

# Te Mana o te Taiao ki te Tai o Aorere Tasman Biodiversity Strategy

## Moemoeā - 2050 Vision

Responsible human behaviour restores te Taiao and this enriches lives, because balance is restored and indigenous biodiversity flourishes.



Toutouwai juvenile (Bush Robin) (Painting courtesy of Peter Lawless)

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A note on language: This Biodiversity Strategy is deliberately bilingual. The official languages in Te Tai Aorere include Māori and English. Just as words in context are culturally defined, so our relationship with the environment is culturally mediated. Biodiversity has its own jargon drawn from the language of science. While many technical terms and Māori terms are defined in the glossaries in this document, definitions can never convey the full contextual meaning of each word. These explanations should be received as a starting point for dialogue rather than the sort of binding definitions that are found in rules and regulations. For example, the glossary definition of “protection” here is not the same as that in the Conservation Act; just as the concept of “kaitiakitanga” will differ in place and time. You are invited to join this rich cultural and linguistic journey with your own context and understanding.

## Wāhinga kōrero - Foreword

### ***Te toto o te tangata, he kai, te oranga o te tangata, he whenua***

*A person's blood is obtained from the food eaten, and it is from the land that sustenance is derived.<sup>1</sup>*

This Biodiversity Strategy addresses restoration of indigenous biodiversity and also associated biosecurity. Managing biosecurity benefits both indigenous ecosystems and the ecosystems we have modified to support our lives.

Many of Aotearoa New Zealand's indigenous plants and wildlife are found nowhere else on Earth, and many only in this region, te Tai o Aorere/Tasman. They are ancient and unique – giant invertebrates, flightless birds, penguins that live in the forest, trees that can live for over a thousand years and the smallest dolphin in the world. Many of these creatures and plants have been isolated to the islands and waters of Aotearoa New Zealand since the days of the dinosaurs.

Both the New Zealand Biodiversity Strategy and the Waitangi Tribunal reports on the WAI 262 claim recognise and affirm that the central role of Māori must be recognised in the way nature and people are interwoven through whakapapa. In this reciprocal relationship, people are kaitiaki (guardians) of nature and nature is kaitiaki of people. As a first step, tikanga/kawa has been honoured through co-governance and collaboration in the preparation of this Biodiversity Strategy. We are committed to this continuing in its implementation.

Healthy nature is central to human health and wellbeing. Natural environments and the plants and wildlife they support, are part of our identity and our economy. Nature provides us with green spaces and recreation for wellbeing, supports primary and tourism industries, regulates and purifies our air and water and allows us to gather kai. When nature is thriving, people are thriving.

But nature in Aotearoa New Zealand is in trouble and it desperately needs our help. Despite all that we are doing to try to protect and restore habitats and assist species, indigenous biodiversity in te Tai o Aorere is in crisis.

In order to halt the decline of biodiversity and protect and restore natural taonga, we need to ensure that all of our activities contribute more to restoring nature than they take from it. Any other course perpetuates the decline.

Effective responses will require a culture of collaboration and care. Whilst there are some immediate benefits, they may also entail short term pain for long term gain. Where pain occurs it should be shared broadly not left to fall on the few willing individuals, landowners and kaitiaki.

We, in this region, stand at a crossroads. We can either commit to a future, where we recognise our place in the natural world and consciously restore what we have damaged, or continue on our current course and accept further degradation and loss, and consequently fail to be custodians and fail to be good ancestors. There is only one ethical choice here.

*Toitū te marae a Tāne-Mahuta, Toitū te marae a Tangaroa, Toitū te tangata.*

*If the land is well and the sea is well, the people will thrive.*

Ian Shapcott (Te Ātiawa), Dayveen Stephens (Ngāti Tama), Celia Butler (Councillor - Golden Bay Ward, Chair), Trevor Tuffnell (Councillor - Richmond Ward) and David Ogilvie (Councillor - Motueka Ward)

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<sup>1</sup> A proverb cited in Te Tau Ihu Waitangi Tribunal report, Chapter 11, page 1042

## Timatanga kōrero - Introduction

This Biodiversity Strategy is a call to action. It creates a broad platform for resources to come to bear from both national initiatives and new and existing opportunities within the region. The Biodiversity Strategy for Tasman follows Te Mana o te Taiao: Aotearoa New Zealand Biodiversity Strategy in setting objectives for protecting and restoring te Taiao (the natural world) out to 2050.

Giving effect to the Crown Treaty partnership with manawhenua iwi has been the basis of the development process of this Strategy. Iwi have exercised their roles as rangatira and Council its role as the prime legal entity responsible for sustaining the quality of the environment. The result is co-creation and co-governance through collaboration and consultation with interested organisations and individuals present in the region.

In sponsoring the process, the Council has acted pursuant to its role under the Local Government Act 2002. Should the Council, or any other party, adopt or endorse this Strategy, it will be bound by relevant law and regulation. It is suggested that the Council respond to the Biodiversity Strategy through a formal policy process that takes into account its many responsibilities. Other organisations could be invited to do the same in accord with their custom and legal status.

The Biodiversity Strategy sets aspirational objectives for the community as a whole. It proposes priority actions for the entire region and also for discrete areas within it. For these objectives to be realised, priorities will need to be set and resources committed by a wide range of parties. The Council will be central to implementation, but could never achieve these aspirations on its own. Given the scale of the issues and the low population of Tasman, resources from all sectors of the community, and beyond, will be required.

A future structure of governance to oversee implementation will be established. This could see the agencies that can secure the necessary resources collaborating with manawhenua and citizen representatives. These could build on the success of local, regional and national initiatives, such as trapping and restoration groups, Kotahitanga mō te Taiao and Jobs for Nature. Only by being inclusive and aligned could we hope to meet challenges of becoming a truly sustainable, caring and just community.

## Whakaora te Taiao – Why we need to act

Key factors driving the loss of biodiversity around the world are:

1. Historic and ongoing impacts of invasive species;
2. Changes in land and sea use, including widespread destruction of natural ecosystems;
3. Direct exploitation of species;
4. Climate change; and
5. Pollution.

Because ecosystems are connected, the decline or degradation of biodiversity and ecosystems on land can have negative impacts on marine and freshwater environments, and vice versa. In Tasman these drivers are all active and as a result indigenous biodiversity is in crisis. Past introductions of pests and ongoing pressures from human use, compromise natural functioning ecosystems and disrupt connections.

For example:

1. Largely natural uplands in the west are degrading under pressures from pests;
2. Lowlands throughout the region are highly modified, most natural ecosystems are now small remnants and are highly threatened or degraded;
3. The region is a centre for naturally uncommon ecosystems, such as coastal turf communities. Nationally 63% of such naturally uncommon ecosystems are threatened;
4. The arrival of humans and pests has led to the loss of habitat and localised extinction of many species. Tuatara, native frogs and several species of coastal and wetland birds were gone before the 1800s. Takahē, orange-fronted parakeet and saddleback/tīeke were gone by 1975, as was the short-tailed bat/pekapeka. Red-crowned parakeet, yellowhead/mohua, kākāpō, kōkako and the little-spotted kiwi/pukupuku have apparently died out in the last 30 years;
5. Other species, such as kaka, rock wren/tuke, blue duck/whio and great-spotted kiwi/roroa, are in decline, except where there are pest control operations;
6. Many terrestrial bird species, such as kēā and falcon/kārearea, are threatened or at risk in the Tasman Region;
7. Thirty-one percent of marine birds nationally are threatened and this region provides vital habitat for many coastal species. Examples from this region include:
  - a. Nationally critical: Australasian bittern/matuku hūrepo, black-billed gull/tarāpuka, and white heron/kōtuku;
  - b. Nationally endangered: black-fronted tern/tarapirohe, New Zealand king shag/kawau pāteketeke and reef heron/matuku moana;
  - c. Nationally vulnerable: Caspian tern/taranui; and
  - d. At risk or declining: moho pererū (banded rail), matata (fernbird), kotoreke (marsh crake), tarāpunga (red-billed gull), pūweto (spotless crake) and tara (white-fronted tern);
8. Te Tau Ihu, the top of the South Island, is particularly rich in invertebrate species. The cool wet montane beech forests and sub-alpine tussocks of the northwest are home to about half the known sub-species of giant landsnails (*Powelliphanta*). Tasman District has nationally significant areas of karst (limestone and marble). These in turn support a cave fauna that contains several species known from a very restricted number of locations. They include: subterranean aquatic snails, a dipluran, a centipede and a spider. Many indigenous invertebrates are under pressure from habitat loss and pests, such as wasps;
9. Freshwater species of plants and animals are also threatened in the region. Most native freshwater fish species are at risk and declining, while examples of already threatened species are: blue duck/whio, freshwater mussel/kākahi, grey duck/pārera and lamprey/piharau;
10. Both of the bat species/pekapeka are threatened, with the short tailed bat probably extinct in the region;
11. Although some marine mammals, such as the fur seal/kekeno, are increasing in numbers, those of Hector's dolphins/tutumairekurai remain very low;

12. A large number of environmental pests<sup>2</sup> are either too expensive to control outside limited areas or we lack control technologies. Such pests are: Argentine and Darwin's ants, Australian magpie, banana passion vine, brushtail possum, Canada geese, cherry laurel, climbing asparagus, cotoneaster, Darwin's barberry, fan palm, feral cats, feral deer, feral goats, feral pigs, feral rabbits, ferrets, great bindweed, large white butterfly, hedgehogs, magpies, old man's beard, parrot's feather, privet species, purple and common pampas, rats (Norwegian, ship rat, kiore), Spanish heath, stoats, sycamore, wasps (German, common), weasels, wild ginger, wilding conifers and woolly nightshade;
13. Freshwater pests and weeds are targets for eradication, but this is a difficult environment in which to achieve this goal. These include: *Egeria densa*, entire marshwort, *Gambusia affinis*, *Lagarosiphon* oxygen weed, perch, red-eared slider turtles, rudd and tench. The freshwater plant parrot's feather cannot be controlled with current technologies;
14. In the sea, wakame (*Undaria*) and clubbed tunicate (*Styela clava*) are unwanted organisms too widespread to control, while Mediterranean fanworm (*Sabella spallanzii*) has been contained to Tarakohe Harbour despite repeated introductions by infested vessels;
15. Most mahinga kai and mātaītai have been not been documented, protected or maintained throughout the region;
16. Traditional foods, particularly uncultivated foods, are seldom available for harvest and planting;
17. Indigenous plants, birds, animals and forests are not healthy, abundant or managed sustainably to enable traditional uses;
18. Many lowland streams and rivers outside protected areas in the region are degraded;
19. Much of the seabed in Golden and Tasman bays has excess fine sediment and direct damage from human uses;
20. Most subtidal biogenic habitats in the sea have been lost and the little that remain are degrading;
21. Special plant communities on unusual geologies, such as the Nelson mineral belt, are threatened by browsers and invasive weeds; and
22. Climate change will increase pressures on natural systems and reduce their resilience, but we do not yet know how to respond adequately to this threat.

### Rautaki - Strategy

The overall strategic approach is to work at the intersection of:

I te tuatahi e whakamana te Taiao.

Acknowledging te Taiao comes first.

Whakamana ngā tikanga/kawa Taiao o ngā manawhenua me ngā hapori hoki.

Honouring tikanga/kawa in relation to te Taiao in conjunction with manawhenua iwi and the community.

Manaaki ngā hapori me ngā koporeihana o te rohe nei mō te Taiao.

Ensuring communities, organisations and industries are committed to restoring te Taiao.

<sup>2</sup> Note the definition of "pests" in the glossary includes both plant and animal pests.

Hangaia ngā raukaha me ngā manwa rahi o te  
Kāwanatanga mō te oranga o te Taiao.

Building the capability, capacity and  
commitment of statutory agencies to support  
restoration of te Taiao.

Mānawhenua say that if we do things according to tikanga and kawa (the customary way of correct action) we will heal our relationship with te Taiao (the natural world). Tikanga and kawa are rooted in long experience with te Taiao. It is founded on whakapapa connections. Te Taiao contains us, which means that living in the world must be based on reciprocal restoration and care as we meet our needs. Placing tikanga/kawa at the centre of our interactions with the world offers the whole community an approach that leads to sustainable outcomes for the environment and for people.

Community commitment will drive agencies, organisations and industries to support restoration. Wide social support is required and the full engagement of all sectors of society. Changing hearts and minds is fundamental to changing how we live in the natural world on which we depend. Social licence is essential for statutory agencies to take the urgent action required for landscape level restoration.

Living in this place confers privilege and responsibility in a framework of authority and accountability. Manawhenua, traditional authority, is conferred from ahi kā roa, the long burning fires of occupation. Kāwanatanga, the role of governorship conferred on the British Crown by the Treaty of Waitangi, formed the basis for law and regulation. Each citizen has responsibility to care for the environment.

Statutory agencies are those empowered by Acts of Parliament with the authority of the Crown and accountability within constitutional law. They expend public funds and make regulations that bind us all. They can only do this wisely and well if they have the technical capability, commitment at all levels and the financial and human capital required to get the job done. Three quarters of the land in the region is held by the Department of Conservation as a Crown agency on behalf the nation. Elsewhere it is the Council that provides support as a Crown constituted agency to landowners and makes the rules within national laws and policies. At the border, we depend on Biosecurity New Zealand and in the sea, Fisheries New Zealand. The Council and Department of Conservation have overlapping responsibilities. Each of these agencies needs to be capable, committed and working collaboratively with one another, with tangata whenua, with the community, with organisations and industries.

### Whakamahi - How this Biodiversity Strategy works

The purpose of this Biodiversity Strategy is to align the efforts of all parts of the Tasman community in creating a restorative future for all aspects of indigenous biodiversity in the region. This includes: dealing with biosecurity threats, building on existing initiatives, as well as seeking step-change opportunities.

An integrated pathway is created for the Tasman region to meet the requirements of national and regional policies related to biodiversity and biosecurity for land, freshwater and the sea. It takes into account related effects and recognises potential impacts of climate change, including resulting unstable weather patterns. It recognises that there is much work to be done to fully understand the consequences of the new national directives and that these themselves have not all been finalised.

This Biodiversity Strategy is formed under the Local Government Act 2002 as a document setting the strategic direction for Council and the community. It will inform a range of statutory documents,

including a statutory regional biodiversity strategy, if that is required by the proposed National Policy Statement on Indigenous Biodiversity.

This Biodiversity Strategy is a beginning and should be viewed as a living document. No strategy is ever perfect and it needs to evolve as new information is available and the environment for its implementation changes.

## Horopaki - Context

This Biodiversity Strategy has developed at a critical point ecologically and socially. It could lead the way for our community to bring activities into harmony with nature. It endeavours to give access to the worldview and relationships to te Taiao developed by the tangata whenua. This offers foundations for everyone to reconcile their cultures and their economies with environmental realities. In this Strategy, such perspectives are woven with those of the people that arrived under the authority of the British Crown. All of these groups encompass diverse perspectives that affect how each understands the environment. While each generation and each wave of immigration brings fresh perspective, we must also remember to maintain focus on the long-past environmental baselines. This Biodiversity Strategy therefore strives to build on the knowledge of long occupation and integrate this with the strength of strong science and wider perspectives.

## Te Ao Māori – Māori World View

The Te Ao Māori view pays homage to our parents Ranginui (Rangi), the Sky Father, and Papatūānuku (Papa), the Earth Mother. This is an overarching korowai (cloak) that protects us, the teina (children) and provides sustenance for the survival of humanity. Acknowledgment of these tūpuna (ancestors) ensures that whatever we do is made accountable to them. We have a responsibility to ensure that we are respectful and look after our brothers and sisters and their children. This philosophy is the personification of Rangi and Papa and all the atua<sup>3</sup> of te Taiao. It enables us to guide our behaviour as a society through a structure that ensures both our survival and the sustainability of te Taiao. It also captures the view that we are connected to te Taiao through whakapapa and we have an intrinsic relationship with natural ecosystems and species within those ecosystems.

## Ngā Uri o ngā Hekenga – The descendants of the migrations

Eight iwi have overlapping interests in Te Tau Ihu (the prow of the canoe): Ngāti Koata, Ngāti Rārua, Ngāti Toa (Tainui Waka), Te Ātiawa, Ngāti Tama (Tokomaru Waka), Ngāti Kuia, Ngāti Apa and Rangitāne o Wairau (Kurahaupō Waka). Tai o Aorere rohe also includes in the south Ngāti Waewae of Ngāi Tahu. These iwi hold manawhenua and tangata whenua kaitiaki roles for managing ngā taonga tuku iho.

The Tai o Aorere whānau, hapū and iwi landscape is complex and has layers of historical conquest. Before the migrations from the 1820s - 1830s, the Kurahaupō people resided in Te Tau Ihu: Ngāi Tara, Ngāti Apa ki te Rā To, Rangitāne and Ngāti Kuia. Ngāti Tūmatakōkiri were also present prior to the Kurahaupō tribes. In the 1820s - 1830s, Tainui, Tokomaru and Kurahaupō waka iwi arrived in Te Tau Ihu. As a result of these waves of migration, there are many histories that provide the cultural layers for this rohe. Most have been disregarded by decision makers for many years. The whenua provides the stories of ancestors told through pūrākau and mātauranga, and are also in the taonga that are unearthed throughout the rohe. The wāhi tapu and sites of significance are scattered

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<sup>3</sup> Ancestor with continuing influence.



throughout the rohe. They assist us in understanding the ways in which people lived here on the whenua and the way in which they managed te Taiao. These customary practices are key to reconnecting with the Taiao and revitalising how to live in harmony with biodiversity and environs.

### Ngā Uara ki Te Tau Ihu – Manawhenua iwi values

Ngā Uara mō ngā iwi o Te Tai o Aorere - Māori values and principles guide the way we can approach protecting and restoring te Taiao.

1. **Whakapapa ki te Taiao** - connection to the environment through genealogy and the personification of te Taiao e.g. Papatūānuku is the earth mother and Ranginui is our sky father and we are the children. We connect to inanimate and animate things.
2. **Te Mana o te Taiao** – te Taiao comes first. The concept that we are teina of te Taiao and that indigenous species are our tuakana.
3. **Ko te whenua mai i ngā maunga teitei ki hōhonu o te moana**<sup>4</sup> – an holistic approach to viewing the Te Tai o Aorere Taiao.
4. **Ngā Taonga Tuku Iho** – the treasures handed down from our ancestors and our responsibility to ensure that these are sustained for the next generation.
5. **Rangatiratanga** – ability to exercise kaitiakitanga and have self determination to make decisions over te Taiao and nga taonga tuku iho.
6. **Kaitiakitanga** – whanau, hapū and iwi intergenerational responsibility to protect, sustain and look after te Taiao. Kaitiaki are individuals who have whakapapa and affiliate to iwi in the area.
7. **Rāhui and Aukati** – customary protection and management mechanisms to protect, conserve and manage taonga.
8. **Mauri** – restoration of the mauri of ngā taonga tuku iho and te Taiao. The mauri is the cultural measurement for ecosystem health.
9. **Ngā Atua** – we acknowledge the atua for the different domains of te Taiao.
10. **All of this implies human activity must have a net restorative effect if we are not to degrade the world we live in.**

### Te Mana o te Taiao – Aotearoa New Zealand Biodiversity Strategy

Through this Biodiversity Strategy we are working to implement Te Mana o te Taiao – Aotearoa New Zealand Biodiversity Strategy<sup>5</sup>. This national strategy takes into account New Zealand’s international obligations and integrates these with our national context.

*The strategic plan, called Te Mana o te Taiao, is a plan which weaves together our ideas for restoring the biological species in our natural world and ensuring their survival. We know full well that if we restore those things, we must also reinvigorate the kinship ties of people to their lands, from the mountains to the sea. We say that the natural world has its own power, genealogy and life force. We can't allow that power to wane. Let us carry it with us into the natural world.*

Te Mana o te Taiao ki te Tai o Aorere, the Tasman Biodiversity Strategy, responds to the national strategy, with responses to each of its three pillars, or pou, for action.

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<sup>4</sup> From the highest mountains to the deepest depths of the oceans

<sup>5</sup> <https://www.doc.govt.nz/nature/biodiversity/aotearoa-new-zealand-biodiversity-strategy/te-mana-o-te-taiao-summary/>

## Kotahitanga mō te Taiao Strategy

Through this Biodiversity Strategy we are breathing life into the Kotahitanga mō te Taiao Strategy<sup>6</sup> created by an Alliance of iwi, councils and the Department of Conservation of the top of the South Island.

*This co-designed strategic document provides high-level outcomes to achieve significant conservation gains as well as social, cultural and economic benefits to communities that will grow our resilience as a region; outcomes that no one entity could achieve alone. We acknowledge that the high-level outcomes defined in the Place section are a starting point and that significant engagement and collaborative processes are required to further inform this direction. The Alliance is committed to Kotahitanga (working together) to achieve these transformational outcomes.*

Te Mana o te Taiao ki te Tai o Aorere, the Tasman Biodiversity Strategy, takes Kotahitanga mō te Taiao as a starting point for proposing vision, outcomes, objectives and priority actions. It builds on the implementation criteria developed in the Kotahitanga mō te Taiao Strategy to identify which projects and programmes the Alliance should support. These are divided into two parts: characteristics the project must have to merit support and characteristics that will support a high priority for action.

### **Implementation must:**

1. Have clear outcomes that support Biodiversity Strategy implementation;
2. Be consistent with the overall strategic approach set out in the Biodiversity Strategy; and
3. Be based on best available information, science and practice.

### **Implementation actions will be given priority where they:**

4. Contribute to sustaining indigenous biodiversity;
5. Preserve options, avoid irreversible loss, maximise future success and/or increase ecological resilience;
6. Build knowledge that can be applied more broadly;
7. Are likely to achieve stated project outcomes and sustain the gains;
8. Have community support, foster engagement, support education and contribute to human well-being;
9. Increase opportunities for tangata whenua to practice customs and traditions;
10. Support tangata whenua access to culturally important mahinga kai (food gathering areas) and areas of historical and special significance;
11. Are consistent with settlement obligations and statutory acknowledgements; and
12. Make provision for cultural monitoring where projects or programmes may affect significant sites, traditional customary areas, mahinga kai, maunga or wahi tapu.

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<sup>6</sup> <https://www.doc.govt.nz/contentassets/cf2bf2f877544dc29594442365ca797c/kotahitanga-mo-te-taiao-strategy.pdf>

## Pōkai - Putting it all together

Nested between Ranginui and Papatūānuku our nation has developed Te Mana o te Taiao, the New Zealand Biodiversity Strategy. This is supported by elements such as the biosecurity system, Predator Free 2050 Strategy and national policies and directions, as well as the programmes of central government agencies.

Our region Te Tai o Aorere has responded with its own programmes, and now seeks to draw them together into an integrated whole with the Tasman Biodiversity Strategy. This is supported by Iwi management plans, the Regional Pest Management Plan, the forthcoming Tasman Environment Plan and the work of many organisations and individuals. We build on the three pillars defined in the national strategy to get the system right (Tūāpapa), empower action (Whakahau) and protect and restore (Tiaki me te Whakamaumanu). To provide greater definition this Biodiversity Strategy identifies priority actions and intermediate outcomes for protecting and restoring Tasman as a whole and then for eight focal areas. These areas do not have distinct boundaries, as both ecosystems and communities are part of the greater whole and are defined as much by connection as by difference.

### A framework to inform implementation of this strategy

Having identified the Strategy's *Overall Approach and Objectives*, the next step is translation of these into a logical and easily understood response which then drives precisely calculated targeted implementation. It is vital that urgent effect is given to the delivery of the Strategy's aspiration.

Only urgent action can enable the restoration journey to be soundly shaped and informed from the outset. A list of steps for fleshing-out each of the objectives follows, along with an explanation of those steps. This provides the basis for a targeted approach to how and when the Strategy's objectives can be attained. It also describes what we would see when successful implementation occurs. The steps are:

1. Objective;
2. Why we need to act;
3. The approach;
4. Intermediate outcomes; and
5. First priority actions.

### Objectives

About the selection of targeted responses to the Strategy's Objectives: The Strategy's Objectives - its *planned outcomes / goals* - have been selected based upon a deeply informed understanding of the natural world in Tasman. They target the direct pressures which are causing the measurable decline of biodiversity extent and health. This strategic selection of objectives ensures that this response will effect the steps necessary to restore the integrity of biodiversity in Tasman.

The overall approach is set out in the summary on the next page.

The following sections provide details of urgent, informed, targeted, effective and continuing restorative actions, for each of the thirteen selected Objectives to respond to this regional crisis.

## 2050 Vision

The balance of te Taiao is restored and indigenous biodiversity flourishes as we live in harmony, healing ourselves as we heal the world.

## Why we need to act

In Tasman indigenous biodiversity is in crisis. Past introductions of pests and ongoing pressures from human use compromise the natural functioning of indigenous ecosystems and disrupt vital connections.

## Our strategic approach

1. Acknowledging the environment comes first.
2. Honouring tikanga/kawa in relation to te Taiao in conjunction with manawhenua iwi and the community.
3. Ensuring communities, organisations and industries are committed to restoring te Taiao.
4. Building the capability, capacity and commitment of statutory agencies to support restoration of te Taiao.

## By 2050 we aim to achieve:

### Outcome 1

The full range of indigenous species and ecosystems natural to Tasman are thriving.

### Outcome 2

People live in harmony with nature.

### Tiaki me te Whakahaumanu Protecting and Restoring Tai o Aorere

We need to address the direct pressures causing a decline in biodiversity, ensure the sustainable use of biodiversity and restore biodiversity in areas where it has been lost.

2050 objectives:

1. Native species, especially those found nowhere else, are thriving.
2. Naturally functioning ecosystems are restored and maintained.
3. Ecological connections and resilience are protected and restored.
4. Pest plants and animals and harmful microorganisms are no longer threatening indigenous biodiversity.
5. Biodiversity provides nature-based solutions to climate change and is resilient to its effects.

### Whakahau Empowering action

We all need to help to protect and restore indigenous biodiversity and prevent biosecurity incursions.

2050 objectives:

6. Everyone has the support, knowledge and networks they need to take effective action and make informed decisions that protect and restore biodiversity.
7. Partnerships with rural landowners enable effective restoration of indigenous biodiversity on private land.
8. Partnerships with urban landowners and occupiers enable effective restoration of indigenous biodiversity (urban ecology) on private land.
9. Māori have the resources and capacity to be properly involved in exercising their responsibilities for te Taiao.

### Tūāpapa Getting the system right

Getting the system right will depend on commitment to transformational change by organisations, sectors and communities.

2050 objectives:

10. Treaty partners, whānau, hapū, iwi and Māori organisations are leading the way as rangatira and kaitiaki and are ensuring the restoration of mātauranga Māori.
11. Governance, regulations and funding enable delivery of BioStrategy outcomes.
12. Responsible human behaviour restores te Taiao and this enriches lives.
13. Biodiversity protection is at the heart of economic activity.

For each objective and each area intermediate outcomes are suggested to guide evaluation of progress towards the 2050 objectives.

For each of the objectives first priority actions are identified to guide initial action planning.

The cross-cutting actions in empowering action and getting the system right will enable achieving the intermediate outcomes detailed in Tiaki me te Whakahaumanu.

Implementation planning will define the actions to be taken by responsible agencies.

Progress on actions and goals will be evaluated, and the priorities will be reviewed and revised over time.

## The approach

The approach taken by this Strategy is one of proactive enablement and support. This includes the Council partnering with tangata whenua iwi. This will mean taking well calculated opportunities to:

1. Lead urgent action by example;
2. Provide robust information from an evidence base, and, in parallel undertake the following;
3. Get behind and assist those who are already active;
4. Acquaint the Tasman community with the circumstances around biodiversity management and its imperatives; and
5. Offer tools to support increasing participation.

For these actions to deliver aspirational outcomes, it will be necessary to bring together integrated projects covering the diverse aspects of the wide and complex arena that comprises biodiversity restoration in Tasman.

## Intermediate outcomes

These signal positive results arising in the implementation period.

## First priority actions

*First priority actions* have obvious pressing aspects with respect to the delivery of the Strategy's outcomes. They warrant specific urgent attention due to their vitally important part in achieving the effective delivery of a particular implementation program. Examples are: documenting the threatened species of the region so we know what needs our help, immediate responses to the threat of species / habitat loss or an immediate opportunity to secure positive gains.



Restoring the Moutere (Photo courtesy of Tasman Environmental Trust)

## Objective 1

Native species, especially those found nowhere else, are thriving.

### Why we need to act

Tasman has plants and animals that occur nowhere else. We know that there are large numbers of threatened species in the region, but there is no authoritative database of these and many are data deficient. Some species have been lost to extinction and others are holding on in other parts of the country, but have been lost from the Tasman region. The region is also the stronghold for species that are at greater threat elsewhere in the country. These also need protection from the drivers of loss that have imperilled them elsewhere. For more common species, addressing these drivers of loss, such as mammalian predators, can best be approached by focusing on the drivers directly. As we succeed with reducing loss, wildlife will return to where people live and we will have to adapt to welcome them into the environments we have created.

### The approach

1. Document the threatened species of the region so we know what needs our help.
2. Support groups already active in species protection to become more effective through access to tools and resources.
3. Educate the community on how to live happily with wildlife.
4. Integrate the efforts of agencies to deal with the drivers of loss.

### Intermediate outcomes

1. We are living with and appreciating native wildlife in our communities.
2. Native species populations are stable and no species are threatened with extinction due to pests, weeds or human activity.
3. Lost species are being reintroduced and sustained, with communities caring for them.

### First priority actions

1. Complete a list of threatened and data deficient species for Tasman and identifying those requiring increased care, including those off public conservation land.
2. Commence programmes to secure populations of indigenous shorebirds, wetland and coastal birds.
3. Innovate more effective techniques at a landscape level to sustain populations of native species.



*Spelungula cavernicola* the Nelson cave spider (Photo courtesy of the Encyclopaedia of NZ)

## Objective 2

### Naturally functioning ecosystems are restored and maintained.

#### Why we need to act

Air, land, freshwaters and the sea are intimately connected, but the whole system is out of balance. Reducing the adverse effects of our activities will allow damaged ecosystems to recover, while threatened ecosystems require active restoration. Honeydew beech forests, cave and karst ecosystems and coastal turf communities are examples where our region hosts the best examples of ecosystem types. Other ecosystem types, such as wetlands and lowland alluvial forests, have been reduced to remnants in many parts of the region.

#### The approach

1. Ensure that functioning remnants of threatened ecosystems are not lost, by protecting those that are known and completing processes for identifying those that are not yet documented.
2. Implement national policies and standards that protect ecosystem functioning.
3. Begin reducing key known stressors, such as accelerated loss of sediment from land to water due to land use practices.
4. Apply known good practices, such as planting native vegetation around watercourses and estuaries.
5. Develop approaches to protecting less well understood ecosystems, such as caves and aquifers.
6. Restore the capacity of native biodiversity to support traditional food gathering practices.

#### Intermediate outcomes

1. Significant native forest remnants are protected from land clearance.
2. Karst and cave system health and biodiversity requirements are met in land management practices.
3. Tasman estuaries are free of invasive weeds and excessive fine sediment.
4. Freshwater habitat for indigenous biodiversity are restored throughout the region and mahinga kai are uncontaminated.
5. Fine sediment inputs from land have been reduced to ecologically sustainable levels.
6. Rivers and streams flow clean, plentiful and are unimpeded from the mountains to the sea.
7. Biogenic habitats and other marine communities are thriving and the human community has access to mahinga kai and uncontaminated seafood throughout the region.
8. Ten percent of the area of original wetlands have been restored.

#### First priority actions

1. Identify the full range of threatened ecosystems in the region and places where they could be restored.
2. Continue to improve management of freshwaters to reflect the requirements of Te Mana o te Wai.
3. Identify significant biodiversity sites and potential restoration areas on land and in the sea.

## Objective 3

Ecological connections and resilience are protected and restored.

### Why we need to act

Ecosystems are interconnected living systems made up of biotic and abiotic elements. They are dynamically stable under certain conditions and can flip from one state to another, sometimes with catastrophic consequences. Sustaining natural connections is fundamental to their ongoing health.

### The approach

1. Apply known good practices, such as planting native vegetation around watercourses and estuaries.
2. Identify opportunities to reconnect fragmented elements of indigenous biodiversity.

### Intermediate outcomes

1. Fine sediment loss to waterways and the sea is reduced.
2. Seabed ecological restoration initiatives are underway.
3. Opportunities for reconnecting remnants of indigenous terrestrial ecosystems are identified and prioritised.

### First priority actions

1. Complete a region wide strategy for controlling fine sediment loss to water.
2. Establish a programme for integrated multi-sector collaborative management of marine habitats and resources in Tasman.
3. Extend programmes that restore riparian margins into indigenous plant cover.



(Photo LandSat8 the bays after two days of rain)



## Objective 4

Pest plants and animals and harmful microorganisms are no longer threatening indigenous biodiversity.

### Why we need to act

New Zealand's islands have been documented by the Parliamentary Commissioner for the Environment as the weediest in the world. Naturalised exotic plant species number in the thousands and a proportion of these are already weeds or will become problems. We will have to live with ongoing control and containment of spread for many of these. Conversely, the number of introduced animal species is much smaller and a national programme to eradicate key introduced mammalian predators is underway. In freshwaters and the sea, the number of problem species is also lower than on the land. Eradication in these two environments is very difficult, but some programmes to prevent spread are in place.

### The approach

1. Keep new harmful organisms out of the regional environment.
2. Enhance action on three known threats where action has already begun: cats, vines and conifers.
3. Implement the national predator-free strategy in the region.

### Intermediate outcomes

1. Wilding conifers are under control throughout Tasman.
2. Tasman is free from ferrets, weasels, stoats, possums and rats as part of national programmes under the NZ Biodiversity Strategy and the 2050 Predator-Free Strategy.

### First priority actions

1. Establish effective cat management in Tasman.
2. Complete a landscape-level vine management strategy for Tasman.



Stoat (photo courtesy of Project Janzoon)

## Objective 5

Indigenous biodiversity provides nature-based solutions to climate change and is resilient to its effects.

### Why we need to act

Healthy indigenous ecosystems have great capacity to store carbon. They are also resilient in the face of disturbance from storms and droughts that are predicted to become more common. In performing their natural functions, they can buffer human dominated systems through absorbing wave energy, replenishing freshwater stores and reducing flood peaks.

### The approach

1. Integrate restoration and maintenance of indigenous biodiversity with climate mitigation and adaptation.

### Intermediate outcomes

1. Adaptive management is addressing the adverse effects of climate change on indigenous biodiversity, including cascading effects, and is building future resilience.
2. The restoration of indigenous ecosystems is mitigating the adverse effects of climate change and natural hazards.

### First priority actions

1. Assess the potential for carbon storage from the restoration on indigenous ecosystems and use of indigenous nature-based solutions to climate mitigation and adaptation.
2. Recognise and provide for climate change effects on biodiversity, from sea level rise and ocean acidification to the ecological effects of changes to temperature and rainfall, in planning for land, freshwaters and the sea.



Cyclone Gita flooding Takaka Valley (Photo courtesy of Radio NZ)

## Objective 6

Everyone has the support, knowledge and networks they need to take effective actions and make informed decisions that protect and restore biodiversity.

### Why we need to act

Collaboration and co-design processes that foster collective ownership and delivery through the consideration of multiple values in decision making are the key to success. For this to work, a networked, local community approach offers the best hope of long term success.

### The approach

1. Create coordinated programmes for Tasman sharing information on the value of biodiversity and how to care for it.
2. Collect information on future skills needs, gaps and succession requirements.
3. Create authentic space for collaboration/partnership, so communities have voice and ownership in areas important to them.
4. Develop a 'local community' approach to implementation, by finding 'the drivers' in the middle to foster the generation of localised commitment, through the formation of active groups and a commitment to underpinning this with best practice scientific methodology.

### Intermediate outcomes

1. Government agencies (local and central) provide a myriad of accessible opportunities for everyone in the community to actively learn about and engage in, prioritising te Taiao, maximising biodiversity protection and addressing climate change.
2. Efficient and effective platforms and mechanisms for resourcing actions at all levels are established and operational.
3. Community action groups are resourced, growing, connected and coordinated, plus also have access to knowledge, expertise and information to actively manage biodiversity and other natural resources, so they act as environmental stewards.

### First priority actions

1. Establish an interagency biodiversity technical support and integration group to ensure quality in operations and data gathering, along with integration and aggregation of monitoring results, to support decision making by all parties.
2. Support local leadership at place by fostering formation of locally active groups and supporting this with sound science.
3. Ensure statutory agencies have effective structures and the technical capacity and outreach, to implement the Biodiversity Strategy.

## Objective 7

### Partnerships with rural landowners enable effective restoration of indigenous biodiversity on private land.

#### Why we need to act

Indigenous biodiversity on private land is a public good as well as a private asset. Indigenous biodiversity associated with threatened ecosystems is often represented predominantly, or exclusively, in remnants on rural private land. Current and historical owners have willingly retained these areas on their properties despite the decrease in productive land. This ranges from large plantation forestry blocks, low intensity hill country pastoral farming, intensive dairy and horticulture, to small holdings. In Tasman, manawhenua iwi own substantial areas, particularly in forestry.

Many rural landowners are keen to enhance the biodiversity on their land, and at the same time, lack the resources to sustain and restore these vital components of indigenous biodiversity on their own. Revegetation of river margins is a prime example where landowners around the region are planting extensively and are struggling with weed control, plus many would like to have integrated animal pest management in these areas. Some now face large fencing costs and increasing challenges from weeds and pests.

Most rural landowners lack the resources to sustain and restore these vital components of indigenous biodiversity on their own. Lowland wetlands are a prime example. In developed areas, only 1% of their original area remains. Most documented significant natural areas on private land in the region are degrading through lack of resources to sustain them. Without active programmes, the little that remains will be lost to pests and weeds. Public programmes are essential to their restoration.

#### The approach

1. Enable rural land owners to care for indigenous biodiversity by:
  - a. Removing administrative barriers;
  - b. Providing advice and expertise;
  - c. Supporting a strategic approach to focus on areas of greatest need and greatest benefit;
  - d. Assisting with the provision of professional services when required;
  - e. Support provision of resources to reflect the public interest in restoring indigenous biodiversity on private land;
  - f. Enabling or providing incentives for restoration on private land; and
  - g. Recognising the public good in ecosystem services resulting from indigenous biodiversity on private land (e.g. carbon sequestration, ecological connectivity, waste assimilation, habitat for wildlife etc.).
2. Encourage community leadership and collaboration by fostering local initiatives, such as catchment care groups, community nurseries, planting groups, along with pest and weed control groups.

3. Provide catchment level coordination treating properties as a collective, so that support is spread over multiple landowners.

### Intermediate outcomes

1. Wetlands and other significant habitats are restored.
2. Innovative action is integrating biodiversity restoration with carbon sequestration.
3. Barriers to restoration are minimised.
4. Landowners have access to information and support for restoration activities in ways that work for them.
5. Landowners in the region have access to quality professional services for all aspects of restoration of indigenous biodiversity from expert advice to active weed and pest control.
6. Incentives for indigenous biodiversity restoration are integrated with those for ecosystem services, such as carbon sequestration.
7. The costs of restoring indigenous biodiversity on private land is equitably shared between landowners and the wider community, recognising the benefits to each.
8. Community capacity to act in restoring indigenous biodiversity is enhanced.

### First priority actions

1. Establish programmes to support landowners, businesses, resource users/owners and industry and, where appropriate, incentivised to contribute to protecting and restoring indigenous biodiversity as standard practice, including:
  - a. Review of rules and regulations that create barriers to restoration;
  - b. Information and advice packages and programmes;
  - c. Provide a safety net of resources for landowners in the maintenance of restoration plantings;
  - d. Support the control of plant and animal pests;
  - e. Integration of local, regional and national programmes including with the Emissions Trading Scheme;
  - f. Opportunities for innovation and better practice;
  - g. Support for local care and restoration groups, including strategic overview and planning for local areas and/or catchments;
  - h. Support community biodiversity goals by helping to leverage direct funding from government and non-government sources.



Photo courtesy of Tasman District Council

## Objective 8

### Partnerships with urban landowners and occupiers enable effective restoration of indigenous biodiversity (urban ecology) on private land.

#### Why we need to act

Robust habitat and connections for indigenous biodiversity within the urban landscape are essential in sustaining healthy indigenous ecosystems Tasman-wide. These urban habitats should contribute to and connect with each other and with peripheral ecosystems, such as adjacent forests behind Richmond and the estuaries of Motueka. Corridors of indigenous vegetation, particularly around watercourses, are an essential part of the picture.

Our commitment to healthful ecosystems that permeate the urban landscape confirms that we are all involved in meeting the biodiversity challenge. Every one of us, whether living rurally or in town, has a role to play as part of the *urgent, informed, targeted, effective and continuing restorative actions essential to responding to this regional crisis*.

Many urban landowners and occupiers are already contributing positively to this outcome. Urban ecology is part of the whole interconnected ecosystem within and beyond the town. There is a definite opportunity for those residing in urban areas to play an important part in purposefully establishing, connecting and making wider linkages to make this contribution viable and effective. All urban dwellers have an opportunity to be part of this urban ecological jigsaw puzzle, however small an individual contribution might be. Enlivening this process will mean that town and country will hold hands with common purpose, mutually contributing complementary aspects towards a progressive and integrated whole of Tasman outcome. This is a challenging, exciting and inclusive proposition.

Fortunately, New Zealand has become a leader in the development, enhancement and ongoing maintenance of urban ecosystems, so guidance and information on how to participate is available locally, regionally and nationally. Additionally, within implementation, there may be opportunities where informal aspirant groups can unite in effective collaboration to restoring nature to our towns, including managing plant and animal pests.

#### The approach

1. Enable landowners and occupiers to care for indigenous biodiversity in their urban setting by:
  - a. Considering the town as a single ecosystem;
  - b. Providing advice and expertise;
  - c. Supporting a strategic approach to focusing where most benefit can be achieved;
  - d. Providing resources to reflect the public interest in restoring indigenous biodiversity on private land;
  - e. Enabling or providing incentives for restoration on private land; and
  - f. Recognising the public good in ecosystem services resulting from indigenous biodiversity on private land (e.g. carbon sequestration, ecological connectivity, waste assimilation, habitat for wildlife etc.).

2. Encourage community leadership and collaboration by fostering local initiatives, such as catchment care groups, community nurseries, planting groups, along with pest and weed control groups.
3. Provide catchment level coordination and treating properties as a collective so that support is spread over multiple landowners.

### Intermediate outcomes

1. The significant urban habitats are progressively restored.
2. Innovative action is integrating biodiversity restoration with carbon sequestration.
3. Barriers to restoration are minimised.
4. Landowners have access to information and support for restoration activities in ways that work for them.
5. Landowners in the region have access to quality information for all aspects of urban habitat restoration, including expert advice on plant and animal pest control.
6. Community capacity to act in restoring indigenous biodiversity is enhanced.

### First priority actions

1. Establish programmes to support landowners / occupiers, businesses, resource users/owners and industry and, where appropriate, incentivise them to contribute to protecting and restoring indigenous biodiversity as standard practice, including:
  - a) Review of rules and regulations that create barriers to restoration;
  - b) Information and advice packages and support;
  - c) Support the control of plant and animal pests;
  - d) Opportunities for innovation and best practice;
  - e) Support for local care and restoration groups, including strategic overview and planning for local areas and/or catchments;
  - f) Support community biodiversity goals by helping to leverage direct funding from government and non-government sources.



Tui (Photo courtesy of Forest and Bird)

## Objective 9

**Māori have the resources and capacity to be properly involved in exercising their responsibilities for te Taiao.**

### Why we need to act

Māori are prevented by lack of resources from participating in caring for te Taiao as guaranteed by the Treaty of Waitangi and provided for in relevant legislation and Treaty settlements.

### The approach

1. Establish collaborative projects with Māori organisations that allow development of capacity that allows agency and iwi needs to be met together.
2. Treaty partners, whānau, hapū, iwi and Māori organisations as rangatira and kaitiaki are sufficiently supported and resourced to protect and manage biodiversity, particularly taonga species, in their place.

### Intermediate outcomes

1. Resilient biodiversity enables cultural practices and mahinga kai, contributing to the regeneration of mātauranga Māori.
2. Restored nature uplifts mana.
3. Treaty partners, whānau, hapū, iwi and Māori organisations are central to the biodiversity system and recognised as leaders.

### First priority actions

1. Ensure joint management agreements and mātauranga Māori are incorporated into monitoring and projects involved in implementing this Strategy.
2. Work with manawhenua on regenerative tourism approaches for the region.
3. Ensure that whānau, hapū and iwi are leading or partnering on delivering Jobs for Nature projects to achieve their aspirations for their whenua.



**Kaka (Photo Courtesy of the Kotahitanga mō te Taiao Alliance)**



## Objective 10

Treaty partners, whānau, hapū, iwi and Māori organisations are leading the way as rangatira and kaitiaki and are ensuring the restoration of mātauranga Māori.

### Why we need to act

Maori customs, traditions, spiritual values need to be protected, restored and maintained through access to healthy, clean, safe and abundant natural environments. The customary access to ngā taonga tuku iho, mahinga kai and mātaimai need to be protected, restored and maintained. Iwi aspirations for the management of te Taiao must be acknowledged, while those exercising powers and functions need to recognise mātauranga Māori and the partnership relationship.

### The approach

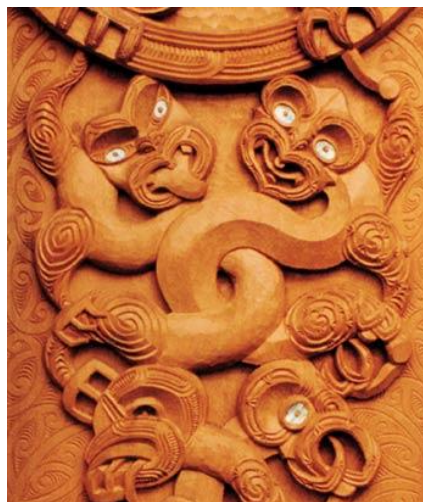
1. Complete implementation of statutory acknowledgements in relation to te Taiao.
2. Establish co-governance arrangements in caring for te Taiao.
3. Integrate efforts in caring for indigenous biodiversity with neighbouring regions and jurisdictions that overlap with the rohe of manawhenua iwi.

### Intermediate outcomes

1. The values of Treaty partners, whānau, hapū, iwi and Māori organisations are being actively used in collaboration and co-designed approaches.

### First priority actions

1. Establish protocols to align indigenous biodiversity programmes with neighbouring regions.
2. Formalise co-governance arrangements for te Taiao with ngā iwi tangata whenua.
3. Establish training for all natural resource managers in the region on working with Māori.



Wakatu Inc carving (Photo courtesy of the Encyclopaedia of NZ)

## Objective 11

### Governance, regulations and funding enable delivery of Biodiversity Strategy outcomes.

#### Why we need to act

Implementation will succeed if authority is matched with accountability and resources flow to where they are needed for priority actions.

#### The approach

1. The Tasman Biodiversity Strategy belongs to the community, while governance, regulations and funding enable delivery of Biodiversity Strategy outcomes.
2. Governance arrangements led by Treaty partners enable statutory agencies, Māori, non-government organisations, communities and industries to partner in aligned actions, to step up, and restore our relationship with te Taiao.
3. Commitment by statutory agencies, including Council, to collaborative actions for whole of region restoration of te Taiao.
4. Resourcing technical capability and community engagement to support effective action.

#### Intermediate outcomes

1. Collaborative governance structures are in place for implementation of this Strategy.
2. Treaty partners, whānau, hapū, iwi and Māori are involved in decision making through elected officials and specialised governance committees.

#### First priority actions

1. Establish governance for implementation of the Biodiversity Strategy.
2. Complete action plans and resource implementation.
3. Establish integrated progress reporting by statutory agencies.



Upper Moutere School children at their Celebration of Learning, what makes Tasman awesome and what could make it even better (Photo courtesy of Tasman District Council)

## Objective 12

Responsible human behaviour restores te Taiao and this enriches lives.

### Why we need to act

Restoring biodiversity needs to become second nature and easy to do.

### The approach:

1. Foster leadership, awareness, understanding and collaboration.
2. Develop professional career pathways in caring for indigenous biodiversity.

### Intermediate outcomes

1. Bold leadership is taking Te Tai o Aorere forward into a truly sustainable future that prioritises te Taiao, maximises biodiversity protection and addresses climate change.
2. People living, working and enjoying Te Tai o Aorere are aware of the current biodiversity crisis and take action to protect and restore nature and ensure sustainable use.
3. Community involvement in restoration activity has measurably increased.
4. Urban and rural communities, stakeholders, industries, central and local government are working together effectively to implement the Biodiversity Strategy at regional and local levels.

### First priority actions

1. Establish a coordinated pathway for environmental resource management careers in the region.



Weed busting (Photo courtesy of Weedbusters Nelson Tasman)

## Objective 13

### Biodiversity protection is at the heart of economic activity.

#### Why we need to act

Economic activity that treats ecosystem resources and services as a free good is a key driver of loss in indigenous biodiversity. Reversing this is essential to creating a future with net restoration, rather than ongoing loss.

#### The approach

1. Include the economic value of ecosystem services in regional accounts.
2. Consider the overall benefits of a healthy natural environment and factor them into all decision-making processes. This includes the environments that support sustainable business and human welfare.

#### Intermediate outcomes

1. Nature-based branding for Tasman is in wide use for all industries involved in deriving value from nature and all have a neutral or beneficial impact on biodiversity in the region.
2. Primary industries recognise that nature is at the heart of our economy and the way we do business.

#### First priority actions

1. Commence diverse nature-based job creation in Tasman.
2. Quantify the costs and values of restoring biodiversity for Tasman.



Onetahua Farewell Spit restoration (photo courtesy of HealthPost)

## Tiaki me te Whakahaumanu - Protecting and Restoring Tai o Aorere

### Te Taiao – Natural environment

Te Tai o Aorere is an environmentally diverse and ancient part of Aoteroa New Zealand. It is home to hundreds of species found nowhere else in the world and these form unique natural communities. This is the beech forest capital of New Zealand. Te Tai o Aorere has temperate marine environments, with an exceptional diversity of habitats that range from extensive intertidal flats to the continental shelf, along with very sheltered to wild and exposed coasts. The region has strongholds for a wide range of species and ecosystems which are now rare and threatened elsewhere in New Zealand (e.g. shorebirds, coastal birds and great spotted kiwi/roroa) and many are found nowhere else in the world (e.g. giant landsnails, giant cave spiders and coastal peppergrass).

Te Tai o Aorere has large rural communities and some small to medium sized towns. Its economic base includes strong primary industries alongside tourism and other sectors. There are nine iwi in this area, each with its own unique history and relationship to the land. Despite considerable modification of its land cover by human activity, the Tasman Region still retains nearly three-quarters of its indigenous dominated terrestrial ecosystem cover.

The greatest losses of terrestrial ecosystems have occurred in lowland areas, particularly in the east of the region. In some areas, few wetlands remain with 99% gone and even in the best areas 50% have been lost. Lowland forests of warm climates have been most affected, reducing in extent by approximately 75%. Forests occupying mild climates have reduced in extent by around 60%, while forests of cool and cold climates still occupy more than 90% of their former range. Ecosystems occurring above the treeline and on ultramafic substrates, still occupy almost all of their former range, having suffered minimal losses. However, the condition of these native ecosystems is poor, except where intensive animal pest and weed management has occurred. Our region has some of the cleanest air in the world.

**Set out below are proposed priority actions and intermediate outcomes for distinct parts of the region.** These will need to be worked through with tangata whenua, communities and stakeholders in each place. A community led approach can then be established, building on established programmes and embracing new opportunities.



[Powelliphanta landsnail](#) (Photo courtesy of Department of Conservation)

## Northwest coast – Paturau me Onetahua

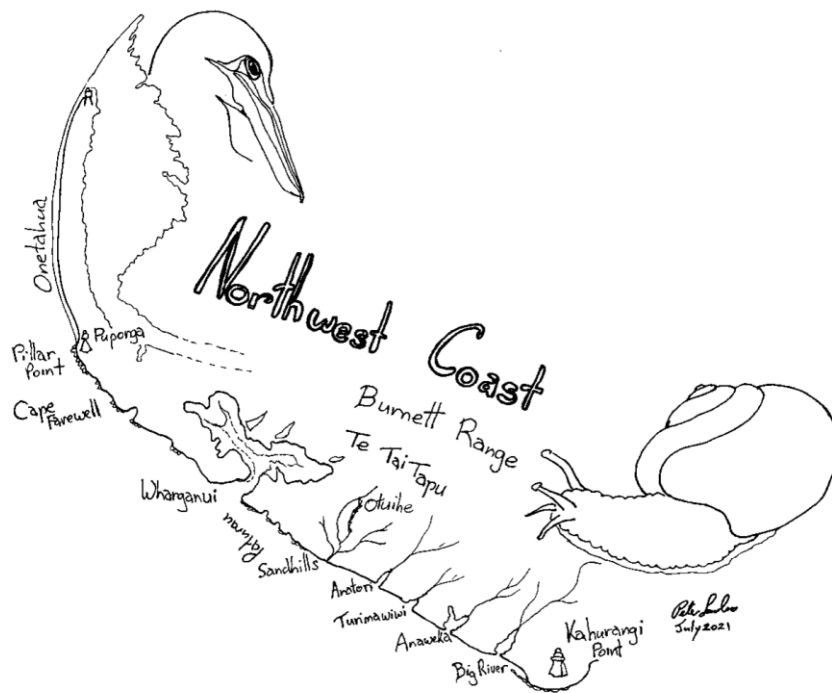


Illustration: Peter Lawless

### Te taiao – Natural environment

The Northwest coast stretches from Kahurangi Point to the tip of Farewell Spit. Originally it was mainly covered in warm temperate rainforest, rising to red and hard beech forest inland. The rainforest was predominantly kahikatea on the flats, which graded into open wetland dominated by flax and cabbage trees, with areas of pākihi-like mānuka shrubland on less fertile soils. These areas were rich in ancient ferns. Several dune lakes occurred. Extensive beech-podocarp forest dominated by hard beech and rimu covered the slopes. The coastline supported significant areas of salt turf communities and the coastal cliffs were clothed in wharariki<sup>i</sup>. Part of the area was a lowland refuge from glaciation and the mild climate protected species with a generally more northerly plant distribution. Although it has been logged and cleared in large areas, particularly on the coastal and alluvial flats, some areas of what was historically present still remain. There are significant locally endemic species, such as Traver's horopito<sup>ii</sup>.

The northwest coast landscape is richly endowed with a wide range of significant biophysical features:

1. This is a reference site for air quality in the world, as the clean air comes from the west across the ocean;
2. Farewell Spit Onetahua has dune and wetland values and habitat for rare species, including sand daphne<sup>iii</sup>, sea spurge<sup>iv</sup> and sand spike rush<sup>v</sup>;
3. Mangarakau wetlands are an important home for wetland birds and freshwater fish;
4. Extensive coastal slope vegetation communities, which are intact in places and regenerating elsewhere;
5. The landscapes of the Anaweka, Big, Turimawiri, Paturau and Wairoa rivers;

6. Wide range of coastal birds at Farewell Spit, including takapū<sup>vi</sup> and kuaka<sup>vii</sup>;
7. Mt Burnett’s special vegetation communities due to the underlying dolomite rock;
8. Whanganui Inlet and its numerous sub-inlets host: seagrass, salt marsh, herb fields, adjacent coastal forest, sand dunes and high current estuarine reefs. Wader foraging habitats and roosts are widespread at Rakopi and the entrance spit. Marsh birds are present. The southern portion of the Inlet is protected as a marine reserve and the remainder as a wildlife management reserve; and
9. This area provides important habitats for a diverse range of native species including: kekeno<sup>viii</sup>, roroa<sup>ix</sup>, matata<sup>x</sup>, kākā<sup>xi</sup>,<sup>xii</sup> kārearea, whio<sup>xiii</sup>, giant wētā<sup>xiv</sup>, New Zealand’s largest cave spiders<sup>xv</sup> and the carnivorous land snails<sup>xvi</sup>.

### **Mātauranga ki te Tāi ō Aorere – Traditional knowledge**

This area is important to many iwi. The area was rich in resources, had deep significance as a pathway for treasured pounamu and for the spirits of the departed as they left on their final journey. Whanganui Inlet, with a thriving estuary and marine life, is home to a huge number of shellfish, crabs and other invertebrates. Whānau collected tuangi<sup>xvii</sup>, pipi<sup>xviii</sup>, tuatua<sup>xix</sup>, pūpū<sup>xx</sup>, kūtai<sup>xxi</sup> and tio<sup>xxii</sup> from the mud, sand and tidal rocks, while īnanga<sup>xxiii</sup>, tuna<sup>xxiv</sup> and kōkopu<sup>xxv</sup> were harvested from the rivers and streams. Around thirty fish species use the Whanganui Inlet at some stage in their lifecycle. In the breeding seasons, the waters can be seen literally “boiling” with shoaling fish, including snapper<sup>xxvi</sup>, mullet<sup>xxvii</sup>, pātiki<sup>xxviii</sup>, sole<sup>xxix</sup>, sharks, kahawai<sup>xxx</sup>, southern mackerel<sup>xxxi</sup>, ngōiro<sup>xxxii</sup>, piharau<sup>xxxiii</sup> and warehou<sup>xxxiv</sup>. The estuary also provides food and shelter for an array of wading birds. Saltmarsh communities fringe the shoreline and eelgrass<sup>xxxv</sup> beds dominate the tidal flats. Dunes, cliffs, islands and underwater reefs contribute to the huge range of habitats.

Some of the coast is still bordered by coastal forest, including pukatea, rata, kahikatea, beech, rimu, and nikau. Land-based resources were also gathered, harvested or quarried on traditional whānau trips. Plants for weaving, such as aka<sup>xxxvi</sup> were harvested for crayfish pots, hīnaki for eeling, and kiekie<sup>xxxvii</sup> and pīngao<sup>xxxviii</sup> for other weaving. The swamps provided thousands of hectares of tough harakeke<sup>xxxix</sup> for whāriki (mats), especially at Rakopi and near Mangarakau. Kiekie fruits were a delicacy, as were hīnau berries and other fruit trees. Long straight stands of hīnau<sup>xl</sup> and horoeka<sup>xli</sup> provided exceptionally strong shafts for fishing spears, spears and poles.

### **Whakaora te Taiao - Opportunities for restoration**

1. Protection of salt turf communities and dune forest.
2. Preservation of lowland podocarp, broadleaved and mixed podocarp forest, particularly on limestone, plus lowland shrublands.
3. Reducing pressures on ecosystem on Farewell Spit and other important areas, including from significant pest species.
4. Re-establishing mainland and near shore island coastal bird colonies and with them the special ecosystems they created.
5. Restoring pekapeka<sup>xlii</sup> (long tailed) bats.
6. Protecting the freshwater habitats that host the highest natural values in the region.

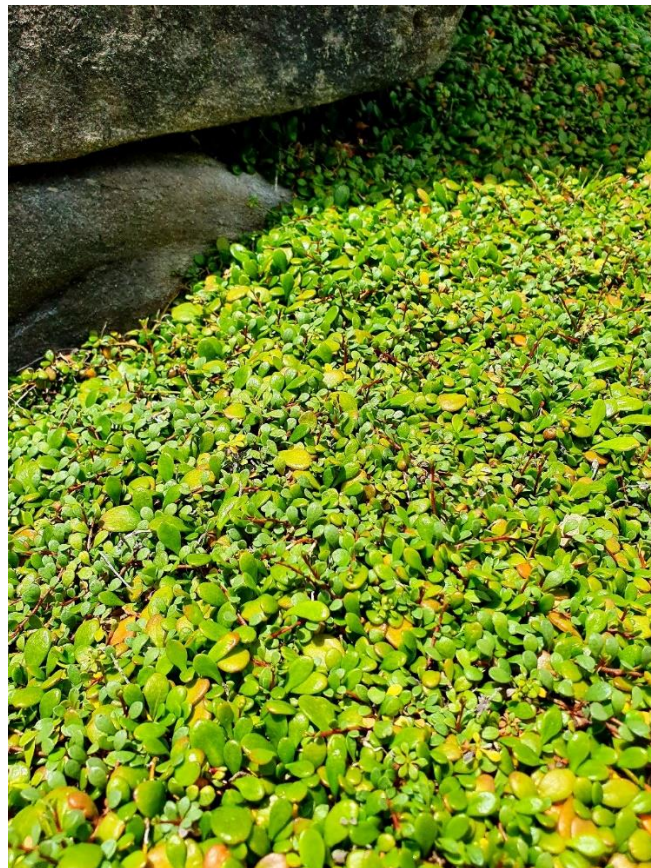
### **Intermediate outcomes**

1. The cultural history of the area is interwoven with the natural history and through this Farewell Spit and its adjacent important sites, are regarded as a taonga.
2. The dune ecosystems of Farewell Spit and the coast down to Kahurangi Point, including dune lakes, are fully functioning.

3. Native sand binders, native wetland plants and native shrublands dominate dune systems.
4. Coastal birds and other dune dwellers are thriving.

#### **Hoaketanga – First priority actions**

1. Establish a land owner support programme for protection and restoration of coastal turf communities.
2. Complete a climate change and land use adaptation plan for Whanganui Inlet.
3. Support Farewell Spit/Onetahua pest free programmes underway.
4. Expand restoration activity at Farewell Spit and the Pūponga Farm Park to the full range of habitats.
5. Establish a programme to control goats in the limestone and marble areas, with the priority on areas of plant endemism.
6. Obtain legal protection for river mouth estuaries on the west coast.
7. Understand why seagrass in the Whanganui Inlet has disappeared so fast (2013: 714ha, 2016: 329ha, 2021: <150ha).
8. Protect freshwater fish habitat, particularly at Mangarakau, Rakopi wetland, and the various freshwater streams and Wairoa River flowing in to the Whanganui estuary.
9. Complete a unified lake protection and restoration plan for all lakes in the area.
10. Complete eradication of the cord grass *Spartina* from estuaries.



Coastal turf at Te Hapu (Photo courtesy of Peter Lawless)



## West Coast Marine

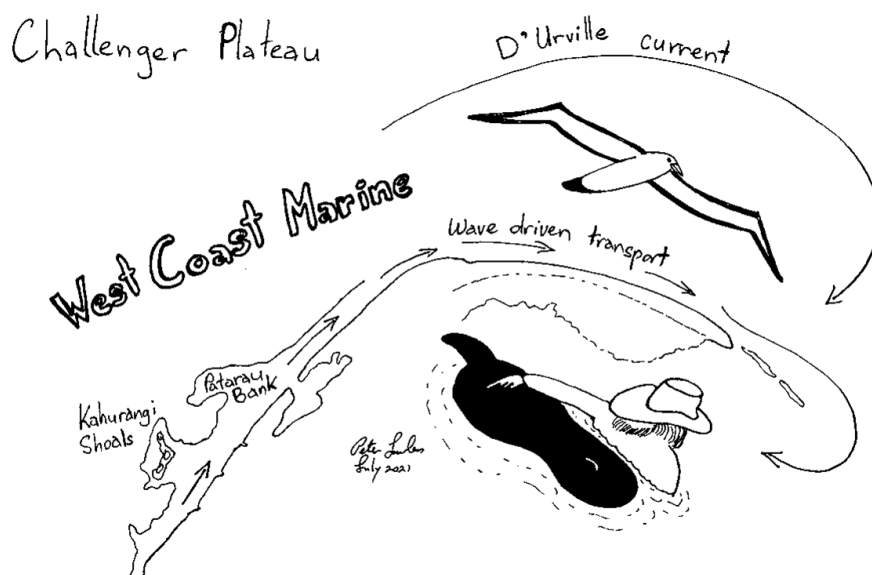


Illustration: Peter Lawless

### Te Taiao – Natural environment

The open coastline of the West Coast offers protection by remoteness. Exposure to the elements has also shaped the landscape. Significant nutrient upwelling off Kahurangi Point creates an area of enhanced productivity. It is an important area for shorebirds, wetland and coastal birds. Fur seal haul-outs and subtidal reefs are a feature of the coast. The coast is home to small communities based around primary industries and tourism. Most of the area is open to trawling and other forms of commercial fishing.

### Mātauranga ki Te Tai ō Aorere – Traditional knowledge

The mauri is a critical element of the spiritual life force of this area of the sea. As one of the principal greenstone trails the area was contested and several iwi have strong associations and responsibilities. The whakataukī “E kore a Parawhenua e haere, ki te kore a Rakahore” (“Water would not flow if it were not for rock – the interdependence of life”) illustrates an expression of how the atua Hine-parawhenua (atua of foreshore) and Rakahore (atua of rocks) have to co-exist. The estuarine areas of sheltered water were especially prized sources of kaimoana seasonally. Weather allowing, the tupuna utilised the resources of the open coast and made waka voyages out to sea and along the coast. Iwi record both seasonal and permanent occupations in this area at many locations. The value of the area is reflected in the efforts made to establish the Kaihoka Mātaitai Reserve to protect the abundance of kaimoana there.

### Whakaora te Taiao – Opportunities for restoration

1. Compile information available on biodiversity values and pressures from human activity.
2. Increase area based marine protection measures sufficiently to protect the high wilderness value (e.g. from mining and petroleum exploration).
3. Create specific protection for Kahurangi shoal and Patarau reef where recreational fishing pressure is reported to be increasing.

### Intermediate outcomes

1. Sedimentation and eutrophication of estuaries is minimised and estuarine ecosystems are thriving.

### Hoaketanga – First priority actions

1. Establish a programme to educate people on sustainable land use around estuaries.
2. Document the biodiversity of the West coast marine environment.
3. Add the Kahurangi shoal to the Paturau mātaimai.
4. Assess the Kahurangi shoal and Paturau reef fish stocks to establish sustainable catch rates for recreational fishing.



Wheke (Photo courtesy of Ryan Photographic)

## Golden Bay - Mohua

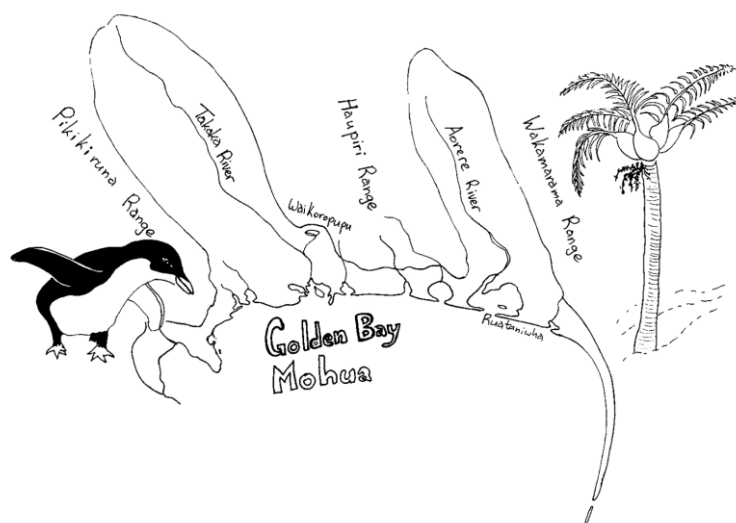


Illustration: Peter Lawless

### Te Taiao – Natural environment

Golden Bay was originally dominated by podocarp forest. Northern rāta occupied coastal and lower limestone areas. Towards the coast open flax and cabbage tree swamp was common, with estuaries and sandspits a feature of the river mouths and coastline. The wetter terraces with podsolised soil carried pākihi shrubland and forest with rimu and silver pine. Red, hard and black beech with rimu occurred over the lower slopes of the drier hills. Almost the entire district has been cleared of its original vegetation with scattered patches of alluvial forest and remnant rata on coastal limestone. Farming, logging and mining have contributed to vegetation clearance. Regeneration of bracken fern, kanuka and mānuka are the dominant processes on abandoned farmland, sometimes with significant patches of young totara. Few alluvial wetlands remain, but there are extensive estuaries. The original pākihi forest has been burnt but replaced by extensive mānuka-dominant shrubland. Sand dunes have largely been colonised by marram grass. Kānuka has replaced the beech forest on the drier hills. Te Waikoropupu are the largest freshwater springs in New Zealand, and have their own special biota.

### Mātauranga ki te Tai ō Aorere – Traditional knowledge

Tupuna first occupied Mohua over 700 years ago and several contemporary iwi record strong associations with this area. It was also the first place in the country where contact was reported between Māori and Europeans. Each of the rivers, springs and estuaries in Mohua have great significance for iwi. *Wai (water) originates from the domain of Tangaroa (atua of water), rising up from ngā moana (sea) to become the tears of Ranginui, filling ngā whenua (land) reservoirs which include: ngā maunga (sacred ancestors), tomo (caves), aquifers, ngā awa (rivers) and tributaries (ribs of ngā tūpuna), ngā puna (freshwater springs), ngā roto (lakes), ngā kūkūwai (wetlands- filters of Papatūānuku), mahinga mātaimai such as estuaries (food baskets of the sea), before flowing back to the domain of Tangaroa (into the coastal marine area)*<sup>7</sup>. Mahinga kai, especially birding areas and cultivations were associated with the rivers and their environs. Large areas were cultivated in the valleys, and urupā and mahinga kai were associated with these areas. Particular places had special resources, living things and minerals while water flow linked living and physical systems in the web of life. Traditionally, the estuary, streams, swamps and forests were full of life, making them rich

<sup>7</sup> Manawhenua Mātauranga Report

For the Takāka Catchments <https://www.epa.govt.nz/assets/FileAPI/proposal/NSP000042/Evidence-Supplementary-evidence/58d5c9e6a5/Supplementary-evidence-Matauranga-Report.pdf>

mahinga kai. Land based resources were gathered, harvested or quarried on traditional whānau trips. Plants for weaving, such as aka (supple jack) were harvested for crayfish pots, hīnaki for eeling and for other weavings.

### **Whakaora te Taiao - Opportunities for restoration**

1. Protect the estuarine wetlands (4,300ha) where we have already lost considerable amounts of saltmarsh from: the Ruataniwha Inlet (40%), Motupipi (24%), Tākaka delta and other Golden Bay estuaries.
2. Protect the freshwater wetlands that remain (as 70% of wetlands have been lost in the Golden Bay Ecological District).
3. Protect the more than 90% of the remaining lowland forests that lack formal status.
4. Control the gorse, barberry, hawthorn, buddleia, Spanish heath and banana passionfruit that are widespread weeds.
5. Support active protection and restoration of remaining extensive significant natural areas.
6. Protect sinkholes with high ecological diversity.
7. Protect the high value freshwater ecosystems, particularly fish and mussel diversity in this area e.g. coastal streams with kanakana (lamprey) and short-jaw kōkopu.

### **Intermediate Outcomes**

1. Fragmented lowland ecosystems and riparian margins of Golden Bay are protected and restoration has been accelerated, with buffers being added around remnants and creating ecosystem corridors linkages.
2. Key ecosystem pressures, e.g. weeds and browsers, are being actively managed throughout Golden Bay.
3. Communities prosper as they transition to more ecologically sustainable creation of wealth and wellbeing, plus deal with climate and economic instability.
4. A network of ecological corridors of naturally functioning native vegetation again link the mountains and the sea and fragmented ecosystems are reconnected.

### **Hoaketanga – First priority actions**

1. Protect, connect and restore alluvial forest remnants in the Tākaka Valley, including recovery of threatened plant species there.
2. Protect all shorebird habitat from disturbance, including from vehicles and dogs.
3. Co-design with landowners a biodiversity restoration programme from mountains to the sea in the Aorere Valley.
4. Develop a coastal resilience plan to sustain natural coastal ecosystems, including dunes, coastal forest and beaches.
5. Implement education programmes on karst and cave care, including awareness of the presence and role of stygofauna, and on how to live with wildlife such as kea, weka, penguins and falcon.
6. Reduce development pressures on fragmented remnant areas of native vegetation.
7. Develop restoration plans for priority freshwater wetlands and estuaries, including Waitapu estuary/Tākaka River delta.

## Golden and Tasman Bays Marine - Te Tai Tapu me Te Tai-o-Aorere

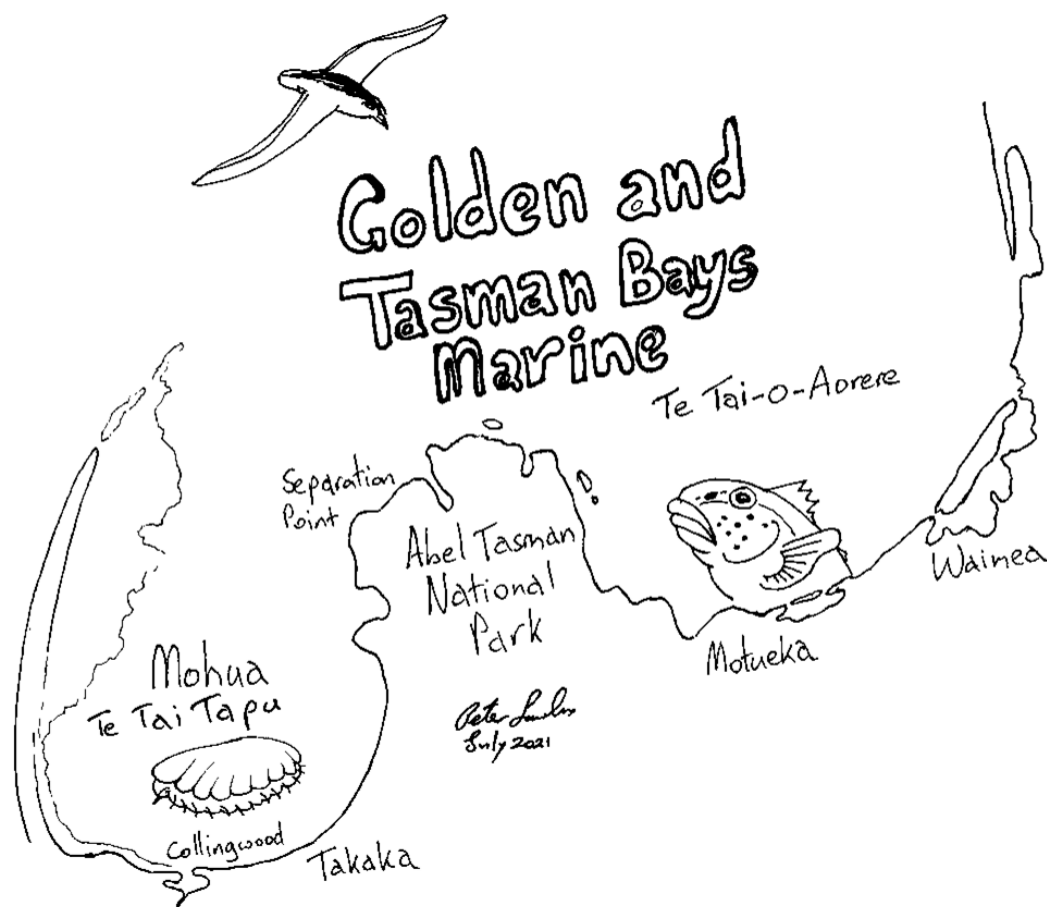


Illustration: Peter Lawless

### Te Taiao – Natural environment

This area includes all of the marine environment outside the river mouths and estuaries, which are included with the land areas. Golden and Tasman bays are semi-protected large bays important for a range of species, including international migrant birds. Estuaries, sand beaches, rocky reefs, rocky shores and reefs historically provided a diversity of habitat inshore that supported large populations of resident and migrant coastal birds and shorebirds. Sub-tidally there was a mosaic of benthic habitats on mostly soft bottoms, with large areas of biogenic reefs interspersed with areas of infauna. Marine mammals were diverse and abundant with breeding colonies of sealions, now gone, and others such as fur seals, once common but now rare. These also included Hector's dolphin and large whales.

### Whakaora te Taiao - Opportunities for restoration

1. Opportunity to create no-bottom trawl or dredge zones and hard material or structures to create habitat and promote re-establishment of biogenic communities. Disturbance by some fishing methods has substantially modified soft-sediment habitats, homogenising sediments and reducing biogenic structure within the bays. Many documented communities are characteristic of disturbed environments, but the extent and status of the remaining biogenic habitat could be better understood (although it is known to be limited). Biogenic habitats are important in their own right and also as nursery areas for many fish species.

Historically these biogenic communities included bryozoan corals, rhodolith, horse mussel, green and blue mussel and oyster beds. Fine sediment accumulation, resuspension and ongoing input from land has further modified the benthic environment and is preventing restoration of benthic communities. This has also seen a loss of scallops to levels that cannot sustain harvest.

2. Restore depleted fish stocks. Protected areas show an increase in the numbers of some exploited species. There is evidence to suggest that fishing is having food-web effects on rocky reefs. Seaweed forests are sparse and most reefs that would have been occupied by seaweed are dominated by 'barren' zones. This indicates that fishing down of predators, such as snapper and crayfish, has caused the food web to collapse to the extent that grazers now prevent the re-establishment of diverse communities.
3. Extend the marine protected areas network to include representation of typical and rare habitats. The two marine reserves, one wildlife management reserve and one intertidal nature reserve are small and confined to within one nautical mile of the shore.
4. Prevent further invasion and spread of harmful marine organisms. Biosecurity surveys at ports within the bays have found a number of established invasive species, but substantial negative impacts have not yet been documented. The risk of further invasion and spread remains.
5. Mitigate the adverse effects of climate change and ocean acidification by restoring resilience through reducing stressors, restoring and sustaining the natural functioning in marine ecosystems.
6. Improve understanding of the ecological functioning of the bays. Significant remaining biogenic habitats need to be mapped, the movement of water in the bays including river plumes needs to be better understood, and habitat use by marine mammals and coastal birds should be documented.

### **Mātauranga ki te Tai ō Aorere – Traditional knowledge**

Iwi association with the coastal marine area is an integral part of their rohe in Te Tau Ihu. Areas of particular cultural significance are numerous throughout Tasman and Golden bays. Iwi have strong and unbroken traditional, historical, cultural and spiritual associations with this long coastline and its rich ecosystems. These associations remain today and are central to identity and mauri of the iwi. Large complexes of pā, cultivations and fishing areas were located at river mouths all along the coastal margin. Fur seals, which were once common along much of the coast, formed a valuable resource. Cliffs contain burial caves and tauranga waka existed at many locations along these relatively sheltered shores. Among the most important of the fishing stations was Waimea.

Whānau were dependant on the coast for their physical and spiritual wellbeing. Accordingly, the tikanga/kawa and mātauranga which guided the way in which resources were harvested was a central part of daily life. Knowledge of the coastal environment and associated seasonal resources and weather patterns supported travel and the collection of food and materials. This knowledge has been passed down from tūpuna to current generations. Marine mammals, such as whales and seals were harvested by tūpuna. Whales are a highly valued taonga - a gift from Tangaroa. Such a precious gift could not be wasted, so traditionally every part of a beached whale was used. The oil was collected for fuel, the flesh was used for food and the bones and teeth made into weapons and carved into precious ornaments. The plentiful supply of seals provided tūpuna with meat and their skins were cleaned and sown together for a range of uses.

### **Whakaora te Taiao - Opportunities for restoration**

1. The positive and negative effects of aquaculture are well understood by the community and plastic pollution from aquaculture operations is negligible.

2. Large scale restoration actions are underway in the bays.
3. Bottom trawling, dredging, Danish seining no longer occur in Tasman and Golden bays.
4. Low impact harvest methods are being used in all fisheries and seafood harvesting is undertaken at ecologically sustainable levels with ecologically sustainable methods.

### **Intermediate Outcomes**

1. Bycatch of coastal birds and marine mammals is zero.
2. Sediment inputs from rivers and streams are at levels that enable benthic habitats to recover and all native species to thrive.
3. Recovery of biogenic habitats is documented across wide areas.
4. Shellfish beds have been restored to a level where harvesting can be sustained.

### **Hoaketanga – First priority actions**

1. Document fine sediment sources and sinks for the bays to enable controls and restoration.
2. Document habitat use by shorebirds, coastal birds and marine mammals in Golden and Tasman bays.
3. Complete a comprehensive ecosystem-based spatial restoration and management plan for Tasman and Golden bays.
4. Commence seabed restoration programmes.
5. Identify and protect areas of high biodiversity value.
6. Establish programmes to build community responsibility in restoring an abundance of kaimoana.



Scallop (*Pecten novaezealandiae*) (Photo courtesy of Dive HQ Wellington)

## Abel Tasman - Te Matau-a-Māui

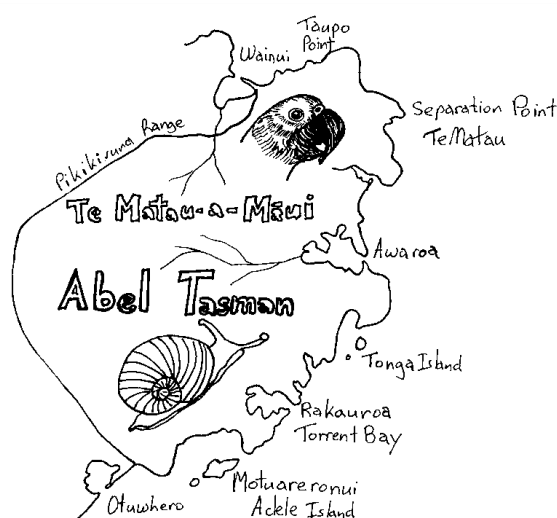


Illustration: Peter Lawless

### Te Taiao – Natural environment

Apart from swampland behind dunes at the mouths of some valleys, the entire area was originally forest covered. Forest was predominantly silver beech at the highest levels, black beech over much of the lower slopes, red beech in the gullies and hard beech on the drier ridges. Gully beech forest was mixed with broad-leaved species, northern rata and podocarps. In the lower valleys, the diversity of broad-leaved species increased, mixed with podocarps such as rimu and kahikatea. Kahikatea swamp forest was present in the lower valleys. Estuarine vegetation bordered the inlets. The core of the area remains in original beech forest and there are remnants of mixed broad-leaved / podocarp forest in the valleys. Much of the original valley-floor forest has been removed and only small patches of swamp forest remain. Much of the original forest around the coast has been burnt and secondary forest, dominated by tree ferns and kanuka, covers large areas, especially in the north and south.

### Mātauranga ki te Tai ō Aorere – Traditional knowledge

For iwi this area includes Tata Beach and Ligar Bay through to Mārāhau. The papakāinga, fishing grounds, urupā and other wāhi tapu associated with the cultivation and occupation of land extend along the coastline. A huge variety and abundance of kaimoana was collected from the sea and estuaries. Species included mātaitai, such as tuatua, pipi and tuangi (cockle). Fish such as barracouta, red cod and ling were also part of the kai harvested. Occupation sites can still be seen around Te Matau (Separation Point). They are indications of the decades of Māori traditional and cultural history with these waterways and lowland forests. Te Matau has a mauri of its own. This life force binds the spiritual world with the physical world. The adjacent coastal waters had abundant moss animals or lace corals, which were thought to provide habitat for juvenile finfish such as snapper and terakihi. Fur seals were, and still are, found along the coast, particularly on granite headlands. Traditionally at Separation Point, the nearby beach provided a plentiful number of seals for harvest, while a number of small caves sheltered tūpuna as they cleaned and sewed up sealskins. Blue penguins (kororā) feed at sea during the day and return to burrows at night. Makomako (bellbirds), and kererū (wood pigeons) feed on the berries and were an important resource.



### **Whakaora te Taiao - Opportunities for restoration**

1. Protect the few remaining areas of swamp forest. These are mainly secondary kahikatea forests and also include patches of young pukatea.
2. Increase representation of lowland forest types in protected areas beyond beech forest and secondary mixed forests.
3. Reduce the high goat numbers outside the Abel Tasman National Park.
4. Sustain philanthropic funding for ongoing restoration.

### **Intermediate outcomes**

1. A pest-free approach for one or more pest species is in place and being sustained over at least 10,000 ha.
2. Schools are empowered to use the park for authentic outdoor learning and are able to contribute meaningfully to the restoration of the park.
3. Community groups, landowners and businesses are supported and working together to protect and enhance the ecology of the park, by working both within the park and its halo.
4. Tourism and conservation activities within the park are aligned, creating sustainable employment opportunities through regenerative tourism and a meaningful connection between visitors and the restoration of the park.
5. Biodiversity values in the park and its halo are no longer threatened by invasive weeds and animal pests. Pest-free approaches provide additional security.
6. Most species that have been lost from the park have been re-introduced and plans for any remaining species (e.g. kiwi) are developed. By 2030 rare forest types and forest elements are restored (e.g., kahikatea forest and northern rātā) and thriving.
7. A pest suppression programme developed with community groups and landowners has reduced all major pests in the halo to low levels to protect the park from pest re-invasion and also to protect areas of significant ecological value in the halo.
8. Coastal areas of the park are free of highly-flammable non-natives and have been replaced by native ecosystems.
9. Populations of key indicator species are robust and showing positive trends.
10. Reintroduced native species are thriving.
11. The park continues to be maintained at near zero-density wildling conifers.

### **Hoaketanga – First priority actions**

1. Establish and fund a co-designed restoration plan for maintaining the ecological gains currently being made by philanthropic and community groups in the park.

## Kahurangi

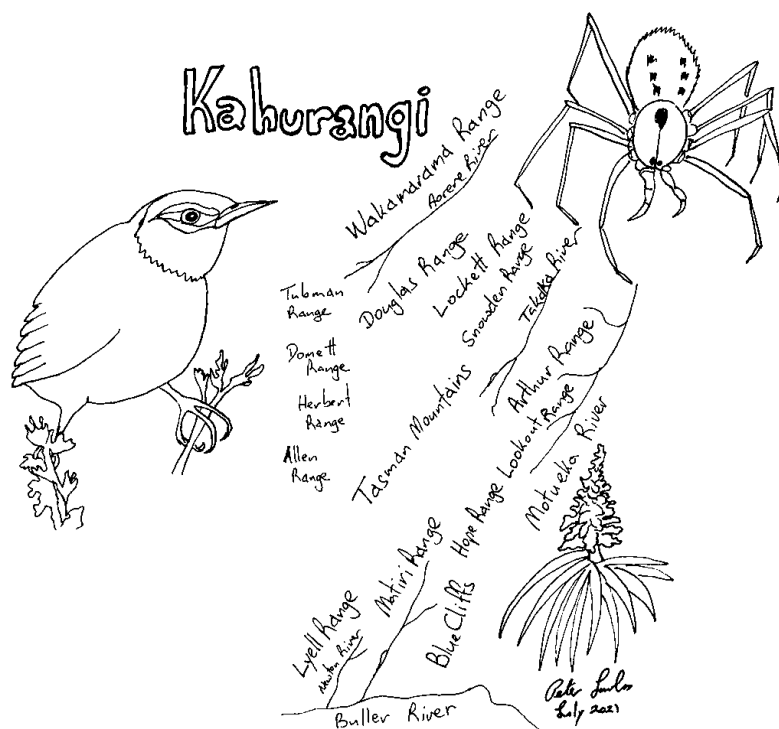


Illustration: Peter Lawless

### Te Taiao – Natural environment

One of five major hotspots of biodiversity in New Zealand, with a suite of species found nowhere else in the world. About 50% of all New Zealand native plants are represented here. A huge diversity of environments, linked to complex geology, are influenced by warm wet westerly weather. The area includes major forested mountains and alpine systems, large swamps, dune lands and lowland forests. It has some of the most important limestone and marble cave and karst systems in New Zealand, along with the largest marble ecosystems in southern hemisphere, including glaciated montane areas. At higher altitudes (above 600m) most of the former extent of the original ecosystems are still present, however the condition of these ecosystems is depleted both in fauna and flora. In the lowlands (below 600m), much of the original forest cover on the hill country has gradually been replaced by regenerating shrubland. Exotic forestry occurs on the margins. Most of the lowland wetlands have been lost.

### Mātauranga ki te Tai ō Aore – Traditional knowledge

The mountains of Kahurangi dominate the skylines of the coastal areas of Māori occupation and settlement. Many are sacred ancestors and guardians. Wharepapa (Mt Arthur), Pukeone (Mt Campbell) and Parapara are named in settlements as particularly significant ancestors, providing historical and spiritual links to the natural world. Each has a mauri of its own and this life force binds the spiritual world with the physical world. All elements of the natural world have a life force and it is this life force that connects the people with the maunga. They are natural reservoirs for high quality fresh water. The water that flows as the snow melts is sacred. Water is an essential element of life, a taonga that is considered to transcend life itself. Wai is necessary to ensure the physical and spiritual survival of all things. It also represents the lifeblood of Papatūānuku and the tears of Ranginui. Ngā awa carry this lifeblood from the maunga to the sea. The maunga are home to a wide range of animal and plant species, which are of great significance. Two notable species are the mountain neinei, which is the longest living indigenous tree, and the *Powelliphanta* (land snail). The

neinei was used to manufacture the wet weather capes worn by tūpuna. These taonga were highly valued by tūpuna and remain culturally significant today. The relationship iwi have with these sacred ancestors provides whānau with a 'sense of place' and belonging to the rohe. Originally, Huriawa, the taniwha of Te Waikoropupu, was buried on Parapara until she was called forth to guard the waterways and caves of Te Waikoropupu. There are a number of tomo (sacred caves) within these maunga.

### **Whakaora te Taiao - Opportunities for restoration**

1. Arrest decline of the many rare species and populations of native species found nowhere else in the world that remain under threat.
2. Reduce the adverse effects of pests and physical damage on natural ecosystem processes.
3. Restore rare and uncommon ecosystems that have lost key drivers (coastal bird burrowed soils) or have been reduced to remnant fragments (lowland alluvial podocarp forests, lowland wetlands and dune slack wetlands).
4. Protect and restore all ecosystems that are naturally rare (cliff overhangs, alpine seepages) or that have been reduced to remnant fragments (alluvial forests, lowland and dune slack wetlands).

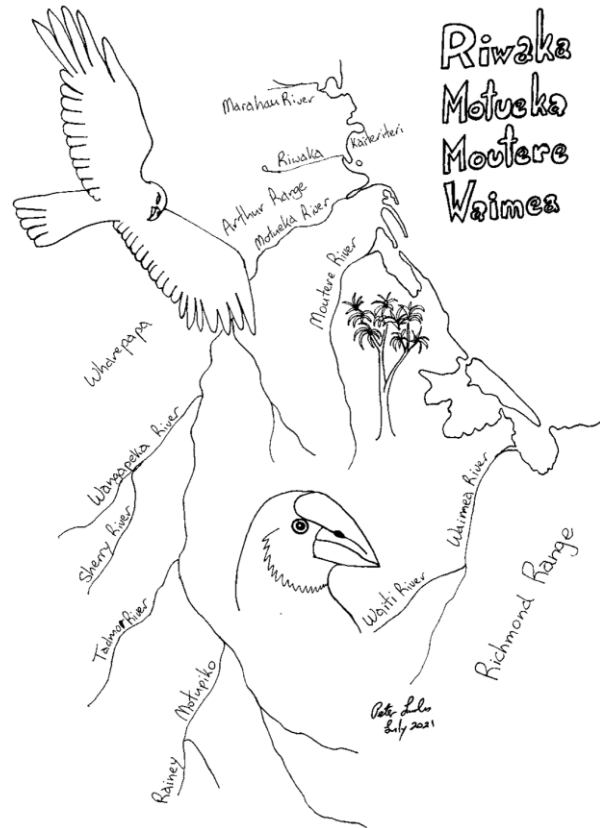
### **Intermediate outcomes**

1. People experience a wide range of endemic species and this impacts positively on their communities through tourism and research partnerships.
2. Pest pressures are reduced throughout natural areas.
3. All threatened flora populations are secured and no longer considered threatened.
4. Fully functioning indigenous ecosystems have been restored over large areas.
5. At risk ecosystems are well represented, and fully functioning in restored areas and their geological and biological diversity is celebrated.

### **Hoaketanga – First priority actions**

1. Intensify management of ecosystem pressures in areas of high endemism.
2. Protect native species from rats and mustelids at a landscape level.
3. Control ungulates to below established damage thresholds.
4. Use propagation, seed banking, translocation, fencing and restoration planting to secure threatened species in situ.
5. Co-designed halo protection with communities around Kahurangi National Park.
6. Monitor all management actions for threatened species so that the effectiveness of these actions are known.
7. Establish the feasibility of restoring mainland coastal bird induced ecosystems.
8. Extend pest control programmes using the full range of existing technologies, while new innovative technologies are being explored and developed to be used at a landscape level.
9. Cultivate a stronger understanding of the geological and biodiversity values of under-appreciated ecosystems by providing appropriate interpretation and sustainable visitor opportunities.

## Riūwaka-Motueka-Moutere-Waimea



### Te Taiao – Natural environment

Formerly the area would have been almost entirely covered in forest. The alluvial plains and terraces supported towering podocarp forests and pockets of broad-leaved forests in sheltered lowland sites. On the low hills was mixed forest of black beech, hard beech, rimu, totara, kāmahī, tītoki and tawa. Along the coastal bluffs and fringing the estuaries, ngaio, cabbage tree, kōwhai and totara would have been common. The estuaries were alive with wetland birds, fish and invertebrates. They had vegetation sequences grading from eelgrass and saline turf into rushes, sedges, harakeke and finally into forest. Wetland ecosystems would have included fertile lowland swamps, interconnected with rivers and streams, including riparian ecosystems and some braided river beds. What remains is mostly in small fragments and the freshwater wetlands have almost completely gone. Waimea Inlet is the largest semi-enclosed estuary in the South Island. It is recognised as a nationally important example of this type of ecosystem. Its estuaries and estuarine margins are home to rare and threatened native plants and animals, as well as important populations of coastal and wetland birds and migratory wading birds. Rabbit Island/Moturoa and other islands within Waimea Estuary are now largely covered in exotic species, except for fragments of wetlands or coastal forest.

### Mātauranga ki te Tāi ō Aorere – Traditional knowledge

Mātauranga associated with the collection of resources was central to the lives of tūpuna. The lowlands were highly valued areas by tangata whenua. Seven iwi record places and resources of significance in this area and historic battles to secure occupation rights and rangatiratanga over these environments. Whānau modified the landscape, including building warm, fertile soils for kūmara. Settlements, pā and associated papakāinga are recorded along the coast, with the following areas noted as being important: Kaiteriteri, Kākā Point, Riwaka River, Motueka River,

Waimeha River and Inlet, Wairoa, Motupiko and Wai-iti Rivers, Puketāwai and Mangatawa. These areas are referred to as the source of life for the people and the intense relationship with the natural environment was mediated through ancestral connection with Atua and ngā tonga tuku iho. Valued natural resources included: fish such as tuna, kōkopu and īnanga, birds such as whio, kererū, kākāpō, tui, korimako, weka, kākā and kiwi, both for food and feathers, plants such as many varieties of harakeke, fruiting vines and trees, and invertebrates such as the freshwater koura.

### **Whakaora te Taiao - Opportunities for restoration**

1. Restore the connectivity of natural areas that have become fragmented in an overwhelming dominance of exotic landscapes and increase their resilience to the effects of climate change.
2. Restore “threatened ecosystems” in the valleys and on the hill slopes that have lost most of their natural ecosystems.
3. Bring significant natural areas under active management.
4. Bring indigenous biodiversity back into urban landscapes.
5. Mitigate the adverse effects of climate change in fragmented and severely depleted ecosystems.
6. Restore the once extensive wetlands and reverse the widespread degradation of lowland streams, thus seeing the return of marsh birds and fish such as giant kōkopu.
7. In the Waimeha and Moutere inlets, reduce: muddiness impacts sourced from urban development, intensive pastoral and exotic forestry land uses; risks of nutrient eutrophication; climate induced increases in ocean acidity and temperature. Reverse historic salt marsh loss and reduce vulnerability to losing the remaining eelgrass cover. Ameliorate discharges of wastewater and stormwater.
8. Reduce vulnerability of fragmented and severely depleted ecosystems.

### **Intermediate outcomes**

1. The remaining alluvial podocarp forests and coastal and freshwater wetlands have been protected and restoration of the last remaining fragments has begun.
2. Production landscapes and the economy are thriving whilst protecting biodiversity.
3. Communities are achieving net restoration of native vegetation as adaptation to changing shorelines due to climate change effects are felt.
4. Riparian margins have been restored with native vegetation creating ecosystem corridors.
5. Nitrate concentrations in spring-fed or partially spring-fed streams are reduced to less than 1 g/m<sup>3</sup>. Currently the nitrate concentrations in Borck Creek average about 7 g/m<sup>3</sup>, Neimann and Pearl creeks about 4 g/m<sup>3</sup>.
6. Native mistletoes again bloom across the landscape.

### Hoaketanga – First priority actions

1. Co-design with landowners a rolling programme of weed control and fencing for identified Significant Natural Areas.
2. Begin bringing nature back into the places where people live by targeting restoration on riparian reserves.
3. Resolve the protection status of council-administered Motueka sewage treatment land, Bell Island, Rough Island and Hunter Brown Reserve, including dealing with the impacts of vehicles and dogs in these areas.
4. Complete a Restoration Strategy and Action Plan for the Motueka/Rīuwaka/Moutere estuary delta complex, including the roosting and feeding areas for migratory birds.
5. Evolve more sustainable land use practices on highly erodible soils.
6. Preserve and restore the remaining significant forest areas in private ownership.
7. Make the Motueka Sandspit Reserve ambulatory to match the actual location of the spit. Motueka Sandspit is the second-most important shorebird roosting site (after Farewell Spit).
8. Commence creating wetlands and marsh bird habitat in the Waimeha River park, controlling access by people and vehicles as required to protect birds and fish.
9. Protect spawning areas for native fish, restore fish passage and eradicate pest fish.



**Long finned eel** (Photo courtesy of Department of Conservation)

## Eastern Tasman Ranges - Maungakura

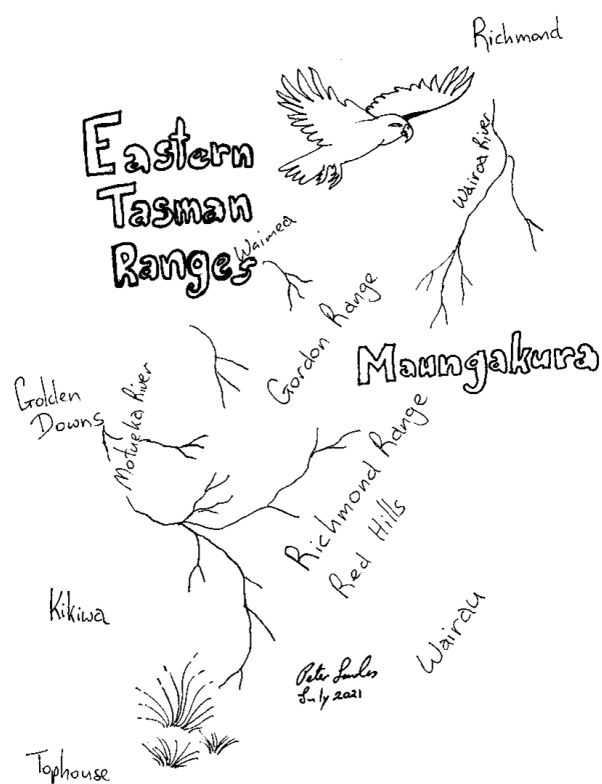


Illustration: Peter Lawless

### Te Taiao – Natural environment

This area is central to the Top of the South and creates connections amongst other areas. It includes the headwaters of the Motueka, Wairoa and Lee rivers. Mt Richmond has largely forested uplands, with important forest remnants in the lowlands. In the special mineral belt ecosystems, where the soil repels most native trees, a unique shrubland community has evolved. The mineral belt has many special species, but is subject to invasion by woody weeds and browsers. This area has geological significance, as it links through time to the Red Hills in South Westland and thus reflects dynamic landscape shifts. Threatened and at-risk animal communities are present throughout the ranges, including long-tailed bats/pekapeka and two distinctive snail species. The hills are frequently visited by kea and other terrestrial birds, such as South Island robin/toutouwai. Human activities bordering this forest park are mostly primary industry, with exotic forestry the dominant land use. Consequently, there has been problems with wilding conifers, especially on the mineral belt and alpine ecosystems. The Te Araroa trail traverses the length of Mt Richmond Forest Park.

### Mātauranga ki te Tāi ō Aorere – Traditional knowledge

The maunga of the east provided the headwaters for the pure water of the awa. The hills were abundant with native bird life, including ducks, weka, kererū, kākāpō and kaka.

### **Whakaora te Taiao - Opportunities for restoration**

1. Halt invasion of the mineral belt and limestone areas by woody weeds and browsers to protect the many special species found there.
2. Undertake control of pests in Mt Richmond Forest Park, as this area is relatively low in the Department of Conservation priorities, so these threats are largely uncontrolled.
3. Build capacity for Mt Richmond to be a rich and safe environment for the abundance of wildlife overflowing from the Brook Waimarama Sanctuary.

#### **Intermediate outcomes**

1. Wildling conifer control in the Red Hills mineral belt is at maintenance levels and programmes are in place to deal with other weeds and pests.
2. Programmes to restore riparian margins and alluvial forest remnants have commenced.
3. Maintenance programmes are in place for all Significant Natural Areas.
4. Perception of Mt Richmond has changed from a largely unknown area to a treasure at Tasman's back door.

#### **Hoaketanga – First priority actions**

1. Identify areas and processes where sediment loss from land needs to be reduced to safeguard biodiversity in water.
2. Identify important areas for threatened or at-risk species and initiate pest control.
3. Engage with other regions in preparing and implementing a comprehensive plan for restoration of Mt Richmond Forest Park and contiguous natural areas.
4. Establish programmes to educate people about the importance of the Eastern Tasman hills to their wellbeing and the potential to secure threatened species and reintroduce lost elements.
5. Protect remaining significant alluvial forests.



*Myosotis monroi* (Photo courtesy of Duncan Cunningham)



## Upper Buller - Kawatiri

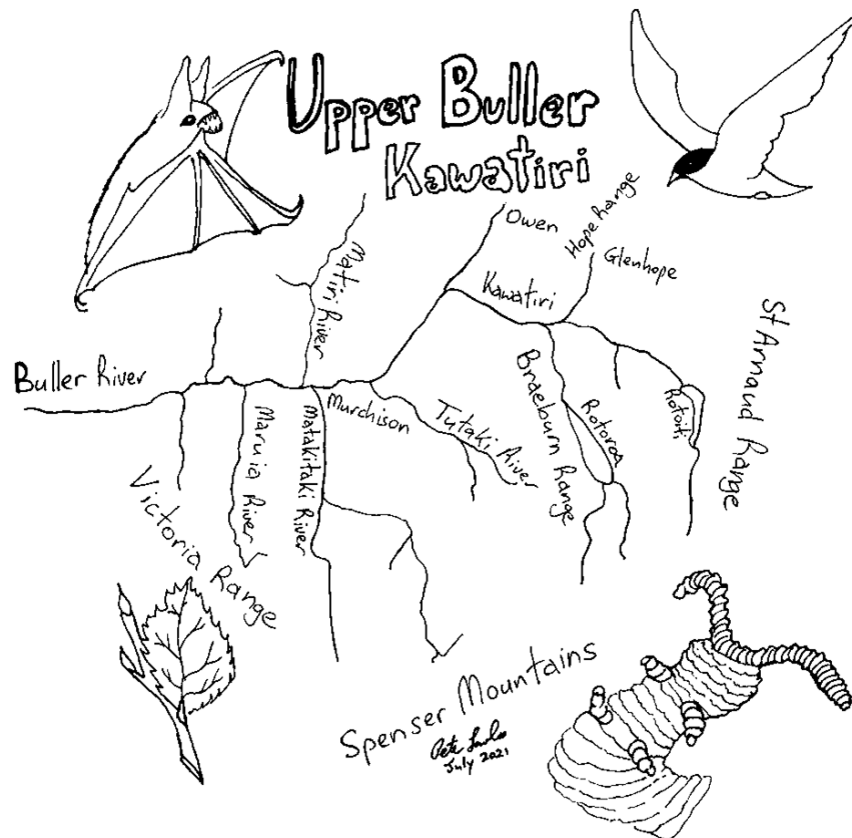


Illustration: Peter Lawless

### Te Taiao – Natural environment

Large, relatively unmodified, beech forest with extensive mountainous areas and alpine communities command the landscape. Extensive and intact unmodified freshwater systems, dominated by the two large glacial lakes, the Kawatiri/Buller River and its many tributaries, cross through the lower altitudes. Frost flat and valley wetland communities are an interesting and important feature. The Kawatiri/Buller catchment, until relatively recently, was a South Island stronghold for long-tailed bats/pekapeka. It is the highest general altitude area in the Tasman region, with the evidence of glaciation clearly visible. The Kawatiri/Buller is the largest wild river, with a National Water Conservation Order. The area includes good examples of natural valley floor wetland communities. Rural human communities are established around the edge of the national parks, and through the large valley floors. The economy includes primary industries, with some tourism, especially at gateway sites, e.g. Murchison and St Arnaud.

### Mātauranga ki Te Tau o Aorere – Traditional knowledge

The alpine tarns and lakes symbolise the mauri or life force that is contained in all parts of the natural environment and binds the spiritual and physical worlds. The tarns and lakes are named for tūpuna. They reflect the importance and purity of water as a taonga that helps link past, present and future generations; in doing so they provide a path to the hereafter. These tarns and lakes are also markers on a series of interwoven trails, discovered and used over many centuries as tūpuna travelled the region. The maunga and lakes are also spiritual markers. Kawatiri River and its associated settlement sites, are of inestimable importance as a pathway and as an important source of mahinga kai. Its pure water was abundant in fish such as kōkopu, tuna (eels), īnanga, kahawai, kēkewai and koura. The area was a rich source of birds, such as kaka, kererū, kākāpō, kiwi and weka.

A number of pā, cultivations, mahinga kai and urupā were located on the river. Cultivation of “fern gardens” on the western slopes of Rotoroa indicates that the lake was of considerable importance. It was used as a campsite for parties crossing the hinterland, to and from resource gathering areas and mahinga kai throughout the northern and western South Island. Lakes Rotoiti and Rotoroa were used as food baskets to replenish supplies on journeys and also as seasonal or semi-permanent camps.

### **Whakaora te Taiao - Opportunities for restoration**

1. Extend pest control beyond the Rotoiti mainland island. This area has seen a gradual decline in forest condition, and in key species, due to goats, deer, possums, stoats, deer, and other pests.
2. Reverse depletion and degradation of frost flat and valley floor communities.

#### **Intermediate outcomes**

1. Initiatives underway to support the local economy by attracting high value visitors to area.
2. Landowners have become advocates/kaitiaki of frost flat shrublands.
3. Model landscape level threat control attracts additional funding for research opportunities that in turn benefits local communities.
4. Long-tailed bat/pekapeka hot-spots are restored.
5. The number of braided river birds has been restored to levels where the populations are sustainable, halting conversion to farmland and reversing invasion by willows.

#### **Hoaketanga – First priority actions**

1. Restrict stock access and carry out active planting on frost flat and valley floor wetland communities.
2. Reduce land use intensification and improve support programmes for restoring riparian margins.
3. Establish programmes to restore and protect good examples of extensive functional frost flat shrublands.
4. Establish programmes to protect small streams, riparian margins and alluvial forests from impacts of land use activity.



Whio (Blue ducks) (Photo courtesy of Forest and Bird)

## Arotūruki me Arotake - Monitoring and review

Progress with this Biodiversity Strategy will be monitored by a Biodiversity Strategy Coordinating Group and the results reported to the Tasman Biodiversity Forum annually, as well as being on a Biodiversity Strategy website. The website will function as a living document, updating the evidence and opportunities to contribute to restoration. Monitoring parameters are being developed under the New Zealand Biodiversity Strategy and these will be able to be utilised in Tasman as appropriate.

The Biodiversity Strategy will be reviewed and updated at a time and process determined once the implications of the National Policy Statement on Indigenous Biodiversity are understood, but no later than 1 July 2027. The review may be done for parts as information becomes available or in whole if that is more appropriate.

## Kuputaka - Glossary of te reo terms

<b>Ahi kā roa</b>	Long burning fires of occupation, continuous occupation - title to land through occupation.
<b>Arotake</b>	To evaluate, review, audit.
<b>Arotūruki</b>	To monitor.
<b>Atua</b>	Ancestor with continuing influence, god, demon, supernatural being, deity, ghost, object of superstitious regard, strange being - although often translated as 'god' and now also used for the Christian God, this is a misconception of the real meaning. Many Māori trace their ancestry from atua in their whakapapa and they are regarded as ancestors with influence over particular domains.
<b>Aukati</b>	Prohibition.
<b>Awa</b>	River, stream, creek.
<b>Hangaia</b>	Building.
<b>Hapori whānui</b>	Wider community.
<b>Hapū</b>	Kinship group, clan, tribe, subtribe.
<b>Hīnaki</b>	Eel trap.
<b>Hine-parawhenua</b>	Atua of foreshore.
<b>Indigenous</b>	Produced, growing, living, or occurring natively or naturally in a particular region or
<b>Iwi</b>	Extended kinship group, tribe, nation.
<b>Kaimoana</b>	Seafood, shellfish.
<b>Kaitiaki</b>	Guardian, trustee, minder.
<b>Kaitiakitanga</b>	The obligation to nurture and care for the mauri of a taonga; ethic of guardianship, protection.
<b>Kaumātua</b>	Elderly person, a person of status within the whānau.
<b>Mahinga kai</b>	Garden, cultivation, food-gathering place.
<b>Māna</b>	Prestige, authority, control, personal charisma.
<b>Manawhenua</b>	Territorial rights, authority over land or territory.
<b>Manaakitanga</b>	Hospitality, kindness, generosity, support.

<b>Manu</b>	Bird, winged creature.
<b>Mātaítai</b>	Customary seafood gathering site.
<b>Matauranga</b>	Māori knowledge; the body of knowledge originating from Māori ancestors, including the Māori world view and perspectives, Māori creativity and cultural practices.
<b>Maunga</b>	Mountain.
<b>Mauri</b>	Life principle, life force, vital essence.
<b>Moana</b>	Sea, ocean.
<b>Ngā iwi tangata whenua</b>	Tribes with ancestral connections to the land.
<b>Ngā Uri o ngā Hekenga</b>	The descendants of the migrations.
<b>Pa</b>	Fortification.
<b>Papakāinga</b>	Village.
<b>Papatūānuku</b>	Earth, Earth mother.
<b>Pōu</b>	Post, upright, support, sustenance.
<b>Pūrākau</b>	Myth, ancient legend, story.
<b>Rahui</b>	To put in place a temporary ritual prohibition, closed season, ban, reserve.
<b>Rakahore</b>	Atua of rocks.
<b>Rangatira</b>	Chief.
<b>Rangatiratanga</b>	Chieftainship, right to exercise authority, sovereignty, self-determination.
<b>Ranginui</b>	Atua of the sky, sky father.
<b>Rohe</b>	Territory.
<b>Taonga</b>	Treasure, anything prized; applied to anything considered to be of value, including socially or culturally valuable objects, resources, phenomena, ideas and techniques.
<b>Taonga tuku iho</b>	Treasures handed down from the ancestors.
<b>Tangaroa</b>	Atua of the sea and freshwaters.
<b>Tangata whenua</b>	Local people, hosts, indigenous people - people born of the whenua, i.e. of the placenta and of the land where the people's ancestors have lived and where their placenta are buried.
<b>Te ao Māori</b>	The Māori world; A Māori perspective / world view.
<b>Teina</b>	Our role as children of the natural world.
<b>Te taiao</b>	Natural world, environment, nature.
<b>Te Tau Ihu</b>	The tangata whenua call the northern South Island by the name of Te Tau Ihu o te Waka a Maui. This name refers to the prow (te tau ihu) of the canoe (o te waka) of Maui (a Maui) and commemorates the fishing up of the North Island by Maui from his canoe (the South Island – Te Waka a Maui).
<b>Te Tiritiri o Waitangi</b>	The Treaty of Waitangi.
<b>Tiaki</b>	Protect, conserve, look after.
<b>Tino rangatiratanga</b>	Self-determination, sovereignty, autonomy, self-government.

<b>Tuakana</b>	Elder relative.
<b>Tupuna</b>	Ancestors
<b>Tāuranga waka</b>	Resting place, anchorage, fishing ground, place to land.
<b>Urupā</b>	Burial place
<b>Wahi tapu</b>	Sacred place.
<b>Waka</b>	Canoe.
<b>Whakahau</b>	To encourage, urge, direct.
<b>Whakapapa</b>	Genealogy, genealogical table, lineage, descent.
<b>Whanau</b>	Extended family, family group.
<b>Whenua</b>	Land.

## Glossary of technical terms

Note: The definitions provided here are intended to guide interpretation of the goals and narrative of this strategy. They do not replace the definitions of terms as set out in legislation.

<b>Biodiversity</b>	Biological diversity or the variability among living organisms from all sources, including land, marine and freshwater ecosystems and the ecological complexes of which they are a part; this includes diversity within species (including genetic diversity), between species and of ecosystems (based on the definition of the Convention on Biological Diversity).
<b>Biosecurity</b>	The exclusion, eradication or management of pests and diseases that pose a risk to the economy, environment, or cultural or social values, including human health.
<b>Browsers</b>	Herbivorous animals that generally feed on high-growing plants rather than grasses.
<b>Bycatch</b>	Species not targeted by a fishery but caught incidentally during fishing operations. Once caught, they can be landed, discarded or released.
<b>Climate change</b>	Changes in global or regional climate patterns that are evident over an extended period (typically decades or longer). May be due to natural factors or human activities.
<b>Community (human)</b>	Group or network of persons who are connected to each other by relatively durable social relations, including commercial entities.
<b>Community (ecological)</b>	An ecological community is a naturally occurring group of native plants, animals and other organisms that are interacting in a unique habitat.
<b>Conservation</b>	‘The preservation and protection of natural and historic resources for the purpose of maintaining their intrinsic values, providing for their appreciation and recreational enjoyment by the public, and safeguarding the options of future generations.’ (Conservation Act 1987).
<b>Data Deficient species</b>	Species for which there is so little information available that an assessment through the New Zealand Threat Classification System is not possible.
<b>Ecosystems</b>	Ecosystems consist of all the organisms and the physical environment with which they interact. These biotic and abiotic components are linked together through nutrient cycles and energy flows.

- Ecosystem health** Ecosystem health describes the fundamental physical and biological state of an ecosystem in relation to its ability to support services. A healthy ecosystem is stable and sustainable, maintaining its organisation and autonomy over time and its resilience to stress.
- Endemic species** Indigenous species that breed only within a specified region or locality and are unique to that area. Aotearoa New Zealand's endemic species include birds that breed only in this country but may disperse to other countries in the non-breeding season or as sub-adults.
- Extinction (species)** The loss of a species. The moment of extinction is generally considered to be marked by the death of the last individual of that species.
- Full range (ecosystems)** A comprehensive and representative range of natural habitats and ecosystems that reflects the known diversity of habitats and ecological communities remaining in Aotearoa New Zealand.
- Habitat** A combination of environmental factors that provide the food, water, cover and space that a living thing needs to survive and reproduce.
- Indigenous** Produced, growing, living, or occurring natively or naturally in a particular region or environment, e.g. the native plants and animals of Aotearoa.
- Indigenous species** Species that occur naturally in Aotearoa New Zealand.
- Intensification (agriculture)** An increase in the stocking rate of animals, or an increase in the level of production from a given area of land.
- Intrinsic** Belonging to the essential nature or constitution of a thing.
- Introduced species** Plant or animal species that have been brought to Aotearoa New Zealand by humans, either by accident or design. A synonym is 'exotic species'.
- Maintain (species/habitat/ecosystem)** Prevent a reduction in the: a) Size of populations of indigenous species; b) Occupancy of indigenous species across their natural range; c) Properties and functions of ecosystems and habitats; d) Full range and extent of ecosystems and habitats; e) Connectivity between and buffering around ecosystems; f) Resilience and adaptability of ecosystems. The maintenance of indigenous biodiversity may also require the restoration or enhancement of ecosystems and habitats.
- Migratory species** A species that moves from one habitat to another to complete its life cycle.
- Nature** A holistic term that encompasses the living environment (te taiao) – i.e. all living organisms and the ecological processes that sustain them. By this definition, people are a key part of nature. This strategy uses the term 'biodiversity' to refer to biological diversity and 'nature' when considering the wider processes, functions and connections of the natural environment, of which biodiversity is a part.
- Nature-based solutions** Solutions that are inspired and supported by nature, cost-effective, and simultaneously provide environmental, social and economic benefits and help build resilience.
- New Zealand Threat Classification System** The system used to assess the conservation status of Aotearoa New Zealand's native species. Categories include: At Risk, Data Deficient, Not Threatened and Threatened (also defined in this glossary).
- Non-indigenous biodiversity/species** Species that have been brought to Aotearoa New Zealand by humans, whether intentionally or unintentionally. A synonym is 'introduced species'.

<b>Pest</b>	Plant and animal pests are species that have been introduced to New Zealand and threaten our native plants, animals and natural habitats. Plant and animal pests have become the greatest single threat to our native plants and animals. Plant pests threaten native plants by smothering, strangling or crowding them out. Eventually plant pests can take over forests and wetlands. Many are also a nuisance to farmers, in home gardens and may cause health problems for some people. Animal pests threaten native ecosystems, such as forests and wetlands. Some animal pests, such as feral goats and possums, destroy plants by eating their leaves, flowers or fruit. Other animal pests, such as stoats and rats, eat native birds or their eggs as well as native lizards, frogs and insects. Many animal pests are also a nuisance to farmers, in suburban gardens and businesses. For example, goats create erosion on riverbanks, and possums carry bovine tuberculosis (Tb). Bovine Tb is a disease that affects farm animals and threatens our export markets.
<b>Private land</b>	Land in private ownership – that is, land not managed by the Department of Conservation or any other public body.
<b>Protected area</b>	A geographically defined area that is protected primarily for nature conservation purposes or to maintain biodiversity values, using any of a range of legal mechanisms that provide long-term security of either tenure or land use purpose. It may be publicly or privately owned.
<b>Protection</b>	Looking after biodiversity in the long term. This involves managing all threats to secure species from extinction and ensuring that their populations are buffered from the impacts of the loss of genetic diversity and longer term environmental events such as climate change. This includes, but is not restricted to, legal protection.
<b>Resilience</b>	Species definition: The ability of a species, or variety or breed of species, to respond and adapt to external environmental stresses. Ecosystem definition: The ability of an ecosystem to recover from and absorb disturbances, and its capacity to reorganise into similar ecosystems.
<b>Restore (ecology)</b>	The active intervention and management of modified or degraded habitats, ecosystems, landforms and landscapes in order to reinstate indigenous natural character, ecological and physical processes, and cultural and visual qualities.
<b>Restorative</b>	Prevent, halt and reverse the degradation of ecosystems.
<b>Sediment</b>	Particles or clumps of particles of sand, clay, silt, or plant or animal matter carried in water.
<b>Sedimentation</b>	The process of settling or being deposited as a sediment.
<b>Species</b>	A group of living organisms consisting of similar individuals that are capable of freely exchanging genes or breeding. In this strategy, we use the term to include subspecies and varieties.
<b>Sustainability / sustainable use</b>	'The use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations.' (Convention on Biological Diversity).
<b>Threatened species</b>	Species assessed according to the New Zealand Threat Classification System as facing imminent extinction (or a reduction to just a few small, safe refuges, which makes them highly susceptible to stochastic events) because of their small total population size and/or rapid rate of population decline. This includes three sub-categories: 'Nationally Critical', 'Nationally Endangered' and 'Nationally Vulnerable'.

<b>Value</b>	The value placed on something for what it is rather than what it can provide.
<b>Valued introduced species</b>	Introduced species, including sports fish, game birds and animals and species introduced for biocontrol, which provide recreational, economic, environmental or cultural benefits to society.
<b>Upland</b>	Areas above 600m above sea level.
<b>Weed</b>	A plant pest considered to be unwanted or a nuisance. The term is often used to describe native or non-native plants that grow and reproduce aggressively.

### **Compiled by the Tasman Biodiversity Strategy Working Group**

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**Jenna Neame (Kaihautu) (part process)**  
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- i mountain flax *Phormium cookianum*  
ii *Pseudowintera traversii*  
iii *Pimelea villosa*  
iv *Euphorbia glauca*  
v *Eleocharis neozealandica*.  
vi Gannets *Morus serrator*  
vii Bar-tailed godwit *Limosa lapponica*  
viii Seals *Arctocephalus forsteri*  
ix Great spotted kiwi *Apteryx maxima*  
x Fern bird *Poodytes punctatus*  
xi *Nestor meridionalis*  
xii Falcon *Falco novaeseelandiae*  
xiii Blue duck *Hymenolaimus malacorhynchos*  
xiv *Deinacrida* species  
xv *Spelungula cavernicola*  
xvi *Powelliphanta* species  
xvii Cockles *Austrovenus stutchburyi*  
xviii *Paphies australis*  
xix *Paphies subtriangulata*  
xx Cat's eye turban shell, *Turbo smaragdus*  
xxi Mussels of several species  
xxii Rock oysters *Saccostrea glomerata*  
xxiii Whitebait *Galaxias maculatus*  
xxiv Species of eels  
xxv *Galaxias* species  
xxvi *Pagrus auratus*  
xxvii *Aldrichetta forsteri*, *Mugil cephalus*  
xxviii Flounder *Rhombosolea* spp  
xxix *Peltorhamphus novaezeelandiae*  
xxx *Arripis trutta*  
xxxi *Scomber australasicus*  
xxxii Conger eels *Conger verreauxi*  
xxxiii Lamprey *Geotria australis*  
xxxiv *Seriolella* species  
xxxv Rimurēhia *Zostera muelleri*  
xxxvi Supplejack *Ripogonum scandens*  
xxxvii *Freycinetia banksii*  
xxxviii Golden sand sedge *Ficinia spiralis*  
xxxix Flax *Phormium tenax*  
xl *Elaeocarpus dentatus*  
xli Lancewood *Pseudopanax crassifolius*  
xlii *Chalinolobus tuberculatus*