover is now rare in much of the main island, and many small forest remnants are under pressure from stock and wind damage.
- By 2008, nearly 3000 ha of privately-owned land had been protected by fencing, often as part of covenant agreements.
- Habitat protection and pest control has contributed to an increase in population of the Chatham Islands pigeon (parea).

..neither the literature nor the interviews unearthed any robust systems for.. prioritisation between environmental domains

5.3 ENVIRONMENTAL PRIORITIES

With environmental grants generally being over-subscribed, funders must choose between applications on the basis of environmental priorities, as well as on the likelihood of success and cost-effectiveness.

Neither the literature nor the interviews unearthed any robust systems for, or evidence of, prioritisation between environmental domains (such as air, water, biodiversity etc.).

Environment 2010²⁰, released in 1995 was the first, and to date only, comprehensive statement of environmental priorities and strategies developed by a New Zealand government. Its vision for the New Zealand environment by 2010 was: “a clean, healthy and unique environment, sustaining nature and people’s needs and aspirations.” While it listed 11 priority areas (see side box), it did not prioritise *between* them.

Generally, council funding between environmental domains appears to be based on a combination of legal requirements, historic spend and political decisions. Prioritisation tends to occur more flexibly within domains, often on the basis of state of the environment monitoring highlighting particular issues, or public expressions of concern.

Environment 2010 priority issues (summarised):

1. Managing our land resources- (soils)
2. Managing our water resources- (quality / quantity)
3. Maintaining clear, clean, breathable air
4. Protecting indigenous habitats and biodiversity
5. Managing pests, weeds, and diseases
6. Sustainable fisheries
7. Managing the environmental impacts of energy services (energy efficiency);
8. Managing the effects of transport services
9. Managing waste, contaminated sites and hazardous substances
10. Reducing the risk of climate change
11. Restoring the ozone layer

²⁰ Ministry for the Environment, 1995

The Department of Conservation focus is mostly on heritage (physical, cultural, biodiversity) and recreation. Its spend is driven hierarchically by its *Statement of Intent*²¹ (see box), then (for biodiversity) Prescriptions for Ecological Management Units (determined through a scientific process²²) and finally at the regional level, Business Planning (4 yearly and annual).

DOC Statement of Intent 2016-2020, intermediate outcomes

1. A full range of New Zealand's ecosystems is conserved to a healthy functioning state
2. Nationally threatened species are conserved to ensure persistence
3. Nationally iconic natural features and species are maintained or restored
4. Nationally iconic species are managed to ensure their populations are maintained or restored
5. Locally treasured natural heritage is maintained or restored in partnerships
6. Public conservation lands, waters and species are held for now and future generations

State of the environment (SOE)²³ reports produced by the Ministry for the Environment and by local authorities offer the most compelling evidence for areas that are most in need of work. The national issues and trends are outlined in the most recent national SOE Environment Aotearoa 2015 (summarised in section 4). While the 2015 SOE report did not prioritise between domains, biodiversity loss was described in New Zealand's 1997 SOE report as our most pervasive environmental issue. Biodiversity is under pressure in most areas of New Zealand. Canterbury has been described as undergoing exceptionally high current rates of biodiversity loss - *disappearing faster than databases can keep up...and the current biodiversity loss in this region is described "internationally and nationally significant and extreme"*²⁴.

At the local level, regional state of the environment reports for the four Rātā areas indicate that the priorities for community action are likely to be:

- Natural habitat protection (legal and physical) and restoration in lowland areas.
- Plant and animal pests.
- Water quality in lowland areas under intensive land uses, particularly farmland.
- Protection of coastal areas from land development and effects of sea-level rise.

Table 1 in section 5.4 lists key issues for each environmental domain, and opportunities for community involvement.

Within the biodiversity domain, prioritisation is more clearly defined, usually on the basis of a set of relatively robust criteria (see section 5.5).

²¹ Department of Conservation, 2016

²² The Natural Heritage Management System, see www.doc.govt.nz/about-us/our-role/managing-conservation/natural-heritage-management/identifying-conservation-priorities/

²³ This is a legal requirement of councils under section 24 of the Resource Management Amendment Act 1993. The Ministry for the Environment also has a statutory duty under the Environmental Reporting Act 2015 to publish a synthesis report for all environmental domains every three years.

²⁴ Presentation by Susan Walker, Landcare Research, to Environment Canterbury "What is dryland biodiversity and why is it important in Canterbury?" 21 April 2015

5.4 POTENTIAL COMMUNITY GROUP RESPONSE

While not exhaustive the following table outlines the key issues identified in state of the environment reports and policy documents, and the feasible actions community groups working for the environment are already, or could be involved with. **Table 1:** Summary of key issues and opportunities for community group response, by environmental domain

Key issues (no implied hierarchy)	Feasible key actions for community groups
Air/ climate: Air generally doing ok except for localised areas. Mainly the role of local government with limited scope for community group involvement beyond advocacy. Much uncertainty around climate change timeframes and local-level impacts.	
<ul style="list-style-type: none"> • Pollution from particulates • Climate change/ sea-level rise 	<ul style="list-style-type: none"> • Support with e.g. sustainable home heating • Education • Advocacy – e.g. for more public transport, cycle ways, car-pooling initiatives • Land purchase for coastal habitat retreat • Pest surveillance and control
Coastal/ marine: The most serious long-term pressures on our marine environment are likely to be caused by climate change (acidification, sea level and temperature changes). Limited data on litter pollution. Sedimentation and localised pollution in some areas.	
<ul style="list-style-type: none"> • Invasive species • Habitat loss • Water quality • Coastal erosion • Stock grazing • Sea-level rise • Pollution (plastics, contaminants, sewage) 	<ul style="list-style-type: none"> • Surveillance (Citizen Science/ honorary rangers) • Pest and weed control • Fencing, planting buffers, restoring dune/estuary habitats • Purchase/ protect land to allow for coastal retreat of natural habitats • Litter clean-ups • Advocacy and education (e.g. avoiding plastic bags)
Freshwater: An area of great concern for the community, given health as well as amenity/biodiversity issues. Mostly linked to diffuse pollution from farmland, and an area where council and landowners are the key players (effluent and riparian management). Some community responses, e.g. landcare groups.	
<ul style="list-style-type: none"> • Nutrient enrichment • Contaminants – sediments, heavy metals etc • Loss of riparian cover (shade, shelter) • Fish barriers 	<ul style="list-style-type: none"> • Riparian fencing and planting • Fish ladders/ ropes (with council consent) • Litter traps
Land (soil/ geophysical features): Issues mainly linked to landuse and within the realm of councils, landowners and industries.	
<ul style="list-style-type: none"> • Soil erosion • Soil compaction • Contamination • Loss of /damage to geological heritage features • Agricultural pests 	<ul style="list-style-type: none"> • Planting, fencing unstable slopes • Legal protection/purchase • Education • Most soil management actions are more suited to landowners and developers, guided or controlled by council

Natural habitats/ biodiversity: Cuts across all of the environmental domains, and continues to decline. The area where community groups are mostly focussed and capable of making a direct difference.

<ul style="list-style-type: none"> • Habitat loss and fragmentation • Animal pests and weeds • Stock grazing • Altered hydrology (e.g. drainage or irrigation) • Wildlife disturbance (e.g. vehicles on dunes, dogs in kiwi zones) 	<ul style="list-style-type: none"> • Legal protection/ purchase • Plant buffers/ corridors/ riparian zones/ spawning sites etc • Control animal and plant pests • Fence from stock • Re-introduce 'lost' species • Restore water levels or plant buffers to intercept irrigation drift • Education (e.g. about pets and nesting seabirds) • Advocacy, e.g. submissions on policy/ consent decisions • Enhance access for greater engagement (public walkways, interpretation etc)
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5.5 BIODIVERSITY PRIORITIES

Biodiversity is one of the main environmental domains where community groups are operating. As such it is likely to be an area of demand for Rātā Foundation funding. More detail on biodiversity priorities is provided for the Foundation in this section.

In addition to the environmental gains that can be made through community conservation projects, spending time in nature has significant social benefits²⁵, including mental and physical health and fitness, social bonding and stress reduction. Studies have shown that children who play outside are smarter, happier, more attentive, and less anxious than those who spend more time indoors²⁶.

The greatest threats to biodiversity are habitat loss and plant and animal pests. Protection of biodiversity is a whole-of-community responsibility, and much work has gone into prioritising areas of greatest need for protection and restoration, although often this stops at principles or criteria, rather than producing actual maps which are expensive and can become outdated.

National priority-setting documents for biodiversity management include:

- National Biodiversity Strategy 2000²⁷
- National Priorities for Protecting Rare and Threatened Native Biodiversity on Land²⁸
- Department of Conservation Statement of Intent²⁹
- The New Zealand Biodiversity Action Plan 2016-2020³⁰

²⁵ E.g. Ryan *et al.* 2010

²⁶ E.g. <http://childmind.org/article/why-kids-need-to-spend-time-in-nature/> and http://awsassets.wwfnz.panda.org/downloads/wwfnz_not_just_trees_in_the_ground.pdf

²⁷ MfE and DOC 2000

²⁸ MfE and DOC 2007

²⁹ DOC 2016 (a)

³⁰ DOC 2016 (b)

Local priority-setting documents include:

- Regional/ district policy statements or plans
- DOC Conservation Management Strategies
- Local Biodiversity Strategies (Canterbury, Nelson Nature³¹)
- Iwi management plans

Ngai Tahu's 2025 vision document produced in 2000, has a number of key outcomes relevant to biodiversity including³²:

- Increasing the abundance of, access to, and use of mahinga kai.
- Appropriately protecting all wahi tapu, mahinga kai and taonga tuku iho according to Ngai Tahu values and interests.
- Enhancing waterways to support healthy populations of species of importance to Ngai Tahu.

Environment Canterbury, regional fresh-water related biodiversity priorities

1. Braided rivers
2. Wetlands
3. Mahinga kai: Longfin eel / tuna
4. Mahinga kai: fish passage
5. Ecologically significant habitats, key sites and corridors
6. Coastal lagoons, river mouths and spring-fed coastal streams
7. Invasive weeds and pests in areas of biodiversity value

Source: Environment Canterbury
<http://ecan.govt.nz/publications/Council/regional-cttee-agenda-20160614.pdf>

In their Kaikoura Runanga Environmental Resource Management Plan 2007³³, Ngati Kuri seek the following outcomes for biodiversity:

- Protection, restoration and enhancement of the productivity and life supporting quality capacity of mahinga kai, indigenous biodiversity, water, land, air, natural habitats and ecosystems, and all other natural resources valued by Ngāti Kuri.
- Protection of mahinga kai, indigenous biodiversity, water, land, air, natural habitats and ecosystems and all other natural resources valued by Ngāti Kuri from inappropriate use or development.
- The realm of Tangaroa is flourishing and the mahinga kai of Tangaroa is readily available to tangata whenua and their local communities.

³¹ Nelson Nature priorities 2013- 2016 included maintaining and restoring ecosystem health in or for Tasman Bay, Maitai River, Whakapuaka Valley, Delaware Bay, as <http://nelson.govt.nz/environment/biodiversity-2/nelson-biodiversity-strategy-2-1287/>

³² Ngai Tahu 2000

³³ Te Rūnanga o Kaikōura 2007

Most policies for protecting natural areas, including criteria in council plans tested through the courts, generally follow well established and adopted scientifically based concepts of³⁴:

1. Representativeness
2. Rarity and distinctiveness (e.g. Locally endemic species)
3. Naturalness
4. Ecological context
5. Diversity of ecological units and patterns
6. Size and shape
7. Ecological viability

Additional criteria may include:

8. Sites previously assessed and identified as being of ecological value (usually based on the above criteria e.g. In a district plan schedule or published report)
9. Sites important for passage or stepping stones of migratory species
10. Non-ecological matters (e.g. cultural, historical or local community values)

The 2007 report on National Priorities for Protecting Rare and Threatened Native Biodiversity on Land includes four national priorities³⁵ (ecosystems associated with threatened environments; severely depleted ecosystems; naturally rare ecosystems, and habitat for our most threatened species). These fit neatly within the broader list of regularly used criteria above, and have been used by the Department of Conservation (James Holborrow pers. comm. 31 Aug 2016), and Environment Canterbury (Frances Schmechel pers. comm. 31 Aug 2016) to help set their ecological priorities.

A common theme from interviewees was, for a given ecosystem type, to “*Protect the best, then focus on the rest*”. This approach is scientifically robust - given the complexity of ecosystems, holding the ones that are still relatively intact and functioning is much more cost effective than trying to repair or re-create damaged or lost ones.

Habitat/ecosystem protection, including from pests, is often the most effective way to protect native species, however some may need specific actions, e.g. planting seasonal food sources or riparian vegetation in spawning sites.

While planting new areas is a popular community group activity, this is a long-term game, with many uncertainties, risks of spreading pests (e.g. invasive ants, plague skinks in potting mix), and high likelihood that the end point will be less diverse than a naturally established site that developed under natural conditions.

³⁴ Guidance on applying these types of criteria are available on the Quality Planning Website www.qualityplanning.org.nz/index.php/planning-tools/indigenous-biodiversity/describing-and-evaluating-biodiversity-values. Note that size and shape, ecological viability and naturalness are interlinked concepts around the current health of the system and resilience to external threats.

³⁵ National Priorities for Protecting Rare and Threatened Native Biodiversity on Land 2007

Priority actions for biodiversity are therefore in this order:

1. **Legal protection** – to prevent further deliberate loss, this may involve land purchase, covenanting costs, or advocacy for regulations (e.g. fishing regulations, land clearance rules). *“Protect the best, then focus on the rest”.*
2. **Pest and livestock control** – to prevent further insidious loss.
3. **Restoration/enhancement** – of degraded sites, to repair past damage (e.g. install fish passage, return lost species, restore hydrology, plant enrichment species, plant buffer/riparian zones).
4. **Re-construction** – starting over, including planting corridors or re-creating lost ecosystems, with a focus on the most depleted systems (where feasible).

In terms of where to focus action in order to halt the decline of biodiversity, recent work³⁶ confirms that “New Zealand’s lowest, flattest, warmest and driest environments have lost high proportions of their indigenous cover and what remains is poorly protected, while the highest, steepest, coolest, and wettest environments have been less reduced by human land use and are much better protected.” By way of example, this is shown graphically for the Canterbury region in Figure 3.

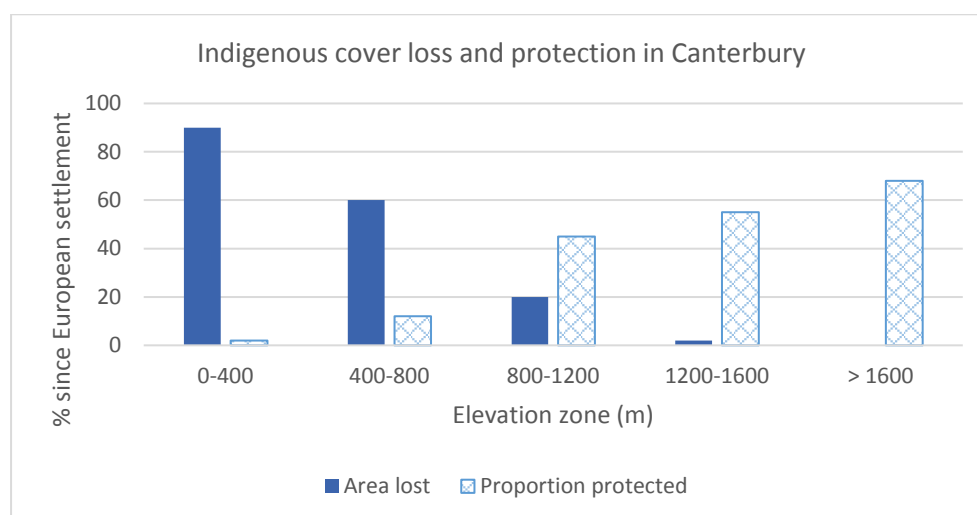
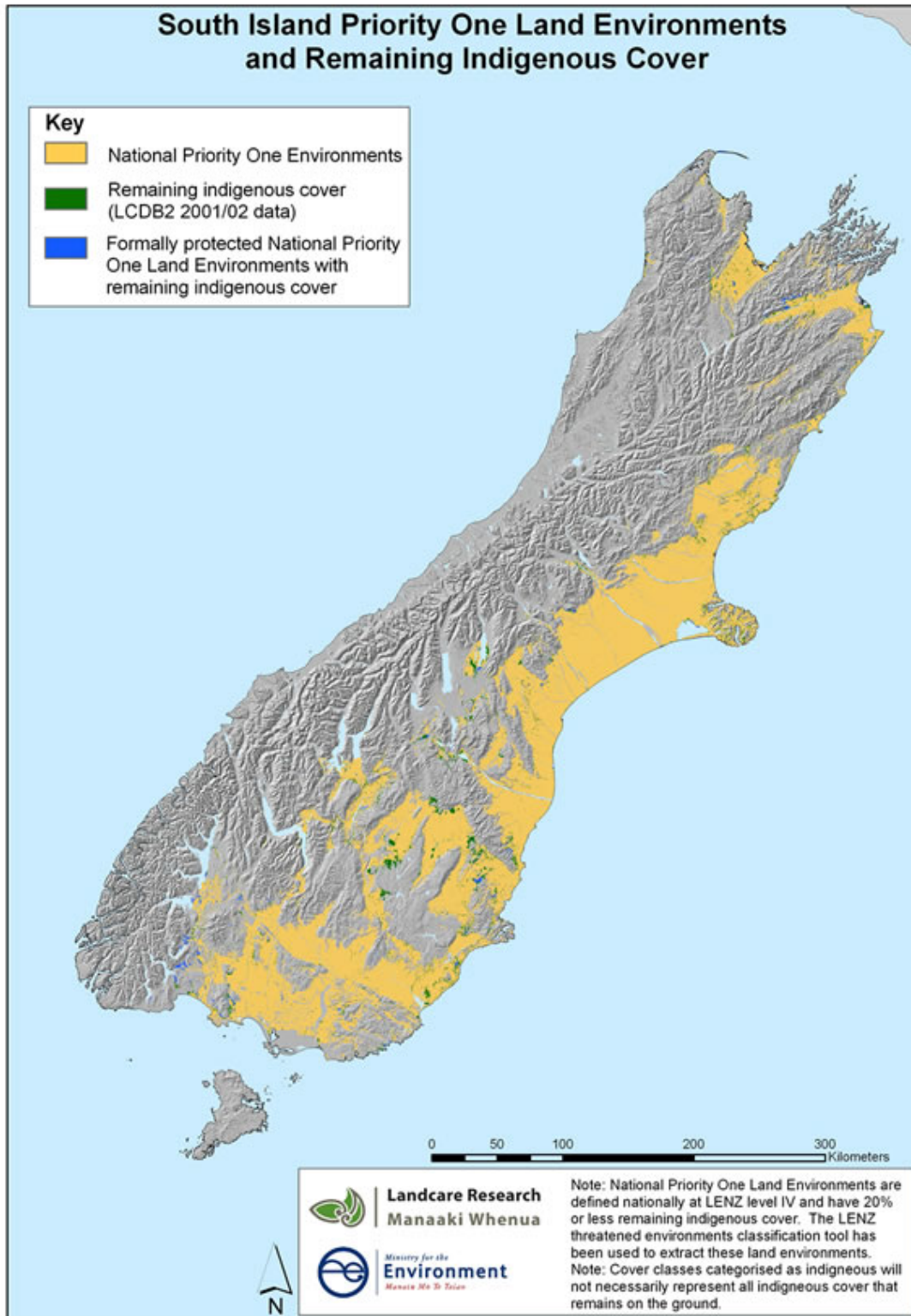


Figure 3: Indigenous cover loss and proportion of the elevation zone in DOC reserve or QEII covenant. Source: Biodiversity Strategy Advisory Group, 2008.

Sites in heavily modified lowland areas can be a challenge to manage because of their multiple stressors, on the plus side they are also likely to be in close proximity to volunteer sources. Map 1 shows areas of the South Island³⁷ that are national priorities for protection of biodiversity (acutely and chronically threatened land environments, where 20% or less of the land cover remains in indigenous cover).

³⁶ Cieraad *et al.* 2015

³⁷ Note that the Chatham Islands were not included in the Land Environments mapping and assessment project undertaken by Landcare Research.



Map 1: National Priority 1 land environments (areas of similar physical environments where 20% or less remains in indigenous cover, classified collectively as acutely and chronically threatened environments). Note, the analysis of Priority 1 land environments does not include Chatham Islands. Source: www.mfe.govt.nz/more/biodiversity/protecting-nz-biodiversity/statement-national-priorities-biodiversity/national-2

Natural areas previously assessed for their ecological significance using generally accepted criteria such as those listed above, and robust peer review, are likely to be priorities for protection and management. Those that have been mapped may form the basis of quick checks for Rātā Foundation assessment staff, including;

- DOC Ecological Management Units (EMUs),
- Council significant natural area schedules (SNAs)
- QEII covenants
- Protected Natural Area (PNA) sites

Table 2 provides a summary of the types of sites that are likely to be high priorities for biodiversity protection, maintenance and/or restoration. Rātā Foundation application forms could ask applicants if their project involves any of these pre-assessed sites.

Table 2: Examples of priority ecosystems or habitats for biodiversity maintenance

Priority element	Relevant criteria ³⁸	Examples (contact relevant local authority for further local examples)
Ecosystems within threatened environments	National priority Representativeness and rarity	<ul style="list-style-type: none"> • Acutely and chronically threatened environments (land environments where <20% remains in indigenous cover) Select “Which areas of indigenous vegetation are under threat?” on the interactive online map at http://ourenvironment.scinfo.org.nz/ourenvironment In Canterbury these are: the lowland plains and coast, coastal hill country, inter-montane basins and foothills of the inland ranges (Biodiversity Advisory Group 2008)
Naturally/originally rare ecosystems – particularly threatened ones	National priority Rarity	72 systems nationwide, 45 of them threatened, including <ul style="list-style-type: none"> • Coastal turf, coastal rock stacks • Braided riverbeds • Inland salt pans and dunes • Subterranean • Marine mammal rookeries Source: MfE and DOC 2007 Full list: Wiser <i>et al.</i> 2013 In Canterbury these include (Biodiversity Advisory Group 2008): <ul style="list-style-type: none"> • Volcanic rock outcrops (e.g. Banks Peninsula) • Limestone rock outcrops (e.g. Awahokomo Karstland in the Waitaki Valley) • Braided riverbeds (e.g. the Waimakariri, Waitaki, Clarence/Waiiau-toa, Ashley/Rakahuri and Rakaia rivers) • Dune deflation hollows (e.g. Kaitorete Spit) Full list and threat status of the naturally uncommon ecosystems: www.landcareresearch.co.nz/publications/researchpubs/uncommon-ecosystems-book-section.pdf

³⁸ Either National Priority (from MfE and DOC 2007) or the list of generally accepted criteria in section 6.2 of this document

Severely depleted ecosystems	National priority Rarity	<ul style="list-style-type: none"> • Freshwater wetlands • Dunes Source: MfE and DOC 2007
Under-protected ecosystems	Representativeness and rarity	Less than 50% remaining areas in protection <ul style="list-style-type: none"> • Matagouri or grey scrub • Depleted grassland (tussock) • Mānuka and or kānuka • Broadleaved indigenous hardwoods • Herbaceous freshwater vegetation Full list: Cieraad et al 2015 Maps of these vegetation types is available on the Landcover Database, see www.doc.govt.nz/our-work/maps-and-data/ For Canterbury land-based ecosystems see also www.doc.govt.nz/Documents/getting-involved/landowners/nature-heritage-fund/nhf-canterbury-protection-strat.pdf
Threatened species and their habitats	National priority Rarity	Priority order <ul style="list-style-type: none"> • Nationally Critical • Nationally Endangered • Nationally Vulnerable • At risk (Declining, Recovering, Relict, Naturally Uncommon) Various published lists, see DOC for latest data www.doc.govt.nz/about-us/science-publications/conservation-publications/nz-threat-classification-system/
Distinctive/ iconic local ecosystems	Distinctiveness	Not defined, examples may include; <ul style="list-style-type: none"> • Braided rivers • Limestone systems • Habitat for regionally endemic species
Areas of unusually high natural biodiversity or levels of endemism	Distinctiveness and diversity	Not defined, examples may include; <ul style="list-style-type: none"> • Powelliphanta snail habitats • Offshore islands • The Arthur Range in Nelson, South Canterbury and inland and coastal Marlborough – flora endemism “ hot-spots” Source: www.landcareresearch.co.nz/publications/innovation-stories/2015-stories/endemism-hotspots

5.6 PRINCIPLES FOR BIODIVERSITY ACTIVITIES

When it comes to prioritising biodiversity actions for any given ecosystem type (along the spectrum from awareness to action), the following principles are recommended.

1. **Awareness is over-rated.** While education and advertising can be effective in creating public awareness and in changing attitudes, numerous studies show that behaviour change rarely occurs as a result of simply providing information and

advice³⁹. For funders this means that projects hoping to increase environmentally friendly behaviours in individuals need to go beyond simply providing information.

2. **Bigger is better.** As indicated in the standard criteria sets, size and shape matter when it comes to ecosystem resilience (the ability to withstand pressures like weather, pests, pollution and to recover from disturbance, e.g. large enough habitat to maintain wildlife populations).
3. **Get the basics right.** When reconstructing ecosystems and planning to re-introduce lost species, you need to build the house first, then ask for the “ice-cream species” e.g. *“if you haven’t got good bird diversity, the hardy species present, it’s unlikely you would be able to support more sensitive species”* – interviewee #2
4. **Continuity.** Ecosystem management is a long term game, for example pest control over small area or short time period has little ecological benefit, it is more a “feel good” social benefit, but it *“can be a starting point to something that can be scaled up, starting a connection with nature, important but perhaps for smaller scale grants”* – interviewee #2
5. **Value added.** Environment Canterbury is embarking on a review of their Immediate Steps funding⁴⁰, using a system to compare current ecological value or condition of a site against likely value of a given planned activity, minus the expected value of the site in the absence of any active management. Different ecosystems or types of projects would need to be individually assessed using their own set of valuation methods. This is similar to the Natural Heritage Management System operated by DOC. Both systems are rigorous but would require significant technical expertise to apply, and are better suited to whole of budget prioritisation rather than contestable fund analysis.

³⁹ E.g. Kollmuss and Agyeman, 2002, McKenzie-Mohr, D and W. Smith, 1999

⁴⁰ Ball 2016

6. EMERGING ISSUES AND TRENDS

6.1 CLIMATE CHANGE

Agency interviewees were all fully cognisant of the issue of climate change, and the predictions for their region/district, including sea-level rise, rainfall pattern and the potential for pest species to expand their range. However, all who raised this emerging issue also did not consider it would materially alter their priorities or activities in the very near future, other than around natural hazard planning. Because of so much uncertainty at the site-specific level, and the timeframe around which significant change could or would occur, none of the agencies had a stated policy of “writing off” areas subject to likely change, such as coastal wetlands. Such sites also have intrinsic value (i.e. they are worth keeping for the current generation to enjoy even if their future is unsure), and retaining them now may buy time to find other solutions, e.g. look at securing landward areas to allow ecosystem retreat. *“Should we hang onto things that might disappear? You could say the same about rhinoceroses...”* interviewee #3.

6.2 HEALTH AND SAFETY LEGISLATION

The implications of the 2016 law changes were raised by a couple of interviewees. Increased responsibilities and penalties may become a deterrent to some community groups, particularly those with employees, which therefore fall into the PCBU⁴¹ category. In this category regular volunteers become volunteer workers, and both volunteers and Trustees become more liable for any work-related incidents. Many volunteers may be unaware of their obligations under the new act.

A survey run in 2015 by Conservation Volunteers NZ found that of 100 community groups operating in New Zealand:

- 81% do not consistently have information on pre-existing medical conditions
- 78% do not consistently do a risk assessment for their project/activity
- 72% do not consistently have a first-aid trained person on each activity
- 52% do not consistently have a first-aid kit on site/available
- 66% do not consistently have emergency contact details for volunteers

Health and safety requirements are important for keeping volunteers, staff and the public safe, however complying with the law and the plethora of policies, forms and reports that need to be generated may become a barrier for many community groups. Funding may increasingly be sought by such groups for systems development as well as for health and safety equipment.

⁴¹ Person conducting a business or undertaking

6.3 NEW ZEALAND BIODIVERSITY ACTION PLAN 2016-2020

An update of the New Zealand Biodiversity Strategy (2000) was released in 2016. It contains five goals to help “turn the tide” on continuing biodiversity decline:

- A. Mainstreaming biodiversity across government and society
- B. Reduce pressures on biodiversity and promote sustainable use
- C. Safeguarding ecosystems, species and genetic diversity
- D. Enhance the benefits to all
- E. Enhance implementation

Collaboration between central and local government, iwi, resource managers, communities, landowners and businesses was seen as the key to achieving the goals. Several examples of collaboration for biodiversity are showcased in the document.

6.4 PREDATOR FREE 2050

This new government initiative is an ambitious goal to eradicate possums, rats and stoats from New Zealand by 2050⁴². The focus is on developing breakthrough predator control tools and techniques, and connecting efforts already underway across communities, iwi, private businesses, philanthropists, scientists and government.

Most interviewees spoke of PF2050 as an emerging issue, but had mixed reactions. While it was felt by some interviewees to be a positive initiative that would galvanise national effort, others were more cautious in regards to whether it was achievable and questioned the unintended consequences on other pest species (e.g. mice and rabbits). Those working in the community sector were unsure about the implications for funders and for community groups, raising the following questions. Would funding be diverted into this goal, reducing opportunities for other projects? Would funders increase their focus on pests to support this work, or look to plug gaps for the non-targeted pests? Would groups change their focus to match funding opportunities (and perhaps reduce effort on other worthy environmental outcomes)? This raised the wider questions around the value of social engagement vs environmental outcomes, with some interviewees considering urban pest control having more social than environmental benefit “*getting people out clearing traps is a powerful engagement/ education approach*”- interviewee #4.

The PF2050 project is a very new initiative, and interviewees involved in environmental funding were unsure yet whether their organisation would lend their support towards the goal, or seek to fill other gaps such as pests other than the targeted three.

⁴²www.doc.govt.nz/our-work/predator-free-new-zealand-2050/

6.5 UP-SCALING

New terms (and corresponding expectations) have begun to appear in some New Zealand funding application requirements in the past few years, including:

- transformational
- innovative
- collaborative

Some private/family philanthropy initiatives, e.g. the NEXT Foundation, Morgan Foundation have focussed their contributions on fewer, larger “legacy” projects, for which these terms are often core criteria. They are responding to difficult, large-scale issues, by forming partnerships between funders and agencies to create a collective impact via a ‘systems’ approach (i.e. seeking long-lasting solutions to a defined problem by fully analysing all of the elements/ people involved to improve the whole system). With no clear definition of terms, some interviewees took transformational to mean geographic scale (e.g. planting pathways across the landscape or linking together multiple projects in a catchment). Momentum Foundation (Waikato-based funders) defines transformational as *“the outcomes disrupt the status quo to catalyse and accelerate much needed change.”*⁴³

Such “game-changer” aims and commanding terms can be intimidating to some community groups, so it is important that funders consider who they are targeting, and if their expectations of community groups are realistic.

Some interviewees are seeing evidence of collaboration among community groups, in some cases facilitated by regional forums or agencies, e.g. Nelson Nature.

Transformational and collaborative projects are likely to operate at large scale, perhaps even nationally, involve many players including high profile professionals, be highly formalised, and carry a correspondingly hefty price tag. They are likely to take many years in the formative stages, and may require significant investments in research. They are also, based on current examples funded by the NEXT Foundation, unlikely to have been initiated or led by community groups. Partnerships can facilitate up-scaling by sharing resources and expertise, but *“they take time to nurture and often eco-restoration groups are dealing with multiple partnerships”*⁴⁴. Rātā Foundation needs to be mindful of the capacity of community groups, for example by continuing to support effective smaller scale applications, and proportional in its funding investment on projects seeking transformational, innovative and collaborative outcomes.

⁴³ <http://www.momentumwaikato.nz/vital-waikato-grant>

⁴⁴ Callister 2013

6.6 MĀTAURANGA MĀORI AND CITIZEN SCIENCE

Traditional and western knowledge collected and held by communities is likely to become increasingly utilised in environmental projects. Peters (2016) highlights the links between mātauranga Māori and citizen science, with data collection, analysis and the co-production of knowledge featuring in both.

Mātauranga Māori is described by Landcare Research as “the knowledge, comprehension, or understanding of everything visible and invisible existing in the universe.” Landcare research has undertaken research into Mātauranga Māori approaches to resource management including the development of a set of complementary environmental indicators that integrates cultural indicators of environmental health with community based and science based indicators⁴⁵.

Peters (2016) describes citizen science broadly as “scientific investigations in which volunteers collect data relating to biodiversity and the environment to enhance our knowledge of the natural world.”

Products like FORMAK and WETMAK⁴⁶ that were designed to guide community monitoring, and websites like Nature Watch that provide space to store data, aim to facilitate more community led data collection and analysis. Funders may start to see more applications for citizen science, including for projects dealing with water quality monitoring, habitat and ecological condition, and biosecurity (pest) issues.

Peters (2016) lists some social outcomes of volunteer participation in monitoring:

- Improved scientific and ecological literacy,
- Greater community involvement in decision-making
- Catalyst for enhancing stewardship,
- Social interaction generating a stronger sense of community and shared purpose.

Nearly 50% of community environmental groups already carry out their own environmental monitoring (Peters, 2016). Most of these groups are reliant on partnerships, often with resource management agencies as the land owners / administrators and as sources of funding or technical advice.

6.7 IWI LEADERSHIP

Two interviewees highlighted the importance of working with iwi. As the treaty settlement process winds up, iwi will have much greater capacity to initiate or become more involved in environmental projects. Established and new community groups may also become more

⁴⁵ <http://www.landcareresearch.co.nz/about/sustainability/voices/matauranga-maori/what-is-matauranga-maori>

⁴⁶ Forest Monitoring and Assessment Kit, Wetland Monitoring and Assessment Kit

engaged in working with iwi from the outset, while funders may increasingly require evidence of collaboration with iwi.

6.8 YOUTH LEADERSHIP

Children and young people are increasingly taking the reins on community environmental projects. Environmental education is becoming more embedded in schools, e.g. through the EnviroSchools programme. Funding enterprises such as Kids Restore New Zealand (Air New Zealand) are encouraging and supporting child-led projects, and producing future leaders in the process. Young people are initiating projects driven through extensive use of social media, for example Sustainable Coastlines and Generation Zero. Increasingly, even long-established groups are adopting these methods, with many groups producing Facebook pages, blogs or using twitter and other social communication tools to promote their project or call for volunteers.

6.9 VOLUNTEERISM TRENDS

Conservation Volunteers predicts⁴⁷ that in the near future volunteers:

- Will be increasingly urban-based
- Won't want to make long-term commitments
- Will be more interested in the 'experience' than the 'task'
- Will offer more 'brains' less 'brawn'
- Will be more 'selfish' and more aware of their options
- Will have higher expectations, expect more professionalism and more say

Dave Sharp of Conservation Volunteers recommends community groups that rely on volunteers seek to:

- Create more opportunities for highly skilled 'managerial' volunteers
- Increase focus on "WIIFM" – What's in it for me?
- Put more focus on the experience rather than the task
- Provide shorter 'snappy' activities - 'micro-volunteering'
- Engage in total social media integration
- Increase focus on the health benefits of volunteerism

⁴⁷ Presentation by Dave Sharp, Conservation Volunteers, at the National Wetland Restoration Symposium, Nelson, February 2016

7. RECOMMENDATIONS

7.1 FUNDING POLICIES AND PRIORITIES

Based on the findings of this environmental sector scan it is recommended that:

1. Rātā Foundation consider funding applications for projects that:
 - Are action-oriented for direct results
 - Are community led
 - Are achievable/ cost-effective
 - Are focussed on environmental priorities (e.g. for biodiversity focus on ecosystems in threatened environments, habitat for threatened or regionally endemic species, and sites of high ecological value that are subject to significant threats)
 - Involve priority actions (e.g. for biodiversity in this order: legal protection; physical protection e.g. pest/livestock control; habitat restoration or enhancement; habitat re-creation/re-construction)
 - Are sustainable long-term, but with some short-term gains/milestones.
 - May have off-site benefits or are scalable for greater outcomes
 - Are environmental education or sustainability programmes, linking action with learning
2. Rātā Foundation consider not funding:

In addition to the Foundation's standard eligibility and exclusions

- Projects that are solely focused on awareness raising/ campaigning without linkages to changes in behaviour/ action on the ground
- Projects that do not have a biodiversity or natural environmental outcome, e.g. beautification/ landscaping projects
- Projects with no community input or of a commercial nature (e.g. research).
- Projects that are, or potentially could be, socially divisive or controversial (e.g. policy promotion, Environment Court action)

For projects that meet the criteria, Rātā consider funding the following elements

- Wages for a full or part-time coordinator
- Funds for contracted services, particularly for specialist or risky tasks
- Administrative costs including insurance, rent, communications,
- Funds for professional development for coordinators and full time staff
- Funds for professional development for staff and regular volunteers
- Funds to support volunteers (petrol costs, health and safety training and personal protective equipment)
- Funds to develop plans or feasibility studies
- Multi-year grants, particularly for restoration projects

- Land purchase and legal protection for good quality ecosystems in acutely and critically threatened environments

Small versus Large Grants Programmes

A detailed split of the types of projects to be funded under either Rātā Foundation’s Small or Large Grants Programme has not been provided as there are many dependant factors, and cost is not always related to value of the outcome.

In general, Rātā Foundation’s smaller investment would be favoured for projects that are:

- One-off (e.g. education campaigns)
- Small-scale (limited geographic area)
- Non-scalable
- Business as usual projects
- Lower priority (e.g. good quality examples of more common ecosystem types)
- Indirect-outcome oriented (e.g. have more of a social outcome than an environmental one, such as walkways in natural areas)
- Straight-forward (low risk of project failure or unintended consequences)

For larger investments Rātā may:

- Offer smaller initial grants for feasibility studies or plans
- Look for evidence of collaboration and/or co-funding
- Proactively seek to work with strategic partners, e.g. DOC, NEXT Foundation
- Prefer to focus on high priority projects
- Request more information in applications, including skill sets of personnel, sources of technical expertise, evidence of best practice etc.
- Institute a two-step application process by calling for expressions of interest and invite a number to submit a full application
- Require a greater level of project output and outcome reporting
- Seek review by the relevant regional council and Department of Conservation office

The cost of misspent funds is minimal with small grants, and the amount sought should be considered in the context of staff time required to do an assessment. Therefore the Foundation may prefer to have an ‘informed opinion’ process for smaller grants, using the funding application criteria as a guide. For larger grants, a more rigorous assessment process will be required. The following section focuses on suggested processes to assist assessments of projects seeking to protect, restore or enhance the environment.

7.2 ASSESSING ENVIRONMENTAL FUNDING APPLICATIONS

Rigorously assessing applications from community organisations wanting to undertake ecological protection or restoration projects will not be simple or mechanical, particularly when it comes to comparing projects across environmental domains (air, land, water, biodiversity etc), and when determining if a site or an activity is a high priority for funding.

Any environmental funding application will require an element of subjective assessment and informed opinion. For biodiversity projects, while the principles and criteria are sound, the gap will be for applicants and assessors to know if their site is an ecological priority. This may require knowledge of threatened environments, threatened species, locally endemic species, and the type of ecosystem subject to the application (based on common classification systems such as the Landcover Database). In most cases only an experienced technical expert with local knowledge will be able to determine or confirm that.

To assist with prioritising between applications, a system could be devised that breaks project success elements down into three core factors and two supplementary ones:

1. Direct outcome
2. Cost effectiveness
3. Outcome potential
4. Indirect benefit
5. Special features

Under such a system, applications can be scored as strong, moderate, weak or not for each of the first three factors. Projects that are strong for the first three should be high priorities for funding, and if they meet the latter two factors, bumped up the list. Projects that are moderate or weak for the first three, might be considered if they are strong for factors 4 and 5. Those latter two factors can also be taken into account when assessing applications for larger grants.

For projects that are site-based, the following table can act as a guide:

Priority for funding	High priority site	Medium priority site	Low priority site
High priority activity	High	High	Medium
Medium priority activity	High	Medium	Low
Low priority activity	Medium	Low	Low

A sample score sheet for assessors is provided in Appendix 2 to help them decide on the strength of the application, however given the wide variety and complex needs of ecosystem types, activities, project scales, geographic location and other factors, some technical expertise will be required to determine whether a project is a strong, moderate, weak or not a candidate for funding. Such a score sheet will need internal review and analysis by Rātā Foundation assessors and management to determine its utility.

Given limited in-house technical expertise, Rātā Foundation may wish to explore the following options for assessing ecological projects:

- Upskill internal staff with technical workshops (e.g. training on threatened environments, naturally rare ecosystems etc).
- Establish a technical review group of relevant staff in the local council or DOC office and hold a multi-party workshop (this may be inefficient for small grants,

particularly if there are multiple funding rounds per year, and may be adversarial if local experts advocate strongly for local projects).

- Filter applications internally, and then send candidate applications to external staff in a relevant part of the region for review.
- Outsource to an experienced, independent person (s).

As well as developing its funding priorities for the Environment sector, Rātā Foundation will need specific criteria to assess applications seeking funding for ecological protection or restoration, as opposed to those of an environmental education/sustainability programme nature which can be assessed against Rātā Foundation's standard assessment criteria. Below is suggested wording for the additional assessment criteria.

“To ensure that Rātā funding aligns with national and regional biodiversity priorities, encourage applications from groups seeking funding for legal protection, maintenance or restoration of (any of these):

- a) Natural habitats that are naturally rare, severely depleted (including freshwater wetlands and sand dunes), within a threatened environment (see note 1) or under-protected nationally (see note 2)*
- b) Nationally threatened or at risk native species and their habitats*
- c) Natural areas that are listed as significant in a regional or district plan or Department of Conservation Ecological Management Unit*
- d) Distinctive local ecosystems, or areas of unusually high natural biodiversity or levels of endemism (species that only occur there).*
- e) Natural areas or projects that align with a relevant and current local biodiversity strategy.*

Notes for applicants:

- 1. For ecological projects at a specific site, use this website to determine if your site is within a threatened environment: <http://www.landcareresearch.co.nz/resources/maps-satellites/threatened-environment-classification/maps>*
- 2. Under-protected ecosystems on land include: Matagouri or grey scrub; Depleted grassland (tussock); Mānuka and or kanuka; Broadleaved indigenous hardwoods; Herbaceous freshwater vegetation.*
- 3. Other than for applications seeking funding for legal protection, priority will be given to projects that are taking place on sites that are legally protected in perpetuity (e.g. reserve or covenant), or that are in the process of seeking a covenant.*
- 4. Maintenance or restoration can include pest control, fencing, water level restoration, buffer planting, habitat creation or enhancement using locally appropriate native species, and any monitoring or surveillance needed to support these activities at your site.*
- 5. For all projects that involve action on the ground, you must provide a letter of support/approval from the landowner for the specific activity you are seeking funding for.”*

7.3 FUNDING, REQUIREMENTS AND USER-FRIENDLY APPLICATIONS

Interviewees have suggested some recommendations for the Rātā Foundation to continue, or consider, doing to encourage and support successful environmental projects. Also in this section are some tips for ensuring applications are user-friendly, based on the author's own experiences when applying for contestable funds.

1. **Multiple projects** – some larger groups (e.g. Fish and Game, Forest and Bird) may be involved in many worthwhile unrelated projects in a region, and in some cases they may be acting as an umbrella for smaller informal community groups. Their size and access to resources such as technical advice may contribute to a successful outcome. Consider allowing multiple applications from one group for separate environmental projects, assessing each on its merits.
2. **“Shiny new things” syndrome** – be open to new ideas but be mindful that environmental projects are often ongoing. It's hard for community groups to secure long-term funding from the same provider when exciting new projects come along. Stack up the refreshing ideas and enthusiasm of new groups against the track record, experience, and established ground work of existing groups doing similar work.
3. **It's complicated** - keep the gate open for some complex environmental projects that don't involve the wider public, especially for the rarer, lesser known ecosystems, and for sensitive or less accessible environments, and highly threatened or poachable species (e.g. orchids, geckos). Small stature, lesser known species and ecosystem types are too often overlooked, and are among our rarest types.
4. **Flexibility** - be guided by, but try not to be too prescriptive about ecological priorities, as it can be hard for groups to direct their activities tightly towards funder priorities. The recommended ecological priorities are not intended to be a suite of exclusive criteria, rather they aim to encourage applications that will maximise biodiversity outcome, and help assessors select between projects when funding rounds are over-subscribed.
5. **Multi-year** – environmental solutions are seldom “spray and walk away”. While advocacy or education campaigns may have a fixed time-frame, restoration projects usually need ongoing pest management. Annual funding cycles are time-consuming and introduce uncertainty for groups. Failure to secure on-going funding can negate the investment of early work. Consider long-term support for groups doing well, perhaps on 3 year cycles subject to meeting agreed milestones (with flexibility – see Stuff happens).
6. **Stuff happens** – allow for flexibility, particularly for longer-term funding. Community environmental projects have many uncontrollable factors, including weather events, rough and remote terrain, individual circumstances (volunteers are at liberty to

change their priorities). Project failure or application deterrence can result from locking in certain deliverables at a certain time at a certain cost, with no roll-over of funding or flexibility to move funds between milestones within an overall fixed fiscal envelope.

7. **Quick reflexes** – consider a system to offer funding at short notice for urgent, unforeseen matters or opportunities, such as a significant or strategic area of land coming onto the market, or an opportunity to collaborate with a newly announced venture or to co-fund a high-ranking project with a newly announced funder. Land purchase is expensive but it may be only way to retain a natural area or feature in perpetuity and is one of the most assured ways to prevent habitat loss.

If each funder requires part-funding from another party, grant-seekers can get caught in a “Catch 22” waiting for that first cab off the rank.

8. **Full coverage** – it can be a major challenge for groups to amass project funding from a range of providers. If each funder requires part-funding from another party, grant-seekers can get caught in a “Catch 22” waiting for the first cab off the rank. With many funding rounds annual only, by the time a group secures full funding, time limits may be exceeded on early grants. Groups are likely engaged in many projects as part of their activity, so granting an application in full could be considered to be a part contribution in the bigger scheme of things.

Volunteers are valuable... but they are never ‘free’ or ‘cheap’.

9. **Conditional funding** - some providers will only fund a project once groups have necessary resource consents, permits or concessions in hand. Obtaining those permissions is a costly business in its own right, and often a risk only worth taking if funds for the actual project are secured. A solution to this Catch 22 is to distribute such funds upon condition of securing the necessary permits within a given (reasonable) time frame.

10. **Value expertise** – be open to paying for contracted services, and be fair when assessing the in-kind value of volunteer support. Some funders price volunteer hours at minimum wage, yet the work they may be doing might be highly technical or skilled (e.g. preparing restoration plans, project management, accounts). Dave Sharp of Conservation Volunteers states ⁴⁸ *“Volunteers are valuable indeed, frequently invaluable - but they are never ‘free’ or ‘cheap’”*.

⁴⁸ Sharp, D. Conservation Volunteers.
www.wetlandtrust.org.nz/Cache/Pictures/2813484/Sharp_Volunteers_keeping_Then_Safe_-_And_Coming_Back.pdf?ts=635951561576835412

11. **Don't quote me** - for some contracted services (e.g. pest fence building) there may be few providers in the market, so consider flexibility around providing multiple quotes for specialized services (e.g. allow applicants to explain if they can only provide one quote).
12. **Third-party friendly** - letters of support are a useful way to demonstrate community support, but may put undue requirements on third parties, particularly if many funders are requiring them. Consider other indications of support, such as number of paid members, Facebook/ website hits, hours of volunteer input. Consider also accepting older letters of general support, if needed, quick phone calls to referees can determine if that level of support is still valid. This does not apply to the landowner, whether private or council/DOC etc, who must always provide permission.
13. **Tailor-made** – match the scale of the application process to the size of the grant. In keeping with Rātā Foundation's Small and Large Grants Programmes use simpler applications with lower compliance requirements for smaller grants, more detail about the project and the method of assessing success for larger grants. Some of the larger funds available are in the “too hard basket” for smaller groups– high expectations and onerous reporting requirements can make the cost of compliance exceed or match the value of a modest grant.
- Environmental solutions are seldom “spray and walk away”.*
14. **Take initiative** - Rātā Foundation may wish to be proactive and consider more substantial investment where it, or its partners, are aware of a significant initiative.
15. **Keep it simple** – putting together a funding application is time-consuming, potentially expensive, and requires planning prior to filling in the form.
- ✓ Use tick boxes for quick analysis of priority types of projects/sites, e.g. habitat type, activity type, but allow freeform boxes to provide additional or “outside the box” information.
 - ✓ Provide a word version of the application form to allow off-line completion and electronic or posted submission (particularly for remote communities with limited internet access). In addition, being able to see the entire application form prior to starting allows applicants to ensure they have information they need to complete it.
 - ✓ Be flexible around confirming authority to submit the form – community group members may be geographically dispersed, and collecting physical signatures can sometimes be cumbersome. An email from the Chair or a Trustee could form a valid item of evidence that the application has been approved by the board.

16. **Recognition** – community groups regularly thank their funders. Reciprocal acknowledgment of the value of group’s activity is equally important for morale and motivation, particularly as community group members put in considerable amounts of their own time and monetary resources for social good outcomes.

17. **Reporting back** - consider building (and funding) monitoring and reporting requirements into every funding application – e.g. offer an extra 10% for monitoring and reporting.

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9. APPENDICES

9.1 LOCAL STATE OF THE ENVIRONMENT

Each of the local authority areas within the Rātā Region has a suite of environmental issues, many of which are being responded to by the relevant authority using a range of regulatory and non-regulatory (e.g. education/ incentives) initiatives. These tables list the major environmental issues or states based on the most recent state of the environment report (s) for the relevant local authority area to help identify priority areas for Rātā funding. Not all issues are within the capacity of community groups to respond to (see Table 1)

Nelson (Tasman District and Nelson City Council local authorities)	
Air	<p>As of 2011 in Tasman District</p> <ul style="list-style-type: none"> Richmond had exceeded the National Air Quality Standard for particulates every winter since monitoring began in 2000 – attributed to people damping down their fires in the evening. Air quality in other towns appears to be meeting the 24-hour PM10 standard. <p>www.tasman.govt.nz/document/serve/EnvironmentReportCard_Air%20Quality201108.pdf?path=/EDMS/Public/Other/Environment/EnvironmentalMonitoring/AirMonitoring/000000255162</p> <p>As of 2010 in Nelson City Council area</p> <ul style="list-style-type: none"> Air quality improved from 2001 to 2008 Estimated emissions from domestic heating and industry had decreased by about 40% since 2001 <p>http://nelson.govt.nz/assets/Our-council/Downloads/state-of-the-environment-report-2010.pdf</p>
Fresh water	<p>As of 2015 in Tasman District</p> <ul style="list-style-type: none"> There were relatively few water quality issues compared to other parts of NZ, as the large rivers have a significant proportion of native forest in their headwaters. However, water quality at 40% of monitored sites in pastoral catchments posed a high risk to people and animals from disease-causing organisms. Macro-invertebrate communities were poor in many of the small lowland streams that drain the intensively developed parts of the District, but indicate good stream health in 60% of all sampled sites. From 2010 to 2014, 41 of 60 water quality attributes showed an improvement and 19 showed a degradation. The waterways with improving trends in water clarity included Buller at Longford, Motueka at Gorge and Motueka at Woodstock. <p>www.tasman.govt.nz/document/serve/State_of_the_Environment_Report_River_Water_Quality_in_Tasman_District_2010%2023MB.pdf?path=/EDMS/Public/Other/Environment/EnvironmentalMonitoring/WaterMonitoring/SurfaceWater/RiverWater/StateOfEnvironmentReports/000000185559</p> <p>As of 2011 in Tasman District</p> <ul style="list-style-type: none"> Several survey results demonstrated the success of fish passage restoration projects. There was insufficient data to provide trend analyses for freshwater fish populations. Habitat-sensitive native species were generally absent from modified streams, highlighting the need for better protection of stream beds and riparian zones from drain clearance, stream straightening, cattle trampling, fine sediment discharges, riparian vegetation removal and other land uses. <p>www.tasman.govt.nz/document/serve/State%20of%20the%20Environment%20Report2011.pdf?path=/EDMS/Public/Other/Environment/EnvironmentalMonitoring/WaterMonitoring/Fish/000000204290</p>

	<p>In 2001 the following key issues were identified for Tasman District</p> <ul style="list-style-type: none"> • Water quality deterioration in certain lowland rivers, some unfit for swimming or even for stock drinking water. • Loss of riparian vegetation on lowland streams, reducing habitat for native fish and trout spawning. • Reduction of unique flora and fauna in lowland riparian areas, such as wetlands. • Increasing community demand for access to rivers and coast. <p>www.tasman.govt.nz/document/serve/Riparian%20Land%20Management%20Strategy-March%202001.pdf?path=/EDMS/Public/Other/Policy/Strategies/000000176665</p> <p>As of 2010 in Nelson City</p> <ul style="list-style-type: none"> • Less than 1% of the original extent of native freshwater wetland vegetation remained • Most monitored coastal and urban stream sites had poor water quality, but were good or moderate in three other monitored catchments <p>http://nelson.govt.nz/assets/Our-council/Downloads/state-of-the-environment-report-2010.pdf</p>
Land	<p>As of 2008 in Tasman District</p> <ul style="list-style-type: none"> • There was no recent monitoring data on indigenous biodiversity on land, or pests and weeds on the Tasman District Council website). • Less than 9% of the remaining lowland wetlands were formally protected, other under-protected ecosystems include lowland forest and shrubland, coastal dunes and flats. <p>www.tasman.govt.nz/document/serve/Biodiversity%20Overview%20final%20lo-res.pdf?path=/EDMS/Public/Other/Environment/EnvironmentalMonitoring/LandMonitoring/Biodiversity/000000177368</p> <p>As of 2010 in Nelson City</p> <ul style="list-style-type: none"> • Ten of the 26 land environments in the city council area are national priority land environments (acutely or chronically threatened environments) • Only about 2% of the original extent of native coastal flat vegetation, 6% of lowland flat, and 22% of native coastal hill country vegetation remained. Greater proportions remain on lowland hills and uplands. • Surveys were underway to identify significant natural areas <p>http://nelson.govt.nz/assets/Our-council/Downloads/state-of-the-environment-report-2010.pdf</p>
Coastal/ marine	<p>As of 2015 in Tasman District</p> <ul style="list-style-type: none"> • Tasman Bay was at low risk overall to eutrophication, however nearshore and local-scale effects of nutrients inputs may occur. • There was no apparent large scale impact of mussel farming on phytoplankton. • Sediment inputs from land had not been high in the past 20 years, and re-suspension of previously deposited sediments was a greater issue than new sediment. • Fishing had substantially modified soft-sediment habitats and was thought to be a main cause of some depleted fish stocks. • Bacterial contamination appeared to be low overall, but occasional peaks occur after rainfall – associated with runoff rather than point source discharges. • Chemical contamination was low. • A number of invasive marine species had become established but appeared to be restricted to the port areas. <p>www.tasman.govt.nz/document/serve/Assessing%20the%20State%20of%20the%20Marine%20Environment%20in%20Tasman%20Bay%20and%20Golden%20Bay%202016%20-%20Cawthron%20Institute.pdf?path=/EDMS/Public/Other/Environment/EnvironmentalMonitoring/CoastalMonitoring/000000499768</p> <p>As of 2010 in Nelson City</p> <ul style="list-style-type: none"> • Only about 17% of the original extent of estuary margin vegetation, and less than 1% of the original extent of native dune vegetation remained • Heavy metal levels had decreased or stayed the same in Nelson Haven and the Port between 2004 and 2008

	<ul style="list-style-type: none"> Sediments had increased but this has allowed expansion of some native vegetation in the Waimea Estuary and there was no evidence of obvious pollution or nutrient enrichment between 2002 and 2008 <p>http://nelson.govt.nz/assets/Our-council/Downloads/state-of-the-environment-report-2010.pdf</p>
Marlborough	
Air	<p>As of 2015</p> <ul style="list-style-type: none"> In rural areas chemical spray drift and controlled burn-offs were the main air quality issues. The spread of vineyards had increased the use of agrichemicals and risk of spray drift. <p>www.marlborough.govt.nz/Environment/~media/Files/MDC/Home/Environment/State%20of%20the%20Environment/2015/SER_Atmosphere.pdf</p>
Fresh water	<p>As of 2015</p> <ul style="list-style-type: none"> Nitrogen had decreased in a number of rivers but bacteria has increased in two rivers Most of the monitored river sites were ranked as marginal or fair. Stock access and poor riparian management were cited as the main contributors to poor water quality Bacteria (<i>E. coli</i>) concentrations had decreased significantly in the Rai River following a programme of riparian fencing and planting. Marlborough rivers were free of invasive pest fish and several invasive plant species, but didymo, yellow flag iris and lagarosiphon are established in many waterways. <p>www.marlborough.govt.nz/Environment/~media/Files/MDC/Home/Environment/State%20of%20the%20Environment/2015/SER_Freshwater.pdf</p>
Land	<p>As of 2015</p> <ul style="list-style-type: none"> Despite positive initiatives to protect indigenous biodiversity, the Marlborough environment was still highly modified and stressed. Lowland south Marlborough had very little native vegetation cover left and was classified as a “threatened environment”. In lowland areas remaining sites were often small, fragmented and impacted by farm stock, feral animals and weeds. In some higher altitude areas in both north and south Marlborough, remaining sites were larger and in better ecological condition, although impacts from feral animals were common. Council support for landowners and community groups undertaking restorations projects had created a slight increase in overall area in indigenous vegetation on the Wairau Plain from 170 ha to about 189 ha. However, this was still only about 0.8% of the land cover in the Blenheim Ecological District. Since 2008 the number of QEII covenants on private land in Marlborough increased from 56 (2000 ha) to 75 (4000 ha) and improvements in the ecological condition of some sites had been achieved through the SNA (Significant Natural Area) assistance programme (80+ sites), although the majority of sites that had not been actively protected were either in a stable or deteriorating condition. Rabbit numbers had been reduced and were being maintained at low levels but new pest species (e.g. wallabies) had become established in the region. More properties were infested with Chilean needle grass. Lack of public awareness was increasing the threat of weed spread and the incursion of new pest plants. <p>www.marlborough.govt.nz/Environment/~media/Files/MDC/Home/Environment/State%20of%20the%20Environment/2015/SER_Land.pdf</p>
Coastal/ marine	<p>As of 2015</p> <ul style="list-style-type: none"> The number of wastewater discharges in Marlborough’s coastal waters had been steadily dropping, Enterococci bacteria concentrations at most of the beaches remained low or had decreased and most were rated Very Good to Fair for water quality. There were 575 mussel farms and an unstated number of finfish farms in the Marlborough Sounds. Organic waste from fish farms, builds up on the seabed and reduces the oxygen available for seabed organisms to thrive. Several invasive species had become established in the Marlborough Sounds, including sea squirts, sea fans and algae. Marlborough’s marine biodiversity was not in good shape, particularly in the Sounds. The significant issues were: fewer fish, fewer species, serious loss of habitats, sedimentation in estuaries and biosecurity incursions. However Long Island Marine Reserve in Queen

	<p>Charlotte Sound / Totaranui had a healthy marine habitat, with ten times more crayfish and three times more blue cod inside the reserve than out.</p> <ul style="list-style-type: none"> • The condition of Marlborough's estuaries was not well understood but monitoring had recently been started. <p>www.marlborough.govt.nz/Environment/~media/Files/MDC/Home/Environment/State%20of%20the%20Environment/2015/SER_Coastal.pdf</p>
Canterbury	
Air	<p>As of 2008</p> <ul style="list-style-type: none"> • Calculated PM10 emissions in Christchurch had declined. • Solid fuel burning from home heating remained a major contributor to poor air quality in Christchurch and other urban centres in Canterbury, although the number of open fires in the city had fallen significantly. <p>Environment Canterbury 2008 http://ecan.govt.nz/publications/Plans/Regional%20Environment%20Report%202008%20-%20Full%20Report.pdf</p>
Fresh water	<p>As of 2008</p> <ul style="list-style-type: none"> • Ecosystem health was generally high in alpine and hill rivers, intermediate in intermontane and Banks Peninsula rivers, and poor in lowland streams. High country lakes and inland reaches of rivers had good water quality while shallow coastal lakes and the lower reaches of rivers were nutrient-enriched. • Around half of freshwater sites monitored for suitability for contact recreation complied with guidelines. • Soil erosion is an acknowledged problem on the easily eroded soils of the Port Hills in Christchurch, and sedimentation in Christchurch's waterways is linked to a decline in trout eggs and sensitive aquatic invertebrates. • Groundwater levels had exhibited considerable declines since 2001, and spring-fed streams had shown significant decline in flow rates, while shallow groundwater had been contaminated by nitrate in most areas where groundwater is used. • There was no reported data on the state of freshwater wetlands <p>Environment Canterbury 2008 http://ecan.govt.nz/publications/Plans/Regional%20Environment%20Report%202008%20-%20Full%20Report.pdf</p>
Land	<p>As of 2008</p> <ul style="list-style-type: none"> • Canterbury's indigenous biodiversity had experienced substantial decline as a result of human settlement and activity, and remained under threat from land use intensification and lack of legal protection. Areas below 800 m altitude generally contained only remnants of their former indigenous biodiversity, while coastal, lowland and inter-montane basin parts of the region were most at risk of future biodiversity loss. • The much-reduced and highly modified areas of indigenous cover remaining in these threatened environments supported a disproportionately large percentage of the region's most seriously threatened species, habitats and ecosystems. • More than 50 rare or threatened plant species were found only in the Canterbury region, while Banks Peninsula had over 30 endemic invertebrate species. The ecosystems in which these species live are also often highly distinctive, e.g. Canterbury's braided river systems and limestone outcrops, and support specially adapted native species. • Current programmes of public awareness and education, voluntary protection, Resource Management Act provisions and formal legal protection of remaining indigenous biodiversity had not halted loss of vulnerable indigenous biodiversity in much reduced and poorly protected ecosystems and habitats. • Soil quality remains at acceptable levels in most of the region, while erosion on hill and high country land has been variable, with no clear trend emerging. <p>Environment Canterbury 2008 http://ecan.govt.nz/publications/Plans/Regional%20Environment%20Report%202008%20-%20Full%20Report.pdf</p> <p>According to Nick Head</p> <ul style="list-style-type: none"> • Only 2 lowland forest remnants are left on Canterbury Plains – Riccarton Bush and Lords Bush – 206,000 ha of matai-kahikatea-totara forest has been cleared. • Less than 60 ha of Canterbury dryland plains vegetation is legally protected.

	<ul style="list-style-type: none"> • Canterbury's lowland indigenous character is diminished to small patches of kanuka and scattered trees in paddocks or floodplains - yet these are the last habitats for many native species. <p>http://ecan.govt.nz/publications/Council/cw-selwyn-waihora-doc-dryland-biodiversity-010512.pdf</p> <p>As of 2009</p> <ul style="list-style-type: none"> • Canterbury hosted more threatened plant species than any other region in the country, most were small plants, herbs, shrubs or grasses <p><i>de Lange et al. 2009</i> http://www.nzpcn.org.nz/page.aspx?flora_vascular_Threatened_plant_list</p>
Coastal/ marine	<p>As of 2008</p> <ul style="list-style-type: none"> • Development of the coastal margin for housing was a major pressure, with increased threat of stormwater, treated sewage and other wastewater being directly discharged into nearby estuaries and/or the open coast. • Avon-Heathcote Estuary/Ihutai had high ammonia-nitrogen and elevated phosphorus concentrations from discharge of treated sewage, while nutrient concentrations in Akaroa and Lyttelton harbours and the Port of Timaru had not changed significantly since 2001. • Beaches were generally stable. <p>Environment Canterbury 2008 http://ecan.govt.nz/publications/Plans/Regional%20Environment%20Report%202008%20-%20Full%20Report.pdf</p>
Chatham Islands	
Air	<p>As of 2001</p> <ul style="list-style-type: none"> • The air quality is generally of very high standard due to windy maritime conditions which disperse the discharges of contaminants from the few sources. <p>www.cic.govt.nz/documents/2007/09/state-of-the-environment-monitoring-water-quality-and-ecosystem-health-of-the-lakes-streams-and-te-whanga-chatham-islandrehoku-september-2007.pdf</p>
Water	<p>As of 2007</p> <ul style="list-style-type: none"> • The peat and dune lakes were all moderately to highly enriched with quantities of phosphorus (from natural sources) and to a lesser extent nitrogen. • The streams and lakes are all sensitive to any increase in nitrogen sources (which would favour algal blooms). • Native fish were abundant and exotic species absent in the waterways. <p>www.cic.govt.nz/documents/2007/09/state-of-the-environment-monitoring-water-quality-and-ecosystem-health-of-the-lakes-streams-and-te-whanga-chatham-islandrehoku-september-2007.pdf</p> <p>As of 2001</p> <ul style="list-style-type: none"> • Wetlands are affected by grazing, occasional burning and activities such as sphagnum moss harvesting. <p>www.cic.govt.nz/documents/2001/01/chatham-islands-resource-management-document-operative-part-3-significant-resource-management-issues.pdf</p>
Land	<p>As of 2001</p> <ul style="list-style-type: none"> • Forest cover was rare in northern and central Chatham Islands and the north of Pitt Island. • Many small forest remnants were under pressure from the effects of stock and wind. • Uncontrolled stock grazing has had a significant adverse effect on the coastal vegetation such as pingao and endemic herbs and allowed exotic marram grass to dominate. <p>www.cic.govt.nz/documents/2001/01/chatham-islands-resource-management-document-operative-part-3-significant-resource-management-issues.pdf</p> <p>As of 2008</p> <ul style="list-style-type: none"> • Nearly 3000 ha of privately-owned land had been protected by fencing, often as part of covenant agreements. • Thirty of forty five rural landowners had entered into conservation commitments.

	<p>www.chathams.co.nz/index.php/chart</p> <p>As of 2009</p> <ul style="list-style-type: none"> • Habitat protection and pest control has contributed to an increase in population of the Chatham Islands pigeon (parea). <p>http://notornis.osnz.org.nz/system/files/Dilks%20et%20al.%202010.pdf</p>
Coastal/ marine	<p>As of 2001</p> <ul style="list-style-type: none"> • Generally, the existing coastal water quality is very high <p>www.cic.govt.nz/documents/2001/01/chatham-islands-resource-management-document-operative-part-3-significant-resource-management-issues.pdf</p>

9.2 BEST PRACTICE FOR BIODIVERSITY PROJECTS

Check list for assessors. Applicants seeking funding for ecological projects who reference these are likely aware of, and applying best practice (tried and tested methods that have been developed or peer reviewed by qualified scientists, and in some cases adopted by the Department of Conservation as standard operating procedures). Applicants may have good (and scientifically sound) reasons for using other methods, therefore lack of reference to these products should be treated with due caution. This list is not exhaustive and new SOPs may be developed as technology changes (e.g. increasing using of 'set-and-forget' traps).

Note: many councils have best practice guides for land and water management, tailored for their region.

1. Restoration/ planting/ pest control			
Activity	Tool	Developer	Weblink/ notes
Pest control (animals)	<i>Predator Free NZ Beginners Guide</i>	Predator Free NZ	http://predatorfreenz.org/get-started/beginners-guide-best-practice/
Pest control (weeds)	<i>Weed Planner</i>	DOC	www.doc.govt.nz/get-involved/run-a-project/our-procedures-and-sops/weeds/
Planting natives	<i>Ecosourcing guidelines for Nelson City</i>	Nelson CC	http://nelson.govt.nz/assets/Environment/Downloads/Nelson-Biodiversity-Forum-Eco-sourcing-brochure-A154167.pdf
Restoration - all	<i>Protecting-and-restoring-our-natural-heritage-a-practical-guide</i>	DOC, 2001	www.doc.govt.nz/about-us/science-publications/conservation-publications/protecting-and-restoring-our-natural-heritage-a-practical-guide/
Restoration - dunes	<i>Community-based dune management</i>	Envnt BOP	www.boprc.govt.nz/media/32260/ClimateChange-0505-CoastalHazardsandClimateReport.pdf
	<i>Dune Restoration Guidance from</i>	Dunes Restoration Trust	www.dunestrust.org.nz/dune-restoration/dune-restoration-plans/
Restoration – forest/bush	<i>Native Forest Restoration: A Practical Guide for Landowners -</i>	QEII (Tim Porteous) 1993	www.openspace.org.nz/Site/Publications_resources/Handbooks_and_Guides.aspx Some of the information provided may be out-of-date.
Restoration - wetlands	<i>Wetland Restoration Handbook</i>	NZ Landcare Trust and Landcare Research 1994	www.landcareresearch.co.nz/publications/books/wetlands-handbook
Translocating native species	<i>Translocation guide for Community Groups</i>	DOC 2012	www.doc.govt.nz/get-involved/run-a-project/translocation/forms-and-guides/ There are several species-specific best practice guides

2. Monitoring			
Activity	Tool	Developer	Weblink/ notes
General	<i>Habitat Monitoring Toolkit</i>	WWF 2006 <i>Habitat Protection Fund</i>	http://awsassets.wwfnz.panda.org/downloads/hpf_monitoring_toolkit_1.pdf
Estuaries	<i>Estuary monitoring by communities</i>	NIWA nd	www.niwa.co.nz/freshwater/management-tools/ecological-monitoring/estuary-monitoring-by-communities
Forests/ bush	<i>Formak</i>	PA Handford & Associates Ltd	www.formak.co.nz/
	<i>Bush vitality</i>	Horizons Regional Council (Manawatu)	www.bushvitality.org.nz/bv_assessment.htm Not commonly used, although technically sound
Lakes	<i>Lake Spy (Lake Submerged Plant Indicators)</i>	NIWA (Clayton & Edwards) 2006	www.niwa.co.nz/our-science/freshwater-and-estuaries/lakespi-keeping-tabs-on-lake-health/how-lakespi-works
Wetlands	<i>Handbook for Monitoring Wetland Condition</i>	Clarkson et al. 1994	www.landcare.org.nz/wetmak
	<i>Wetmak (Wetland Monitoring and Assessment Kit)</i>	NZ Landcare Trust	www.landcare.org.nz/wetmak
Streams	<i>SHMAK (Stream health monitoring and assessment kit)</i>	NIWA 2002	www.niwa.co.nz/freshwater/management-tools/water-quality-tools/stream-health-monitoring-and-assessment-kit
Māori indicators	<i>Cultural health index for streams and waterways</i>	MfE (Gail Tipa) 2006	www.mfe.govt.nz/publications/cultural-health-index-streams-and-waterways-tech-report-apr06
	<i>Kaimoana survey guidelines for hapu and iwi</i>	MfE 2003	www.mfe.govt.nz/publications/environmental-reporting/kaimoana-survey-guidelines-hapu-and-iwi
Restoration success	<i>Photopoints</i>	NZ Landcare Trust	Video available
Birds	<i>DOC SOPs incl. 5 Minute Bird Counts, Distance Sampling, Mark re-sight</i>	DOC, various authors and dates	www.doc.govt.nz/our-work/biodiversity-inventory-and-monitoring/birds/
Vegetation plots	<i>DOC SOPs incl. Foliar Browse Index, 20x20 m Plots, Recce plots, Scott Height-Frequency</i>	DOC, various authors and dates	www.doc.govt.nz/our-work/biodiversity-inventory-and-monitoring/vegetation/
Weeds	<i>Weed surveillance SOP</i>	DOC 2008	www.doc.govt.nz/get-involved/run-a-project/our-procedures-and-sops/weeds/

Animal pests	<i>RTC (Residual Trap Catch) for Possums</i>	DOC 2014	www.doc.govt.nz/Documents/science-and-technical/inventory-monitoring/im-toolbox-animal-pests-residual-trap-catch-index-possums.pdf
	<i>Tracking tunnels</i>	DOC 2013	www.doc.govt.nz/Documents/science-and-technical/inventory-monitoring/im-toolbox-animal-pests-using-tracking-tunnels-to-monitor-rodents-and-mustelids.pdf
	<i>Chew cards</i>	Landcare Research	www.landcareresearch.co.nz/science/plants-animals-fungi/animals/vertebrate-pests/pests-in-forests/chew-track-cards

9.3 PERMISSIONS

Permissions that will or may be required for environmental activities

This table is a check list of likely permissions, but is not exhaustive and should be used as a guide only. Note: in all situations **permission must be provided by the landowner**, whether private or agency (e.g. Crown or council owned/ administered land).

Activity	Regulator and Authorisation type			
	DOC	Regional or District Council	Ngai Tahu ⁴⁹ (for all of Sth Island)	Heritage New Zealand
	<i>Permit or Concession</i>	<i>Resource consent/ building permit</i>	<i>Iwi consultation</i>	<i>Archaeological Authority</i>
Earthworks (e.g. track building)	If on DOC land	Regional or district council	Possibly	If an archaeological site is uncovered
Buildings/infrastructure	If on DOC land	District council, RC if near water	Possibly	If an archaeological site is uncovered
Weed control	If on DOC land	If on /near water or helicopter spraying	Possibly	
Animal pest control	If on DOC land	If aerially applied toxin (e.g. via helicopter)	Possibly	
Fauna translocations/re-introduction	Any native species		Any native species	
Fauna monitoring involving handling	For most native animals, and if to / from DOC land		Any native species	
Collecting/ harvesting native plants /seeds	If on DOC land		Possibly	
Planting	If on DOC land	Possibly, e.g. on stopbanks, streambeds	Possibly	
Scientific research	If of DOC land	Possibly	Possibly	
FURTHER INFORMATION	www.doc.govt.nz/get-involved/apply-for-permits/		http://ngaitahu.iwi.nz/	www.heritage.org.nz/protecting-heritage/archaeology/archaeological-authorities

⁴⁹ See list of Ngai Tahu Taonga species in these publications:

www.doc.govt.nz/documents/about-doc/concessions-and-permits/conservation-revealed/ngai-tahu-taonga-animals-lowres.pdf

www.doc.govt.nz/Documents/about-doc/concessions-and-permits/conservation-revealed/ngai-tahu-taonga-plants-lowres.pdf