Biodiversity Strategy

An operational strategy to guide biodiversity actions of the Taranaki Regional Council

'Working with people caring for the environment'

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A vision for biodiversity in Taranaki

The full range of Taranaki's indigenous ecosystems and species are maintained in a healthy and fully functioning state, from the mountain to the ocean depths and from protected areas to productive landscapes.

Agencies, community groups and individuals work cooperatively in partnership, taking an integrated, efficient and cost effective approach that is based on sound science.

People living in Taranaki value and better understand biodiversity so that we can all enjoy and share in its benefits, as the foundation of a sustainable economy and society.

Taranaki's own unique character and the biodiversity matters of national importance are sustained and enhanced now and into the future.

Preface

The Taranaki Regional Council (the Council) has carried out a number of functions since its inception that coincidently relate to the protection or restoration of indigenous biodiversity, such as animal pest control and the promotion of riparian restoration. These functions were initiated not primarily for biodiversity purposes, but rather for the protection of agricultural values or water quality, however, the maintenance or enhancement of biodiversity enhancement has been a positive spin-off of these projects.

Increased emphasis is now being placed on local government to promote and undertake indigenous biodiversity protection work. It is therefore timely for the Council to take stock of existing and proposed indigenous biodiversity functions, and to identify where, and how, the Council is best placed to carry out biodiversity work. This has resulted in the preparation of this Biodiversity Strategy, an operationally focused, non-regulatory, non-statutory document to guide Council's biodiversity work.

The Taranaki region is a biologically diverse region. The iconic mountain, enveloped by a national park sits like an island of biodiversity surrounded by the intensively farmed ring plain. East Taranaki still has substantial areas of indigenous vegetation and is home to a large kiwi population. Taranaki has a high native fish biodiversity due to the large number of short rivers leading to the sea. The coast line is at the merging point of two large biogeographic regions, resulting in a biologically interesting range of coastal and marine habitat types.

The development of the New Zealand Biodiversity Strategy in 2000 set the national framework for an increased focus on biodiversity protection nationally. An amendment of the Resource Management Act ('RMA') in 2003 cemented the pivotal role that local authorities play in safeguarding biodiversity, particularly on private land. The Council's mandate for biodiversity work stems primarily from the RMA, and is supported through other legislation such as the Biosecurity Act.

The national priorities for protecting rare and threatened native biodiversity on private land, recently released by the Government, set out priority areas for councils to focus on. These include indigenous vegetation associated with land environments that have less than 20% indigenous cover remaining. Much of the Taranaki ring plain and coastal terraces in South Taranaki environment fall into this category, highlighting the importance of remaining remnant areas of indigenous vegetation. Other priorities focus on protecting indigenous vegetation associated with sand dunes, wetlands and 'originally rare' terrestrial ecosystems. The final national priority is to protect habitats on private land important for threatened indigenous species. Sustaining these national priorities is important as is those biodiversity aspects that contribute to Taranaki's unique character.

There are many challenges for the Council when progressing biodiversity work, but equally many opportunities. It is important not to duplicate the work of other agencies, but rather to work cooperatively, provide support and adding value where appropriate. The Council is best placed to add value to the business of biodiversity in Taranaki by focusing its efforts on areas of biodiversity work where it has the greatest legitimacy, as provided through legislation, long term council plans and policy, and where those actions can build on existing Council skills and capacity. The key to success is working with people in a positive and constructive way.

Thus the Council proposes to use existing resources to efficiently and effectively further the management of biodiversity on private land in Taranaki by: focusing on regionally significant sites (Key Native Ecosystems); enhancing the biodiversity component of existing programmes; working with others in the community, particularly on high profile iconic projects; and developing systems for the gathering and management of biodiversity information. Through this approach the Council aims to deliver on the national priorities for protecting rare and threatened biodiversity on private land.

Council's Top Biodiversity Priorities[1]

1. Develop and implement an integrated and co-ordinated biodiversity protection and enhancement programme with private landowners on prioritised Key Native Ecosystems (regionally significant sites).

2. Acknowledge the biodiversity component of existing Council programmes, particularly the provision of education and advice. Bring an increased 'biodiversity focus' to these programmes, especially as they relate to the national priorities, i.e. indigenous vegetation associated with 'threatened land environment types', wetlands and habitats for threatened species.

3. Where appropriate, facilitate improved coordination of biodiversity work undertaken by different agencies, trusts and community groups across Taranaki in order to build capacity in the community for the efficient and effective maintenance and enhancement of indigenous biodiversity. This will include the development of community based partnerships to achieve success with a small number of 'iconic' biodiversity projects.

4. Contribute to the management and development of biodiversity information systems relevant to Taranaki to ensure management decisions are based on sound scientific information and to enable the monitoring of outcomes for biodiversity in the Region and the revision of priorities as necessary.

[1] *In no priority order.*

1. Introduction

1.1 Purpose

A number of the Council's day to day activities include an element of indigenous biodiversity protection or management. These functions include the development of plans, processing consent applications, protecting regionally significant wetlands, undertaking pest animal and plant control, assessing and removing barriers to fish passage, and the riparian and sustainable land management programmes.

Thus the Council has had a long involvement in biodiversity related activities. The 2003 amendment of the Resource Management Act (the 'RMA') further strengthened the role of regional councils in this area through specifically stating that one function was the establishment and implementation of objectives, policies and methods for maintaining indigenous biodiversity (s30(ga)).

The '*Biodiversity Strategy: An operational strategy to guide biodiversity actions of the Taranaki Regional Council*' (the 'Strategy') builds on earlier work that commenced a review of the Council's responsibilities in relation to indigenous biodiversity ('*Indigenous biodiversity for the Taranaki region: RPS working paper*', 2004).

The primary purpose of this Strategy is to pull together all the Council's biodiversity-related programmes under one operational document, develop a co-ordinated and focused programme of action for indigenous biodiversity work, and set out a road map for the future. The maintenance of indigenous biodiversity is work that spans across all sections of the Council and thus requires a 'whole of council approach'.

The Strategy spells out actions the Council proposes to undertake in order to implement the biodiversity objective, policies and methods of the Proposed Regional Policy Statement for Taranaki ('PRPS')(Appendix 1) and where appropriate, provide detailed information (criteria, priorities etc) to assist with annual work planning of the Council's programmes.

The review of the New Zealand Biodiversity Strategy ('NZBS')[2] recognised the importance of local government in terms of achieving the goals of the NZBS. It also commented on the difficulty of obtaining information from councils on their biodiversity achievements. It is hoped that developing, implementing and reporting on this Strategy will provide information to feed into the next review of the NZBS.

1.2 Background

1.2.1 What is biodiversity ?

Biodiversity describes the variety of biological life – plants, animals, fungi and even micro-organisms, it describes the diversity of ecosystems on land, in water and in the ocean. It is a term that encapsulates the whole diversity on earth including the diversity within species, and between species, from their genetic diversity to the ecosystems they live in.

[2] *Green, W and Clarkson, B (2005) Turning the Tide ? A Review of the First Five Years of the New Zealand Biodiversity Strategy. The Synthesis Report.*

The Resource Management Act defines biological diversity as the variability among living organisms, and the ecological complexes of which they are a part, including diversity within species, between species and of ecosystems.

1.2.2 Why is protecting local biodiversity important ?

New Zealand has a high level of biodiversity that is found only in New Zealand, thus New Zealanders are the only ones able to ensure the continued existence of that endemic biodiversity, that exists no where else in the world.

Protecting biodiversity is important not only from an intrinsic perspective, but also from an economic[3], social and cultural perspective:

- ✓ *economic* benefits in the form of ecosystem services (such as pollination, soil stability and fertility, maintaining water quality), tourism opportunities, and potential commercial and medical uses;
- ✓ *social* benefits in the form of a distinctive national identity as well as various recreational and research and educational benefits; and
- ✓ *cultural* benefits in the form of being able to recognise and continue Maori traditions, knowledge and customary uses (Willis 2003).

Flying the Taranaki colours ! Notoreas 'Taranaki' moth – this daytime flying moth is found only in south Taranaki and north-west Nelson.

Biodiversity management is a *local* issue because species, habitats and ecosystems frequently exist only in specific regions or areas in New Zealand. For example, some threatened species are found only in Taranaki, such as one native land snail, that lives only on Mount Taranaki.

Biodiversity is also a local issue because it is the local community that supports individual or collective decisions to place pressure on biodiversity, or to make decisions that will safeguard or restore the local biodiversity.

1.3 Process of developing and reviewing the Strategy

This Strategy is primarily an internal document to guide Council's activities. It is a non-statutory document, i.e. not a formal statutory plan or policy under the RMA. The Strategy has been developed in a way, and with a format, suited to its purpose as a strategic document to guide Council programmes and actions on biodiversity. It is intended as a readily reviewable, adaptable and dynamic document.

[3] *A 1997 study by Massey University economists suggested that the total annual value provided by New Zealand's native biodiversity to the country's economy could be more than twice the value of our gross domestic product. They estimated the annual value of native biodiversity on land in 1994 at $46 billion, and valued marine ecosystem services at $184 billion – a total of $230 billion a year. By comparison, New Zealand's gross domestic product that year was $84 billion.*

To develop the Strategy, actions in the NZBS were reviewed (Appendices II, IV, V and VI), biodiversity action plans from other councils were examined for ideas (see reference section) and information was gathered by meeting with representatives from each district council, from Department of Conservation ('DOC'), from QEII Trust and from some of the community groups involved in biodiversity. Discussions were held internally (with land management officers, pest officers etc). Submissions made on the '*Indigenous biodiversity for the Taranaki region, a RPS working paper*' and the '*Proposed Regional Policy Statement for Taranaki*' were also considered.

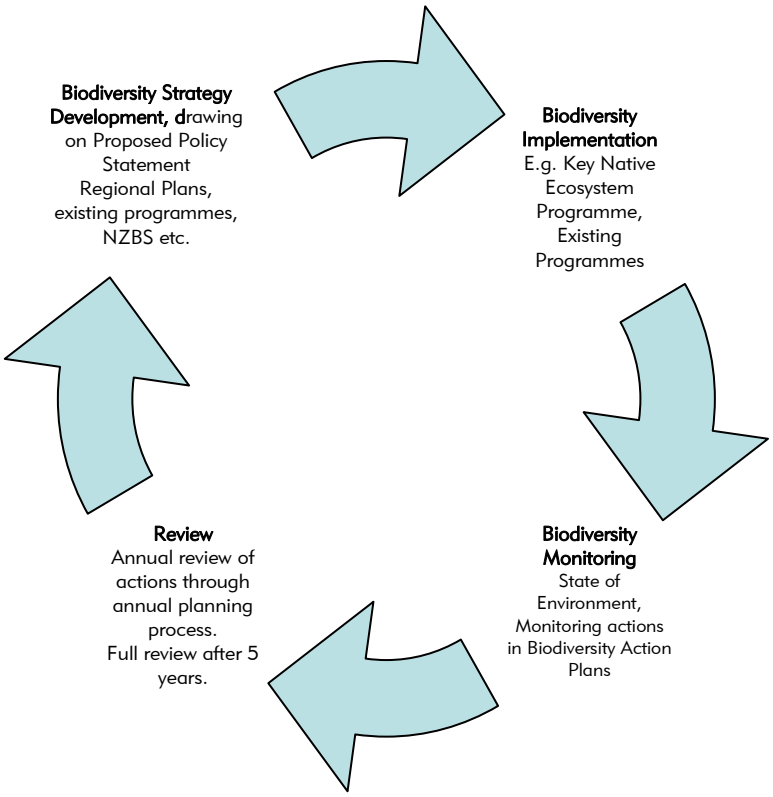

Figure 1 *The planning, implementing and reviewing cycle of biodiversity planning*

The draft Strategy was circulated to stakeholders for comment. There was a positive response from the agencies, trusts and community groups involved in biodiversity work across Taranaki to the approach proposed by the Council. The possibility that the Council would take more of a facilitation/coordination role in biodiversity matters in Taranaki was warmly welcomed. The importance of working together on biodiversity matters, especially data gathering and management, was highlighted by a number of groups.

Given the dynamic nature of biodiversity management, actions in the Strategy will be informally reviewed annually through the annual planning process (Figure 1). However, it is proposed that a full review of the Strategy should take place after 5 years, i.e. in 2013. Progress with implementing this Strategy will be taken into account when the Council next reviews the animal and plan Pest Management Strategies, and may consider greater alignment of these strategies at that stage.

It is also recommended that the Council's achievements against the actions in the NZBS be assessed in early 2010 in anticipation of a 10 year review of the NZBS.

1.4 Resourcing and reporting on the Strategy

The Council proposes that the Biodiversity Strategy can be implemented using existing resources (staff time and operational budgets). This is through incorporating a biodiversity element into existing programmes, or through shifting resources from programmes that are coming to a completion (for example the Council's knockdown possum operations in the self help possum programme are now large completed and the programme now in a maintenance phase.

The Strategy does include some actions that are not currently undertaken by Council. These have been identified by shading in the tables in Section 6. These too will most likely be resourced within the existing budget through shifting resources around from completed projects. Future decisions on the overall level of resourcing will be made by the Council during the preparation of its annual plan and Long Term Community Council Plan.

Progress on implementing the Strategy will be monitored and reported on in a number of ways:

- A 'Biodiversity Significant Activity Report' will be prepared annually and circulated to interested stakeholders. The Council currently prepares annual significant activity reports on all areas of its business. The Biodiversity report will gather together and report on progress with biodiversity functions across the whole of Council's operations;
- The Council's annual report will contain a summary of information contained in the significant activity report;
- A number of individual programmes, particularly resource investigations or high profile Key Native Ecosystem projects, are likely to be reported on individually in more specific detail; and
- The Council's 5 yearly State of the Environment report will contain a biodiversity chapter, which will report on the state and pressures on biodiversity across the region.

The above reporting opportunities will be used by the Council to report on progress with implementing national policies such as the New Zealand Biodiversity Strategy and the National Priorities for Protecting Rare and Threatened Native Biodiversity on Private Land.

1.5 Structure of the Strategy

The Strategy has been prepared in six sections as follows:

Section One: The **introduction** provides an outline of the Strategy's purpose, background and process.

Section Two: The second section provides an **overview** of biodiversity management nationally including a summary of national policies.

Section Three: This section draws on existing technical information to describe the **state** of Taranaki's biodiversity across land, freshwater and coastal environments in Taranaki, and to identify information gaps.

Section Four: Biodiversity **management** in Taranaki is undertaken by a wide range of agencies, communities, trust and individuals. This section summarises the key objectives for each of these groups and concludes with a table of operational Taranaki biodiversity programmes.

Section Five: Section five opens with a discussion on the range of **issues** facing the Council in implementing biodiversity work, and then, using a framework for developing effective strategy, identifies the areas where the Council is best placed to strategically place its biodiversity focus.

Section Six: This section sets out the Council's Biodiversity **Action Plan** and includes a suite of proposed actions for addressing biodiversity issues on Key Native Ecosystems, through existing programmes, by working with others and by developing systems for information gathering and management. The section of Council responsible for implementing each action is identified.

Bibliography: This includes a basic bibliography of reports referred to in the development of this Strategy.

Appendices: The appendix section includes detail of policies and methods from both the Proposed Regional Policy Statement and national policies such as the New Zealand Biodiversity Strategy.

The kereru or wood pigeon, once common place, is now threatened.

2. Biodiversity management at the national level

2.1 Introduction

New Zealand's native biodiversity is unique, the product of millions of years of isolation as small islands in a vast ocean. The high percentage of endemic species, make New Zealand's native biodiversity both special and highly vulnerable[4].

After splitting from other continents 80 million years ago, evolution on land took an eccentric course, leading to plants, animals and ecosystems so distinctive that New Zealand has been described as the closest scientists will come to studying life on another planet. From then, until the arrival of humans, it had the longest period of isolation of any non-polar landmass on earth.

New Zealand's original biodiversity was radically changed by the arrival of humans who brought with them mammals such as rats and then later, possums, goats, deer, cats and mustelids, and exotic plants. Natural ecosytems were altered with the use of fire, land drainage and land development. New Zealand's indigenous biodiversity must now co-exist with the productive landscape.

2.1.1 Background to biodiversity management at the national level

The New Zealand government pledged to maintain and preserve New Zealand's natural heritage through signing up to the United Nations Convention on Biodiversity in 1992 at the Rio Earth Conference.

The 1997 New Zealand State of the Environment Report then identified the loss of New Zealand's indigenous biological diversity as the country's greatest environmental problem. This, combined with the government's commitment at Rio led to the development and publication of the New Zealand Biodiversity Strategy ('NZBS') in March 2000.

The NZBS established national goals to 'turn the tide' on the decline of New Zealand's biodiversity, with a comprehensive set of actions to be undertaken by a range of government agencies, both central and local, and NGOs. The NZBS established that 'biodiversity is everyone's business' and the key players identified for each of the actions include government departments, local authorities, iwi and communities.

Other work undertaken at the time included a Ministerial Advisory Committee established to develop an agreed set of proposals that would lead to effective and sustainable management of biodiversity outside the conservation estate[5],[6].

To facilitate the implementation of the NZ Biodiversity Strategy the government established national biodiversity funds - the biodiversity condition fund and the biodiversity advice fund, and enhanced funding for QEII, Nga Whenua Rahui and the Nature Heritage Fund. TFBIS (Terrestrial and Freshwater Biodiversity Information System) is a contestable biodiversity information fund that is in the process of being reviewed to widen its scope to end users.

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[4] *www.biodiversity.govt.nz*
[5] *Bio-What ?Preliminary Report of the Ministerial Advisory Committee.*
[6] *Biodiversity and Private Land: Final Report of the Ministerial Advisory Committee August 2000*

Another government led initiative was the establishment of the Action-Bio-community website[7], to function as a central website for sharing best practice and biodiversity information.

An amendment to the Resource Management Act (2005) increased local government's functions in relation to biodiversity. This amendment clarified that the role of local authorities is to 'establish, implement and review objectives, policies and methods for maintaining indigenous biological diversity' (Section 30 (1)(ga).

Consideration was given to developing a national policy statement for biodiversity on private land. However, instead, the Government has now provided non-statutory guidance in the form of national priorities. This recognises and empowers local authorities to take the approach to biodiversity best suited to local conditions.

2.2 Biodiversity on land

The best guess available is that New Zealand has 70,000 native land-based species. Only about 30,000 have been described so far[8].

New Zealand's indigenous biodiversity is dominated by insects, fungi and other invertebrates, groups that are estimated to have well in excess of 20 000 species each. Plants and animals contribute about 3700 species to the land based biodiversity, and of that there are only 2 native mammals (bats).

In the past several hundred years New Zealand has lost many of its large native land animals. Nearly 1000 animals, plants and fungi are considered threatened. New Zealand has a greater percentage of threatened endemic birds than almost any other country – 37 out of 50 species of land and freshwater species are now threatened.

2.2.1 Biodiversity on land – national policies

The **New Zealand Biodiversity Strategy** established objectives and actions for achieving protection of biodiversity on land (Appendix II). The five objectives aim to protect indigenous habitats and ecosystems, promote sympathetic management of biodiversity within a productive landscape, manage pests that threatened indigenous biodiversity, restore degraded areas and enhance threatened species.

The NZBS identified that the key players for implementing actions related to achieving protection of biodiversity on land are generally, Department of Conservation, Ministry for the Environment, Local Government, QEII Trust, landowners, iwi/hapu, research providers and community groups.

The statement of **national priorities to guide future work in protecting native biodiversity on private land** (Appendix III)[9] has recently been released. These priorities have been established to assist local councils develop a programme of biodiversity protection that will also achieve biodiversity protection at a national level.

The four national priorities (in no priority order and all of equal importance) seek to protect:

1. Indigenous vegetation associated with land environments (defined by Land Environments of New Zealand (LENZ) at level IV) that have 20% or less remaining in indigenous cover;
2. Indigenous vegetation associated with sand dunes and wetlands; ecosystem types that have become uncommon due to human activity;
3. Indigenous vegetation associated with 'originally rare' terrestrial ecosystem types not already covered by priorities 1 or 2; and

[7] *www.biocommunity-org.nz*

[8] ***www.biodiversity.govt.nz***

[9] *Ministry for the Environment and Department of Conservation (April 2007)* Protecting our Places: Information about the Statement of National Priorities for Protecting Rare and Threatened Biodiversity on Private Land.

4. Habitats of acutely and chronically threatened indigenous species.

A suite of **threatened species recovery plans** have been developed by the Department of Conservation (DOC)[10]. These plans set out goals and objectives for the management of specific threatened species and serve to guide DOC in its allocation of resources and to promote discussion amongst practitioners. Implementation of these plans is guided by recovery groups. The threat status of threatened species is regularly reviewed every three years and a database is maintained by the Department of Conservation on the risk of extinction for thousands of species[11].

2.3 Freshwater Biodiversity

Freshwater ecosystems include streams, lakes, wetlands, geothermal systems and underground aquifers, and all the freshwater species that live there[12].

New Zealand has more than 70 major river systems and numerous streams. A few rivers include significant channels within cave systems. Only two complete river systems still lie within unmodified catchments and remain free of introduced species.

New Zealand has more than 770 lakes and innumerable ponds. Many of the shallow lakes (around 700) are degraded by nutrient enrichment and oxygen loss – a few are now incapable of sustaining fish life. Invasive exotic plant species are extensive in most lakes.

Wetlands represent some of the most diverse ecosystems, but few remain – swamps, bogs and marshes now cover only 1000 square kilometres – less than 10 per cent of the original wetland area in New Zealand. While many of the remaining wetlands are degraded to varying degrees, some are large and have internationally significant biodiversity values, as do some remaining geothermal areas.

Koaro, one of the whitebait species, has excellent climbing abilities.

Although they live in freshwater, many native fish species have a marine stage in their life-cycle. Twenty nine species of native freshwater fish have been identified, and more continue to be identified. One species, the grayling, became extinct early in the 1900s. Ten freshwater fish species are considered threatened. Nearly 90 per cent of the freshwater fish species are endemic (i.e. they are not found anywhere else in the world).

2.3.1 Biodiversity in freshwater – national policies

The **New Zealand Biodiversity Strategy** established objectives and actions for achieving protection of biodiversity in freshwater (Appendix IV). The objectives aim to protect and sustainably manage freshwater systems, manage freshwater pest plants and animals, restore degraded freshwater habitats, enhance populations of threatened species and ensure that the harvest of freshwater species does not adversely affect indigenous freshwater biodiversity.

[10] *www.doc.govt.nz*
[11] *Hitchmough et al, 2007*
[12] ***www.biodiversity.govt.nz***

The NZBS identified that the key players in achieving biodiversity protection in freshwater will be Department of Conservation, Ministry for the Environment, iwi/hapu, regional councils, Fish and Game NZ and other NGOs, research providers and the Ministry of Fisheries.

The **'Sustainable Water Programme of Action'** was established in 2003 to ensure that the country's freshwater resources are managed to best support New Zealand's future sustainable development[13]. It is part of the Government's wider Sustainable Development Programme of Action. A biodiversity component of the Sustainable Water Programme of Action does not have a high profile, and the review of the NZBS recommended that more explicit initiatives be included to enhance indigenous freshwater biodiversity[14].

Waterways of national importance (WONI) for biodiversity have been identified - (rivers - Chadderton et al, 2004 and wetlands – report in prep). This work may feed into national policy development through the Water Programme of Action, such as developing policy for managing water allocation in those waterways.

A number of **threatened species recovery plans** have been prepared for native fish (e.g. large galaxiids and mudfish). These recovery plans are overseen by recovery groups who meet regularly to review progress with the objectives.

2.4 Marine Biodiversity

Coastal and marine ecosystems include estuaries, inshore coastal areas and offshore areas, and all the resident and migratory marine species that live in them[15].

About 8000 marine species have been formally identified in New Zealand's waters. These include plants, bottom-dwelling (benthic) organisms, fish, marine mammals, birds and other organisms.

In all, marine species make up almost one-third of New Zealand's total number of described native species. This figure is changing rapidly as on average seven new species are identified each fortnight. Many more species wait to be discovered – marine scientists estimate that as much as 80 per cent of New Zealand's native biodiversity is found in the sea.

Although many marine fish found in New Zealand waters also occur in the waters of other countries, a large number of our benthic species are endemic. Of the marine fish in NZ's Exclusive Economic Zone (EEZ), nearly 100 are rock pool species. Sixty per cent of rock pool species are endemic, and 11 of these species are considered threatened.

2.4.1 Marine and coastal biodiversity – national policies

The **New Zealand Biodiversity Strategy** established objectives and actions for achieving protection of biodiversity in coastal and marine ecosystems (Appendix V). The objectives aim to improve our knowledge of coastal and marine ecosystems, better coordinate marine management and protect coastal biodiversity from the adverse effects of human activities on land, in the coastal zone and from the adverse effects of fishing. The objectives also aim to better manage marine biosecurity risks, protect a full range of natural marine habitats and ecosystems and protect and enhance populations of threatened species.

The NZBS identified that the key players in terms of implanting protection of biodiversity in the coast and in the marine environment are Ministry for the Environment, Ministry of Fisheries, Department of Conservation, regional councils, iwi/hapu, community groups, resource users such as the fishing industry and research providers.

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[13] *www.mfe.govt.nz*
[14] *Green and Clarkson, 2005*
[15] ***www.biodiversity.govt.nz***

The **Marine Protected Areas Policy and Implementation Plan** was released in 2005. The policy is a guide to the development of a comprehensive and representative network of marine protected areas (MPAs) using a number of marine management tools. More recently, a report on a classification and protection standard was published, implementing one of the actions in the MPA Implementation Plan.

Another national policy initiative has been the **Ocean's Policy**. The Oceans Policy development will focus on fixing the most pressing marine problems in the short term while taking a more coordinated and integrated approach to marine management over time. Priority has been given to first improving the regulatory regime for environmental impacts in the EEZ.

The effects fishing has on the wider environment have been considered in the development of a **Strategy for Managing the Environmental Effects of Fishing** (2005) ('SMEEF') prepared by the Ministry of Fisheries. The SMEEF describes how to set environmental limits around fishing management and how to manage fishing's "footprint" on other species, and on marine habitats and ecosystems.

There are no threatened species recovery plans for threatened marine species. However, the Ministry of Fisheries and Department of Conservation are in the process of developing a Hector's and Maui's Dolphin **Threat Management Plan**[16]. This plan will outline both fishing related and non-fishing methods to safeguard habitat of this threatened marine mammal.

Finally, the **New Zealand Coastal Policy Statement** is in the process of review. The draft Policy circulated for comments includes policies to protect indigenous biodiversity.

2.5 Other themes in the New Zealand Biodiversity Strategy

The New Zealand Biodiversity Strategy is structured around 10 themes. The first three have been discussed in detail above. The other themes in the NZBS of relevance to the Council's Strategy are: Biosecurity, Maori, Community Participation and Information, knowledge and capacity. Relevant objectives and actions in the NZBS, that are relevant to local government, are listed in Appendix VI.

2.5.1 Biosecurity and biodiversity

The introduction of new species to New Zealand has the potential for major risks to biodiversity. Biosecurity management involves taking measures to control the introduction and establishment of new organisms, border control, surveillance and emergency response for the exclusion and eradication of unwanted organisms and pests.

2.5.2 Maori and biodiversity

The New Zealand Biodiversity Strategy acknowledges the interests and roles of Maori in conserving, and using biodiversity sustainably. The separate theme in the NZBS recognises that the traditional relationship developed over centuries, by Maori with New Zealand's indigenous biodiversity remains an important part of the lives of many Maori.

[16] *http://www.fish.govt.nz/en-nz/Consultations/hector/default.htm*

2.5.3 Community participation and awareness

The NZBS recognises that people are the fundamental agents of change and that the decisions and actions made by local communities are crucial to the conservation and sustainable use of biodiversity. Community groups are increasingly leading management of local biodiversity issues. However, the wider public understanding and awareness of the importance of biodiversity is generally low and therefore there is a need to improve communication of biodiversity issues and to increase community participation in conserving biodiversity.

2.5.4 Information, knowledge and capacity

Finally, the NZBS recognises that adequate information, knowledge and capacity underpin the effective implementation of all the biodiversity management actions proposed. However, there are gaps in the scientific knowledge of New Zealand's biodiversity, and these constrain effective management. Gaps identified include knowledge of taxonomy, distribution and population viability of indigenous species, classifying and understanding the extent, condition and functioning of ecosystems and knowledge about the interaction between indigenous and introduced species, particularly pests.

3. Biodiversity in Taranaki

3.1 Introduction

This section provides an overview of known biodiversity knowledge in Taranaki (taken largely from TRC (2003 and 2004a). However, a more complete review of biodiversity across the region will be prepared for the next State of Environment report (to be published towards the end of 2008), which will include a biodiversity chapter incorporating information from the Council, district councils, Department of Conservation, Ministry of Fisheries, Ministry of Agriculture and Forestry, QEII and community groups involved in biodiversity.

3.2 Biodiversity on land

3.2.1 Indigenous vegetation: Threatened land environments

Approximately 40% of the Taranaki region is in native forest and shrub land[17] - the majority of this is in the eastern hill country which contains a broad, near continuous tract of native forest on rugged hill country from north Taranaki to inland Stratford to the Whanganui National Park.

The development of the Taranaki ring plain and coastal areas for farming has led to the reduction of indigenous habitats and the disproportionate loss of some types of terrestrial habitats such as wetlands, lowland forests and coastal environments. It is on the Taranaki ring plain and the South Taranaki coastal terraces that the remaining indigenous vegetation and wetlands are but small remnants of what they would have been historically. Consequently, the ring plain, and coastal areas towards South Taranaki now contain less than 10% of the original indigenous vegetation. Remnant areas of indigenous vegetation are therefore highly important for biodiversity.

Many remnant bush or wetland areas are isolated and surrounded by highly modified environments such as farmland. Furthermore, many are of a size or shape that makes their long term ecological viability uncertain unless ecological linkages with other areas can be maintained or enhanced.

The Land Environments of New Zealand (a classification system used to map areas that are similar to each other) has been used to compare land environment types according to the amount of indigenous vegetation remaining or protected. This has resulted in the identification of 'threatened land environment types' (Figure 2).

'Acutely threatened' land environments are those with less than 10% indigenous vegetation remaining. 'Chronically threatened' land environments are those with less than 20% indigenous vegetation remaining.

11,341ha of the Taranaki region falls into these categories – predominantly the ring plain and coastal terraces (Figure 2). 'At risk' land environments are those with 20-30% indigenous vegetation remaining.

[17] Taranaki Regional Council: Taranaki – Our Place, Our Future' . 2003

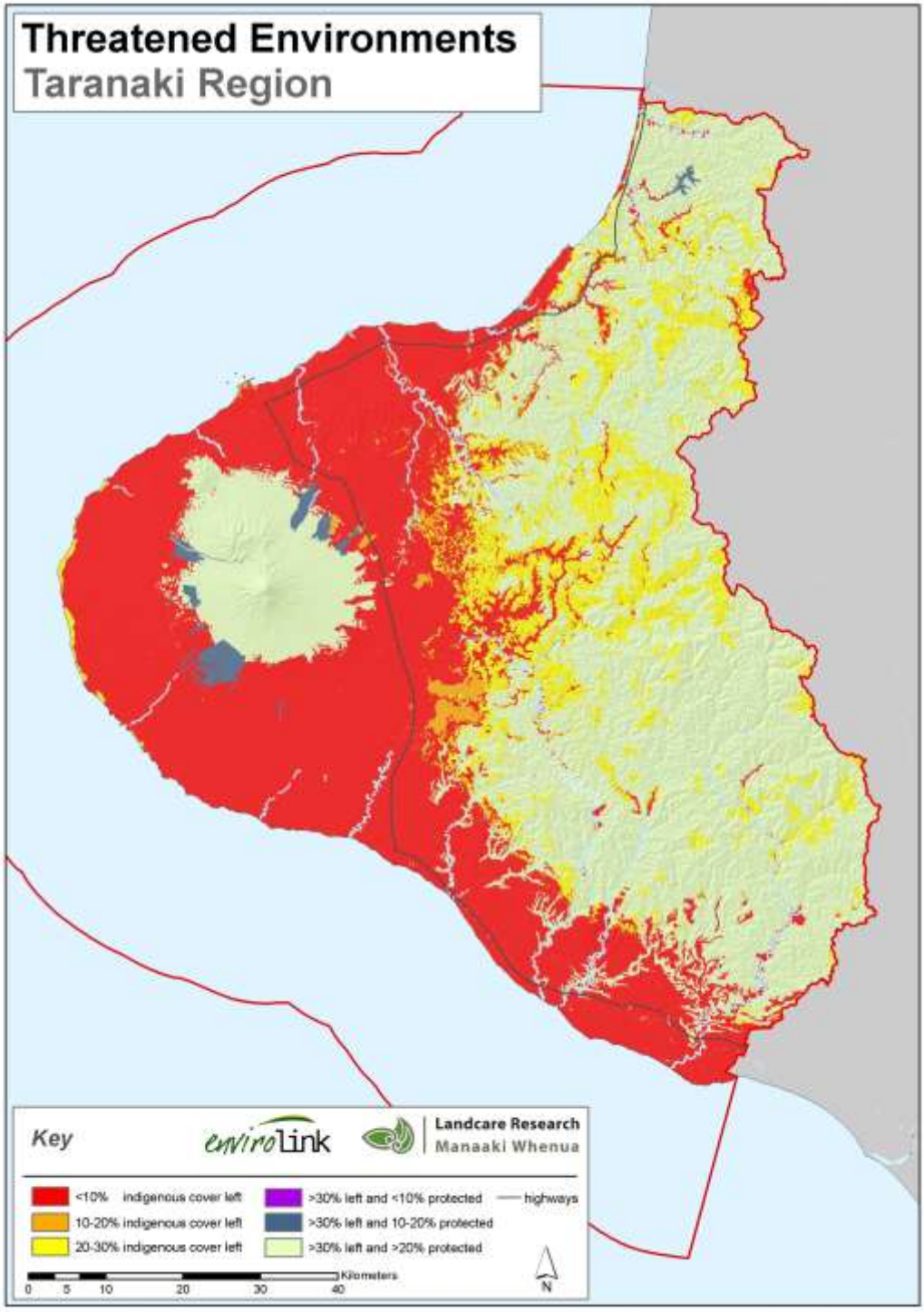

Figure 2 *Threatened land environments in Taranaki*[18]

For the categories where there is more than 30% indigenous vegetation remaining, the amount that is formally protected, i.e. in the conservation estate or through QEII or Nga Whenua Rahui covenants, is taken into consideration.

'Underprotected' are those with more than 30% indigenous vegetation remaining and 10-20% protected and those land environments classified as not being under threat have more than 30% indigenous vegetation remaining with over 20% of it legally protected.

[18] *http://www.biocommunity.org.nz*

3.2.2 Key Native Ecosystems

Through a multiagency working party, the Council facilitated the compilation of an inventory of sites with indigenous biodiversity values of regional significance in the Taranaki region[19] . This inventory brought together information about regionally significant sites. Sites in the inventory, which are referred to as **Key Native Ecosystems**, are regionally significant because:

- rare and distinctive indigenous flora and fauna species are present; or
- they are representative of an indigenous vegetation type that is now much reduced (eg, less than 10 or 20%) from its former extent in the ecological district; or
- they enhance connectivity between fragmented indigenous habitats, enhance the values or provide buffering for other sites of value, or provide seasonal or core habitat for specific indigenous species; and
- they are sustainable i.e., they are of a size or shape and have the ability, through appropriate management, to sustain those other values referenced above.

Figure 3 illustrates which threatened land environment the Key Native Ecosystems and regionally significant wetlands fall. The Key Native Ecosystems inventory includes both private land and land managed by the Department of Conservation (Figure 3).

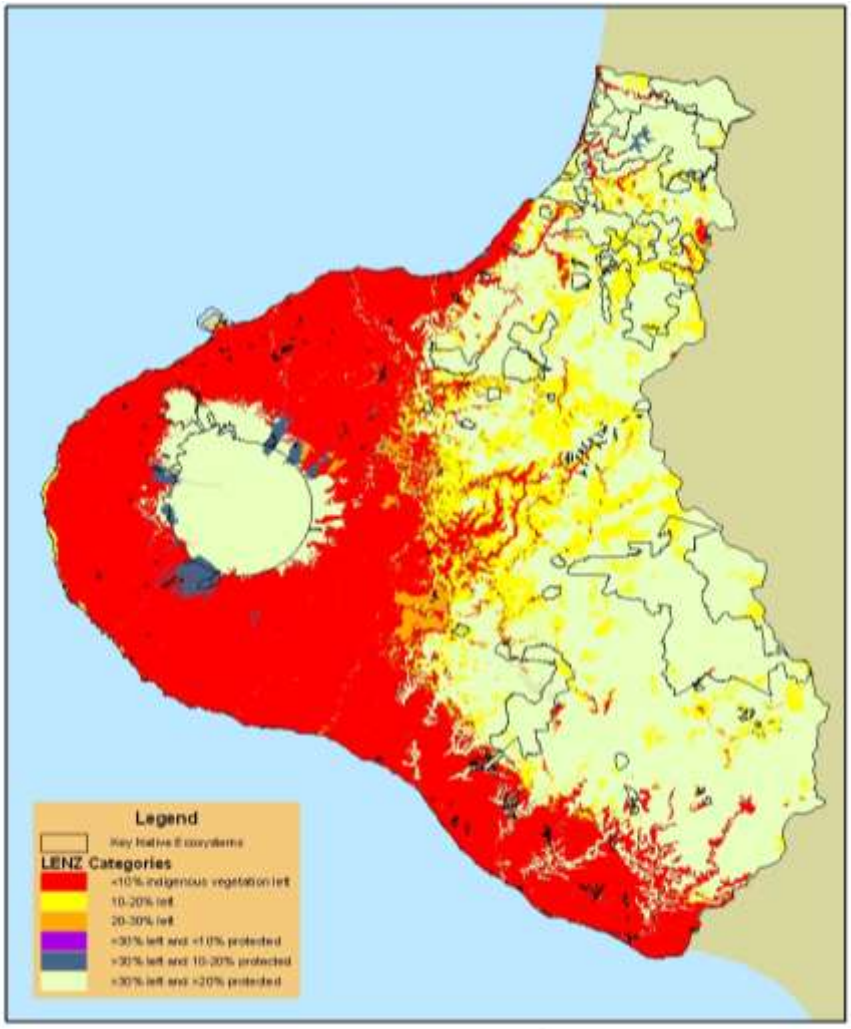

***Figure 3**: Threatened land environments of Taranaki and Key Native Ecosystems (which includes the Sugar Loaf Islands Marine Protected Area).*

In the preparation of the inventory it was recognised that investigative programmes will need to be developed and implemented to address information gaps.

[19] *Key Native Ecosystems. Inventory of sites with indigenous biodiversity values of regional significance. TRC (May 2006).*

3.2.3 Land managed by Department of Conservation

The Department of Conservation administers public conservation areas, which are set aside for conservation purposes. These areas cover 146,973ha or 21% of the Taranaki region.

Figure 4 shows the extent of indigenous vegetation in Taranaki that is managed by the Department of Conservation.

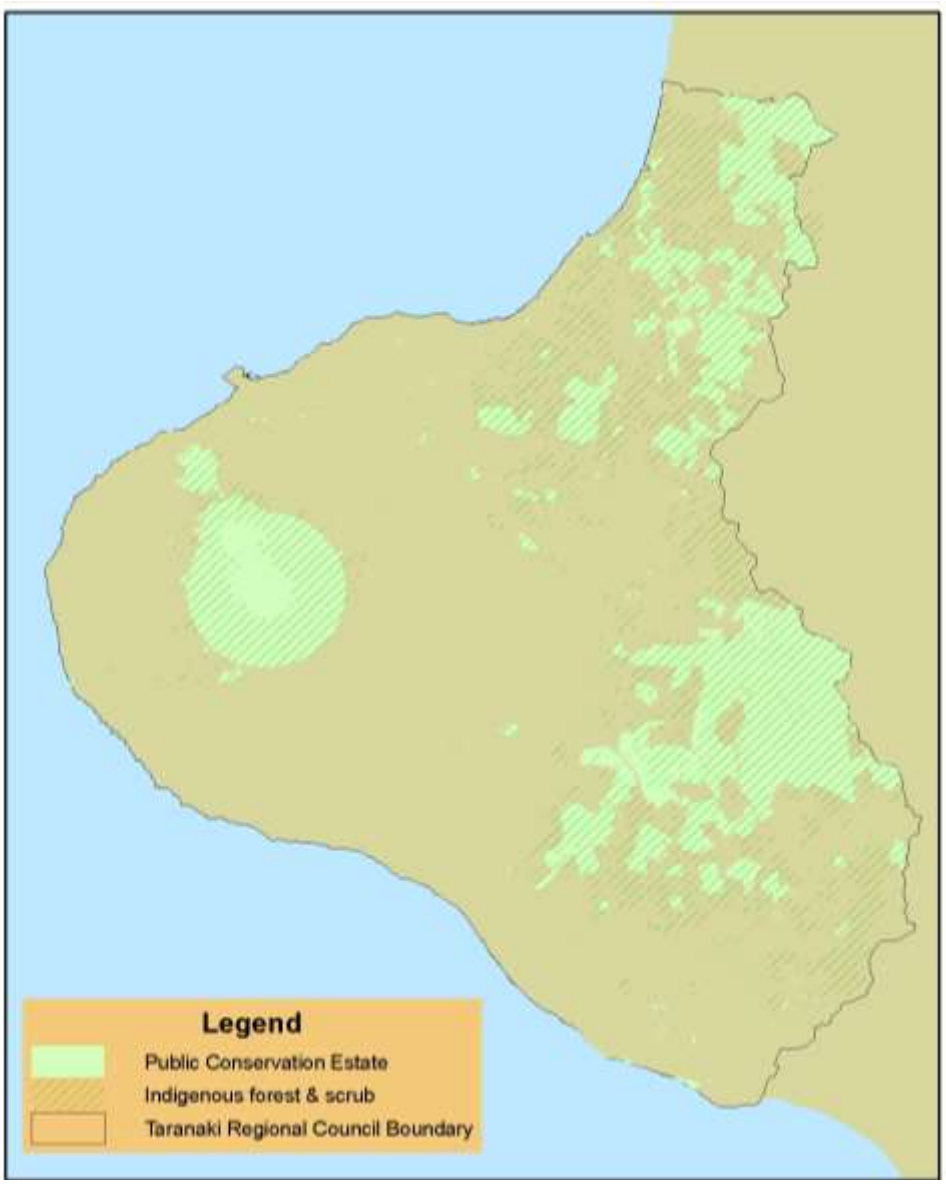

Figure 4 *Land administered by the Department of Conservation.*

3.2.4. Threatened species

Taranaki native forests and scrubland are home to one of the country's three major populations of North Island brown kiwi. Taranaki is home to a number of threatened species (see Appendix VII) such as kokako, brown kiwi, spotless crake, whio, kaka, Northern NZ dotterel, kakariki (present by possibly only now in low numbers) and falcon. The list includes threatened gecko and skink.

The threatened species list also includes some well known species that many people would be surprised to find are now considered threatened, such as the kereru or wood pigeon.

There are a number of species that are regularly monitored by the Department of Conservation such as the kiwi, blue duck, Powelliphanta snail, Notoreas moth, threatened coastal plants etc (see table in Section 4.9).

Taranaki kokako have been taken into breeding programmes in captivity and established on the predator free Tiritiri Matangi Island in Auckland.

The Taranaki region includes five ecological districts (or parts thereof) based upon areas that have landscape features in common (Figure 5) (McEwen 1987).

The Foxton Ecological District includes Taranaki's coastal sand country. This district has, over time, been extensively modified for agricultural and forestry purposes. Dry coastal dunes remain as the largest near-natural areas in the district, although they are all modified to a greater or lesser degree by human impacts – vehicles, housing, weeds, grazing and other influences. These dunes are host to six threatened and uncommon indigenous plant species – of which the coastal dune-slack plant *Sebaea ovata* is most threatened[20]. The destruction of dunes and other habitat loss in the Waitotara area has also led to the serious decline of the katipo spider.

The coastal terraces of south Taranaki are included in the Manawatu Plains Ecological District. Forests originally dominated this area. However, the total area of native vegetation remaining in this district is probably the smallest of any district in the region with small remnants existing only on steeper areas. There is a small, localised population of the gold-striped gecko and the endangered swamp hood orchid *Pterostylis micomega* present in this area[21].

Figure 5 *Ecological regions in Taranaki*

The Matemateonga Ecological District encompasses the majority of the inland hill country of the Taranaki region. Large tracts of native forest remain. Furthermore extensive areas of previously cleared land in this district has regenerated and reverted back to a range of vegetation types from fernlands, through to scrub and secondary forest. Populations of the threatened short tailed bat, North Island brown kiwi and striped skink are present in the area. The threatened dactylanthus or Pua o te reinga (*Dactylanthus taylorii)* is also present [22].

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[20] *Department of Conservation: 'Foxton Ecological District – Survey Report for the Protected Natural Areas Programme', 1992.*

[21] *Department of Conservation: Manawatu Plains Ecological District – Survey Report for the Protected Natural Areas Programme, 1995.*

[22] *Department of Conservation: Matemateaonga Ecological District – Survey Report for the Protected Natural*

The Egmont Ecological District contains the widest range of habitats in Taranaki. Habitats range from alpine to coastal and marine.

Powelliphanta 'Egmont' – native land snail found only on the slopes of Mount Taranaki/Egmont

The Egmont National Park (ENP) is the most significant and diverse natural area in the Egmont Ecological District. The large forest area of the ENP provides the only habitat for many of the 76 bird species (53 native and 23 introduced) that regularly occur in the district. However, because of Mount Taranaki/Egmont's relatively young age and geographical isolation, the variety of native plants in the Park is quite small compared with similar type habitats in other parts of New Zealand [23].
Outside the ENP, habitats have been significantly modified as a result of land development for pastoral farming. On the ring plain, lowland forests are much reduced in number and area and survive only in fragmented remnant parts. The coastal herbfields on cliff ledges and cliff tops of the Egmont Ecological District continue to be a significant habitat for native plants and animals. There are only a few pairs of the northern population of New Zealand dotterel nesting on the south Taranaki coast.

The North Taranaki Ecological District includes the north Taranaki coastal terrace and much of Taranaki's frontal hill country and steeper inland hill country. This area was mostly forested in the past, with only a few areas of scrub and herbaceous plants on the coast and river cliffs. This district is important as many plants reach their southern limits here, including pohutukawa, neinei, karo and forget-me-not. The district's coastal forest and shrub land habitats also have the highest concentration of threatened and uncommon plants in Taranaki.

3.2.5 Threats to indigenous biodiversity on land

Indigenous vegetation can be lost through direct removal of indigenous vegetation. However, the indigenous biodiversity values of remaining indigenous vegetation can be threatened through habitat modification such as from grazing stock having access or feral animals such as goats, deer and pigs. The most significant loss in indigenous habitat in Taranaki occurs on the ring plain or coastal terraces.

Collectively though, invasive pests (both plants and animals) pose the single greatest threat to Taranaki's remaining biodiversity. The principal threats from pests are predation on and competition with indigenous plants and animals.

3.2.6 Bryophytes, mosses, liverworts and fungi

Biodiversity is more than the obvious plants, birds and animals. There are bryophytes (mosses, liverworts and hornworts) and fungi that are unique to Taranaki. Bryophytes are characterised in the Taranaki area by the *Sphagnum* moss bogs together with the moss *Dawsoniana superba* (the worlds largest moss). The Liverwort *Monocleales* is also a NZ endemic and a feature of Taranaki rainforest. The native orchids of NZ are abundant in Taranaki. Endophytes (fungi and other microorganisms that live on or in plants) are critical for the ongoing health of plants. They provide a natural protection to their host, plant or animal (e.g. some endophytes prevent plants from being eaten) and can assist with the breakdown of plant nutrients to make them more

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Areas Programme, 1996.

[23] *Department of Lands and Survey: Egmont Ecological District – Survey Report for the New Zealand Protected Natural Areas Programme, 1986.*

absorbable. Individual trees, for example in the Egmont National Park, can be connected through their fungi associations even though they might be many kilometres apart.

3.3 Freshwater Biodiversity

3.3.1 Rivers, streams and lakes

There are 286 primary river catchments and over 530 named rivers in Taranaki. Most catchments are relatively small. There are also 10 lakes in Taranaki with an area greater than eight hectares.

Taranaki's rivers and streams provide freshwater habitat for a large number of native fish species. Of the 27 native freshwater fish species found in New Zealand, at least 18 are in Taranaki – other fish species may be present, but as yet are undiscovered in the region. [24]

In Taranaki, the most well known native fish are two species of eels, five species of bullies, and five species of the whitebait (galaxiid) family. Other species include torrentfish, lamprey, common smelt, and mullet.

A special feature of Taranaki's native freshwater fish is that 15 of the 18 known species are diadromous – in other words, they have a marine or estuarine stage in their lifecycle and migrate to and from the sea.

Small populations of the threatened brown mudfish occur in remnant wetlands on private land

Several streams and rivers are known to be inanga spawning sites and are home to the threatened brown mudfish, short-jawed and giant kokopu. While the greatest variety of native fish is generally found in the lowest reaches of our rivers and streams, the entire length of the watercourses provide important habitats. For example, fish species such as inanga prefer lowland streams that provide gentle flowing and well-vegetated habitats, koaro prefer the cascading rocky habitats found up in the forest of ENP, while other fish species such as shortfinned eels prefer slow flowing streams, ponds and lakes.

3.3.2 Wetlands

Today, wetlands in Taranaki are relatively scarce and under represented. It is estimated that of Taranaki's original wetland area, only 1.5% now remain with only about 0.2% outside of the ENP.

In a survey carried out in 1996, the Taranaki Regional Council identified some 1490 naturally and artificially formed wetlands of varying size, type and condition within the region. Of these[25] four broad types were identified. These being:

Most Taranaki wetlands are lacustrine

[24] *Taranaki Regional Council: 'Rights of Passage – Removing the Barriers for our Freshwater Fish'. 2000.*
[25] *Taranaki Regional Council: 'Wetlands in the Taranaki Region.' 1996.*

- lake type or lacustrine wetlands – these represented 56% of Taranaki's wetlands;
- palustrine wetlands or swamps and bogs with vegetation cover ranging from sedges to forest – these represented 32% of Taranaki's wetlands[26];
- estuarine types of wetlands that may be partially open to the sea – these represented 7% of Taranaki's wetlands; and
- riverine wetlands on river margins and floodplains – these represented 5% of Taranaki's wetlands.

Most remaining wetlands, particularly those outside public conservation areas, are small with seventy-nine percent of the wetlands identified in the study were less than six hectares. Furthermore, most remaining wetlands have been modified – suffering some form of loss of value and condition from land use and development, but given their scarcity, are highly important for biodiversity.

Land drainage has seen a decline in wildlife species using wetlands, but small numbers of gold-striped geckos, fernbirds, spotless crake and bittern can still be found. Wetlands are also important for native fish such as brown mudfish.

In preparation for the next State of Environment report, the Council will be updating the 1996 study into the extent of wetlands in Taranaki using aerial photos flown in the summer of 2006. The Council will also be undertaking a resource investigation into the effects of land drainage through the piping of small streams and any cumulative environmental effect of this land drainage.

3.3.3 Threats to freshwater biodiversity

Threats to freshwater biodiversity arise from habitat modification such as the drainage of wetlands or wet areas, or the channelising or piping of streams. Structures in waterways impact on the ability of native fish to migrate through the stream, and so reduce the native fish diversity in the upper catchment. Introduced pests such as aquatic plants, fish or algae are also a significant threat to Taranaki's freshwater biodiversity.

3.4 Coastal and marine biodiversity

The Taranaki region has a 295-kilometre coastline, comprising of steep cliffs, rocky shores and sandy beaches, subtidal reefs, rivermouths and estuaries. These provide a wide range of ecological niches and habitats for native fish, plant and animal species present in the Taranaki marine environment.[27]

A recent classification system has divided the New Zealand coast into a number of large biogeographic regions (see Appendix VIII). Thus the Taranaki coastline falls into two of these regions: the Western North Island and the North Cook Strait Coastal biogeographic regions (Table 1).

Grey-faced petrel – these and other native sea birds thrive on the Sugar Loaf Islands and other parts of the Taranaki coast

[26] *Note these were under reported in the study, owing to the scale of the aerials and the difficulty of recognising certain vegetation (e.g. raupo).*

[27] *In all, marine species make up about one-third of New Zealand's indigenous biodiversity – www.biodiversity.govt.nz.*

Table 1 Biogeographic regions of New Zealand that include the Taranaki region[28]

Biogeographic region	Boundary	Description
Western North Island Coastal Biogeographic region	Ahipara to Cape Egmont	This region is influenced by the northward flowing Westland Current and the southward flowing West Auckland Current, both of subtropical origin. Coastline is characterised by open, exposed sandy beaches interspersed by stretches of rocky platforms, bluffs and outcrops. Includes Hokianga, Whangape and Herekino, Kaipara, Manukau, Raglan, Aotea and Kawhia Harbours. Gravel sands and ironsands occur offshore. The fauna has affinities with both warm-temperate and cool temperate/ sub-antarctic faunas. Areas of special interest include: offshore islands – for example, Sugar Loaf Islands and Gannet Island.
North Cook Strait Coastal Biogeographic region	Cape Egmont on the west coast to Cape Turnagain on the east coast	This region lies in a transition area between northern and southern flora and faunas and has a high diversity of species. The tidal regimes each side of the strait are different and the water temperature is also very different. The northern side is greatly influenced by the easterly-flowing warm, saline D'Urville Current and the cooler Southland Current that travels northward through Cook Strait. This results in the presence of some sub tropical species on the west coast, compared to the east coast. Strong currents can exceed 10 knots along the eastern side of this section of the North Island. Palliser Bay is in the mixing zone of the warm D'Urville and East Cape currents and the cooler Southland Current. The Durville Current also flows up the west coast and is deflected offshore by the Mt Taranaki ring plain, resulting in very different biota further north of Cape Egmont. Includes Wellington Harbour, Plimmerton, Pauatahanui and Porirua inlets. Areas of special interest include: high tidal flows areas of Cook Strait.

3.4.3 Marine protected areas

There are three marine protected areas in Taranaki: the Parininihi Marine Reserve off Whitecliffs in North Taranaki, the Sugar Loaf Islands (Nga Motu) Marine Protected Area and the Tapuae Marine Reserve.

Parininihi Marine Reserve is home to a rich and diverse array of encrusting invertebrates. Pariokariwa Reef has been rated as one of the top sponge spots in the world. Many of these fantastic "undersea gardens" remain unexplored and may yield further scientific discoveries.

The islands are also the northernmost breeding colony of the New Zealand fur seal

The Sugar Loaf Islands are the region's only offshore islands. The outer islands of Motumahanga (Saddleback) and Moturoa support 86 native plant species, including the threatened Cook's scurvy grass. The Sugar Loaf islands provide a predator-free environment for 19 species of sea birds, with approximately 17,000 sea birds breeding on these islands annually. The islands support significant breeding populations of 'flesh-footed' shearwater (the larges colony on the west coast of the North Island), northern diving petrel, sooty shearwater (only known breeding colony between Kapiti Island and the Three Kings Islands).

The Sugar Loaf Islands (Nga Motu) Marine Protected Area surround the islands and creates an area where fishing activities are limited to certain types of recreational fishing.

The recently gazetted Tapuae marine reserve provides total protection from fishing from a 'typical' section of the Taranaki coastal marine environment and from the rich and diverse marine environments around Seal Rocks. The Department of Conservation will undertake monitoring in order to compare biodiversity from areas that are protected from fishing with those areas that are fished.

[28] *Draft MPA Classification and Protection Standard.*

3.4.4 Cliffs and rocky shores

Cliffs and rocky shores dominate the Taranaki coastline although there are small areas of dune. Higher species diversity is found on rocky shores where smaller rocks are present. This type of environment provides suitable shelter and habitat when compared to sites with large boulders or sandy beaches. Native succulent, salt-tolerant herbs grow on sea cliffs, sometimes as dense mats or coastal herbfields. These areas are particularly vulnerable to development, farming activities and recreation as they are largely 'invisible' to the casual observer.

Notoreas 'Taranaki' resting on coastal cliff herbfield plants.

A few pairs of variable oyster catcher also nest on the north Taranaki coast and little blue penguins occur where habitat is suitable for nesting. Other uncommon animals such as fernbirds and the gold striped gecko may also be found in these areas along with a number of insects that are endemic or found in few other places.

The inshore marine environment provides a wide range of different habitats for a number of different aquatic species. This includes species such as starfish, sea anemones, crabs, crayfish, sea cucumbers, mussels, pipi, paua, sponges, whelks and a number of seaweed species.

3.4.5 Estuaries and river mouths

Estuaries and river mouths make up 16% of Taranaki's 295 kilometre coastline. These are shallow, sheltered areas of extremely productive 'nursery' habitats for a variety of marine life. The soft substratum – consisting of productive topsoil carried down by rivers mixed with detrital material (eg, leaves) – supports a range of burrowing animals such as worms, cockles and pipis. Most of these animals feed on detrital material, and bacterial and algal films on the mud surface. Estuarine areas are ideal refuges for juvenile fish of many species in search of fish and crustacean. They also provide essential nesting, breeding and feeding habitats for other native wildlife – particularly in relation to birds.

3.4.6 Intertidal reefs and offshore habitats

Intertidal reefs are relatively uncommon in Taranaki. Large, discrete reef systems are present around the Waitara River, New Plymouth, North Taranaki and around Cape Egmont. A smaller reef system lies south of the Waitotara River. Large subtidal reefs called the North and South Traps are located offshore from Patea. A number of smaller subtidal reefs also occur.

Blue cod, Sugar Loaf Islands (Nga Motu) Marine Protected Area

Taranaki's intertidal reef systems have generally lower diversity and abundance of species compared to similar type systems elsewhere in New Zealand. This is due to the high wave energies typical of the Taranaki coastline, which gives rise to abrasive and turbulent shoreline conditions, high water turbidity, suspended silt, and sand inundation. Notwithstanding that, associated with reef systems is a large diversity of marine life, including fish species and encrusting animals such as sponges and anemones.

Offshore habitats vary from sand and muddy bottoms to the volcanic platforms and rocky reefs. These also support a wide range of fish species including snapper, blue cod, gurnard, warehou, trevally, moki, tarakihi, kahawhai, and a number of bottom-dwelling shark species. During the

summer months, snapper and trevally use the inshore waters of the north Taranaki as a spawning ground. The north Taranaki coast is also the only Taranaki location of Maui's dolphin (formerly known as Hector's dolphin).

Over the summer months when the warmer currents move down from further north, a number of pelagic species visit the Taranaki coastline following the abundance of food. The most common species are sunfish, flying fish, marlin, albacore, skipjack and yellow-fin tuna, mako and blue sharks.

3.5 Biodiversity and Climate Change

Global climate change is predicted to result in an increase in average temperatures, fewer extreme cold temperatures, changes to average rainfall patters, reduced areas with snow cover and more frequent extreme rainfall events. Taranaki is expected to become marginally wetter overall with increased frequency of extreme weather events.

In terms of impacts on biodiversity, a temperature increase may push species south. The bush-clad eastern hillcountry allows easy migration of flora and fauna along 'corridors' north to south, while riparian planting will do likewise. Alpine species on Mt Taranaki will come under pressure, but given that there is no permanent snow, they may well have some degree of robustness already. Freshwater wetlands might well be enhanced. Warmer and wetter weather may mean an increase in plant pests, increased impacts of pest animals, or invasive marine species that prefer warmer sea temperatures, which may all have an impact on the indigenous biodiversity. Maintaining resilient indigenous ecosystems such as native forests and their rich organic soils or marine ecosystems will be an important means of the region coping with changes arising from climate change.

Opportunities for increased funding for biodiversity work may arise out of carbon emissions mitigation schemes. There may also be opportunities for the retirement of hill country indigenous vegetation in 'carbon farming' schemes, and this will have positive spin offs for biodiversity.

4. Biodiversity management in Taranaki

4.1 Introduction

Biodiversity work is undertaken at a national level by a number of government departments such as Department of Conservation, Ministry of Fisheries, Ministry of Agriculture and Forestry. Policy developed at a national level has implications for biodiversity management in Taranaki.

At the local level, biodiversity work is undertaken by the Department of Conservation, Taranaki Regional Council, three territorial authorities, iwi, Fish and Game, QEII Trust and a host of Taranaki based community groups and trusts, and private landowners.

This section summarises the statutory responsibilities and biodiversity objectives of both the national and local players. Current biodiversity work programmes underway in Taranaki are summarised, and an overall snapshot of biodiversity work happening in the region is presented.

4.2 Central government departments

4.2.1 Department of Conservation

The Department of Conservation (DOC) is the key biodiversity player, and has statutory responsibilities for managing biodiversity on public conservation land. DOC operates under a suite of legislation, particularly the Conservation Act (1987), the National Parks Act (1980), the Wildlife Act (1953), the Wild Animal Control Act (1973), the Resource Management Act (1991), the Trade in Endangered Species Act (1989), the Marine Mammals Protection Act (1978), the Marine Reserves Act (1971), the Reserves Act (1977) and the Foreshore and Seabed Act (2000).

The Wildlife Act applies to land or all tenure, not just public conservation land. Under the Conservation Act the Department may enter into agreements for the management of conservation values of private land should the owner so agree. The Department is also charged, under the Conservation Act, with advocating the conservation of natural and historic resources generally.

The Department administers the Biodiversity Condition and Advice Fund and the similar Nga Whenua Rahui Fund for biodiversity conservation on private land. The Department also has responsibilities under various international agreements, e.g. CITES (relating to the trade in endangered species) and RAMSAR (relating to the wise management of wetlands).

The Department operates under two statements of policy – the General Policy for National Parks(2005) and the Conservation General Policy (2005). These documents provide unified policy for the implementation of the legislation under which the Department operates.

The Wanganui Conservancy Conservation Management Strategy (1997-2007) (CMS) sets out specific management objectives for biodiversity work undertaken across the conservancy. The review of the Conservancy's CMS will identify the outcomes desired for 'landscape scale' places and the objectives to be met to facilitate those outcomes. In Taranaki it is likely that the 'landscape scale' place will be Mount Taranaki and its environs, the hill country forests, the sand dune and coastal country and the marine environment.

The Egmont National Park Management Plan guides management of the biodiversity contained on Mount Taranaki. It is notable that Egmont National Park is the only national park free of feral deer and pigs and other large herbivores (goats and possums) are controlled to low levels over the entire park. In addition, about a third of the park has extensive predator control.

The Proposed Whanganui National Park Management Plan provides the policy framework for the management of that park.

The Department has developed or is developing, standard operating procedures and best practice guidelines for many forms of biodiversity management and monitoring. Such material is generally available to other agencies and individuals.

4.2.2 Ministry of Fisheries

The Ministry of Fisheries is responsible for managing fishing, its effects, and fisheries resources under the Fisheries Act, whose jurisdiction extends out to 200 nautical miles – the edge of the Exclusive Economic Zone (EEZ). The statutory responsibilities for biodiversity are addressed under the Fisheries Act. The Ministry's primary purpose is to ensure that fisheries are used sustainably within a healthy aquatic ecosystem. The Ministry of Fisheries administers the fisheries quota management system and other tools aimed at ensuring sustainable fisheries. Specific projects include such initiatives as the Benthic Protection Areas and the development of the Marine Protected Area Policy and Implementation with the Department of Conservation.

At the regional level, the Ministry of Fisheries chairs a 'Fisheries Liaison Committee', a group representing recreational and commercial fishing interests that the Ministry liaises with over quota management changes, research needs, policy development etc. Compliance and iwi liaison staff are based in New Plymouth.

4.2.3 Ministry for the Environment

The Ministry for the Environment (MfE) has statutory roles and responsibilities for biodiversity under the Resource Management Act (1991), the Resource Management Amendment Act (2005) and the Environment Act (1986). The Ministry for the Environment, in conjunction with the Department of Conservation has developed national priorities for protecting biodiversity on private land, and administer a number of national funds for biodiversity work such as the Biodiversity Condition Fund and the Biodiversity Advisory Fund. The Ministry leads the Oceans Policy project and the Water Programme of Action. MfE plays a lead role in the development of Government policy with respect to climate change and green house gas emission management and mitigation (as does MAF below).

4.2.4 Ministry of Agriculture and Forestry

Biosecurity New Zealand, under the Ministry of Agriculture and Forestry (MAFBNZ) is responsible for managing risks to plant and animal health and animal welfare under the Biosecurity Act 1993 and also takes a lead role in implementing the Biosecurity Strategy for New Zealand. Introduced pests, pest plants and diseases pose a serious risk to biodiversity, agriculture, forestry and aquaculture.

The Ministry of Agriculture and Forestry also has a statutory responsibility for biodiversity under the Forests Act 1949 and the Forests Amendments Act 1993.

4.3 Local government

Both district and regional councils have been involved in managing biodiversity in various ways for many years[29]. They both have statutory roles for biodiversity under the Local Government Act

[29] *Willis, G (2003) Draft guideline on strategic planning for biodiversity: A report for Action Bio-Community on using LTCCPs to promote better biodiversity management.*

(2002), the Resource Management Act (1991) with regional councils also having responsibilities under the Biosecurity Act (1993).

Amendments made to the Resource Management Act 1991 in 2003 gave both district/city and regional councils explicit responsibilities for maintaining indigenous biological diversity (sections 30 and 31). Section 30(1) recognises a function of regional councils as being:
"(ga) the establishment, implementation, and review of objectives, policies, and methods for maintaining indigenous biological diversity:"

The Act also provides for the management of aspects of indigenous biodiversity through the following sections:

- safeguarding the life-supporting capacity of air, water, soil and ecosystems (section 5(2)(b));
- protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna as a matter of national importance (section 6(c)); and
- having regard to the intrinsic values of ecosystems (section 7(d)). In this case, intrinsic values include genetic and biological diversity (section 2(1)).

4.3.1 Taranaki Regional Council

The Taranaki Regional Council (the Council) has a number of statutory roles and responsibilities that have the potential to have a biodiversity component:

- Developing regional policies on managing natural and physical resources;
- Promoting sustainable land management and soil conservation;
- Managing freshwater, land, air and coastal resources by developing regional policy statements, regional plans and issuing of consents;
- Managing rivers and undertaking river control and flood protection;
- Undertaking pest management through regional pest management strategies; and
- Carrying out resource investigation, monitoring and environmental enhancement.

The proposed RPS has the following objective relating to indigenous biodiversity:

To maintain and enhance the indigenous biodiversity of the Taranaki region, with a priority on ecosystems, habitats and areas that have significant indigenous biodiversity values.

The Proposed Regional Policy Statement (PRPS) contains policies and methods to promote indigenous biodiversity, address adverse effects on indigenous biodiversity, prioritise ecosystems, habitats and areas with significant indigenous biodiversity values, recognise other areas with biodiversity values and promote eco-sourcing (Appendix I).

4.3.2 District Councils

There are three district councils in Taranaki - New Plymouth District Council, Stratford District Council and South Taranaki District Council. Each council has objectives, policies and actions in their district plans in relation to indigenous vegetation generally or significant natural areas (SNAs) specifically. All councils have funds available for private landowners for the protection of significant natural areas, e.g. the NPDC Heritage Protection Fund targeted at helping landowners with covenanting, legal, survey and fencing costs. Each district council also manages

a number of council owned reserves and undertakes direct management of plant and animal pest threats within parks, reserves and other council administered lands.

The New Plymouth District Council (NPDC) is currently in the process of reviewing the criteria for its significant natural area programme and re-assessing all the sites listed in their district plan against the criteria. The New Plymouth District Plan currently identifies 25 SNAs within two ecological districts – Egmont and North Taranaki ecological district. They are about to start a programme of consulting with landowners of SNAs on some proposed boundary changes and investigating potential new significant natural area sites. This work will be followed by a review of the wider district with the possibility of identifying further SNAs within revised criteria. NPDC provides a rate remission of 100% for the protection of SNAs and encourages the legal protection of SNAs through the provision of extra subdivision entitlements.

The NPDC has set up the New Plymouth District Council Coast Care group. The approach over the last 12 years has been to concentrate mainly on the larger scale dune restoration projects at New Plymouth, Waitara and Oakura. Now that these projects have been completed the emphasis is on small scale community and school dune plantings with further work to be done on educating coastal landowners, subdividers and farmers on the lessons learnt in Taranaki and around the country over the last 12 years of research into sustainable dune restoration for erosion mitigation.

The NPDC encourages and facilitates other community plantings and operates a pest animal trap lending scheme. Puke Ariki provides information collections, research assistance and delivery of passive and active natural environmental education programmes. The district council administers an e-mail based Environment Network for people with an interest in the environment and runs regular forums for networking and sharing information.

The South Taranaki District Council Plan identifies a number of significant natural areas. The South Taranaki District Council has a heritage fund and works closely with the QEII representative to seek legal protection of significant natural areas. Demand from the council's heritage fund for identified significant natural areas has generally been low although other bush remnants have been fenced through this fund. The South Taranaki District Council has recently reviewed the management plan for the Lake Rotokare Scenic Reserve, and works closely with the Rotokare Scenic Reserve Trust on management of this significant site. The South Taranaki District Council has been a major financial contributor to setting up the pest-proof fenced sanctuary and related facilities.

The Stratford District Plan has a general vegetation clearance rule. No consents have been processed under this rule although the Council works closely with the Ministry of Agriculture and Forestry in relation to sustainable forestry permits. The Council provides rate relief for sites protected under legal covenants.

In addition to indigenous vegetation on private land, each district council has a number of parks and reserves. The councils undertake some biodiversity related work on these such as plant pest control or possum control. Each district council also has the ability to use esplanade strips or reserves to mitigate likely effects of subdivision although how this can benefit biodiversity depends on the ongoing management of these areas.

4.4 Maori

The long occupation of New Zealand by Māori prior to European settlement led to a development of a relationship to native plants and animals, and to their habitats, which is woven into Maori culture and traditions[30].

Over the centuries, Maori have developed close relationships with New Zealand's forests, plants and animals. From the Maori perspective, all living things are originally descended from the gods

[30] This section (taken from an earlier discussion document) is largely based on the findings and principles established with Tangata Whenua following extensive investigation and consultation when preparing the 'Regional Policy Statement for Taranaki' and the four regional plans.

Ranginui (Sky Father) and Papatuanuku (Sky Mother). Their son Tane is the atua (god) responsible for forests. After Tāne had brought all the trees, plants, birds and insects into the world, he created humans, making the form of a woman from the red earth of Hawaiki and breathing life into her. Accordingly, people are connected back to Tane and have kinship bonds and obligations with the other descendants of Tane ie, the trees, plants, birds and other forest creatures.

Flax kete (basket)

To Maori, the responsibilities of humans to the rest of the natural world are determined within the system of tikanga. Tikanga can be best described as the correct way of doing things, and is based upon extensive knowledge of the characteristics and qualities of native trees and plants, on ecosystem dynamics and relationships, and practical management methods and techniques. This knowledge is the result of a cumulative process of learning and adaptation through times of abundance, scarcity and losses. The essential principles of tikanga that shape the Maori world are:

- mauri – the essential life force or distinctiveness that enables each thing to exist as itself;
- tapu – the particular sacredness of people, things and places for particular reasons;
- mana – the status and authority of tangata whenua;
- rangatiratanga – the right of iwi, hapū and whanau to make their own decisions about things that concern them; and
- kaitiakitanga – the ongoing necessity for tangata whenua to look after the taonga, both physical and intangible, that are their heritage.

Traditional Maori use of native trees, other plants and animals included food, building materials, medicine, making of weapons, tools and implements, clothing, decoration and ceremonial purposes. Birds were harvested for kai (food), as were huhu grubs, koura, tuna (eel) and other freshwater fish species. Many plants such as puha, pikopiko and harore continue to be collected and used for food as well as kaimoana (seafood) such as paua, kina and crabs.

Today Maori continue to obtain considerable tribal mana and standing through their kaitiaki (guardian) role of safeguarding resources and taonga for future generations, including traditional food gathering areas associated with particular stretches of rivers, coastal reefs and fishing grounds. This caretaker role is reflected in customary practices such as rotational or seasonal harvesting, the use of rāhui (prohibition) on seafood gathering to prevent over-exploitation, and the avoidance of contamination of freshwater and coastal waters and habitats from human and other wastes. Considerable tribal mana and standing is also obtained from providing locally obtained food for manuhiri (guests) on the marae.

4.5 Landowners

Private landowners are significant players in managing biodiversity outside public conservation areas. The brunt of the costs associated with protecting natural values on private land being borne by private landholders. Almost half of Taranaki's indigenous vegetation (approximately 143,000 hectares) is privately owned.

Much of the work undertaken by landholders is unseen by the wider public. Nevertheless it is considerable. For example, the Council's self-help possum control programme (Figure 6) covers approximately 224,700 hectares of the ring plain. Within this area, landowners are required under the Council's Animal Pest Management Strategy to undertake possum control in order to

maintain the residual trap level at less than 10%. At this level of possum densities, biodiversity values of remnant bush areas on the ring plain are generally safeguarded.

Private landowners are also increasingly involved in restoring riparian vegetation through the implementation of riparian plans (Figure 7), although implementing recommendations for fencing and planting in the plans is only progressing at a slow rate. Landowners are also undertaking biodiversity actions through the retiring of areas from grazing through sustainable farm plans.

These projects are among the largest environmental/conservation programmes on private land in the country.

Many landowners have covenanted their land to protect indigenous vegetation or habitats such as wetlands through QEII or other covenant types. Work undertaken by economic consultants (BERL 2002) identified many millions of dollars being invested by private landowners in Taranaki in environmental enhancement and restoration programmes.

Figure 6 *Self-help Possum Control*

4.6 National organisations

4.6.1 Fish and Game

The Fish and Game Council is an angler and gamebird hunter organisation which has a statutory mandate to manage New Zealand's fresh water sportsfish fisheries and gamebird hunting. Fish & Game looks after the sports of freshwater fishing and gamebird hunting, and the habitats of sports fish and game birds. They are funded through the sale of fishing and hunting licences. Some of the game birds managed by Fish and Game are native species (e.g. NZ shoveler, pukeko, paradise shelduck, grey duck) and Fish and Game NZ has a duty to ensure they are sustainably managed.

The Taranaki Fish and Game Council has outlined objectives in the Taranaki fish and game management plan. Advocacy for habitat for trout is a key focus of their activities, work that has positive spin offs for indigenous fresh water biodiversity too.

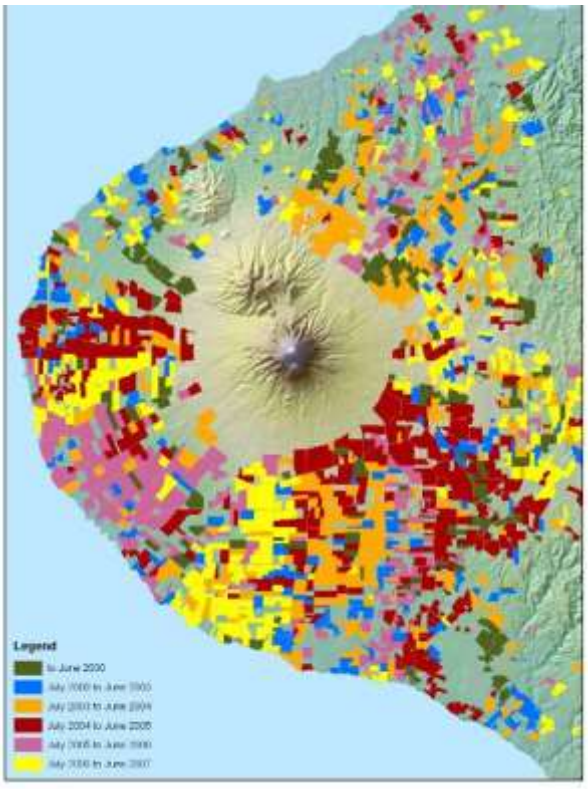

Figure 7 *Riparian plans prepared*

4.6.2 QEII National Trust

QEII National Trust helps landowners protect significant natural and cultural features on their land. QEII was established by the Queen Elizabeth the Second National Trust Act 1977 "*to encourage and promote, for the benefit of New Zealand, the provision, protection, preservation and enhancement of open space.*"

The Act enables QEII to negotiate and administer open space covenants (or protection agreements) with landowners, acquire and manage land, provide financial grants for open space projects, and advocate open space protection through advice, research and information.

In Taranaki there are 137 registered covenants with an additional 38 approved and awaiting registration, totalling 3204 ha in registered or approved covenants. The largest registered covenant in Taranaki is 334 ha, with the average sized covenant being 18.3 ha in area.[31]

4.6.3 Forest and Bird

The Royal Forest and Bird Protection Society of New Zealand is New Zealand's largest national non-governmental conservation organisation. The Society's mission is to preserve and protect the native plants and animals and natural features of New Zealand.

Forest and Bird is active on a wide range of conservation and environmental issues. These include the protection of native forests, tussock grasslands, wetlands, coastlines and marine ecosystems, energy and resource conservation, sustainable fisheries and sustainable land management.

Much of the on-the-ground conservation work of the Society is done by volunteer branch members who run local campaigns and comprehensive conservation programmes in their regions. There are two Taranaki branches of Forest and Bird: North Taranaki and South Taranaki.

The main priorities for the local branches are:

- the management of Fores and Bird reserves: Te Wairoa, Mountain Rd, Lepperton and Tom and Don's Bush, Okato
- running the Kiwi Conservation Club for Children
- advocacy for and involvmenet in the development of local and national government planning and policy frameworks that protect Taranaki's native ecosystems and species
- supporting conservation projects in local areas
- representation on groups pertaining to conservation issues in Taranaki.

The South Taranaki Forest and Bird undertakes predator trapping work on areas of private land east of Eltham, adjacent to Lake Rotokare. This important work will complement and boost the biodiversity value of Rotokare (as some invertebrates and birds will fly out of the safety of Rotokare into these areas of private land). It will also allow these areas to act as a corridor between the Rotokare Scenic Reserve and south east Taranaki.

4.6.4 Herpetological Society

The New Zealand Herpetological Society was formed in 1969[32]. The objectives of the society are to promote awareness and interest in amphibians and reptiles and their conservation, to encourage the study of New Zealand's own species and to encourage the captive keeping and breeding of both New Zealand herpetofauna, and such exotic species of reptiles and amphibians as may be legally kept.

The Society caters for all levels of interest in herpetology. The majority of members keep and breed native geckos and skinks in captivity, or are engaged in the field study of these animals. The Society plays a key role in providing data required to compliment the activities of the larger conservation organisations.

There is an active Herpetological Society based in New Plymouth.

[31] *www.nationaltrust.org.nz*
[32] *http://www.reptiles.org.nz/*

4.6.5 Ornithological Society

The objectives of the Ornithological Society are to encourage, organise and promote the study of birds and their habitat use particularly within the New Zealand region and to foster and support the wider knowledge and enjoyment of birds generally[33]. The Society promotes the recording and wide circulation of the results of bird studies and observations, and generally aims to assist the conservation and management of birds by providing information, from which sound management decisions can be derived.

There are active members of the Ornithological Society based in New Plymouth.

4.6.6 Tane's Tree Trust

The vision of Tane's Tree Trust is "*To see the majority of New Zealand landowners successfully planting and sustainably managing indigenous trees for multiple uses by 2020*." Tane's Tree Trust is a charitable trust formed in 2002 to encourage New Zealand landowners to plant and sustainably manage native trees for multiple uses.

The objectives of Tane's Tree Trust include:

- promotion of native forestry as an attractive land use option by consolidating and advancing the state of knowledge of native tree species;
- maximising economic incentives for establishing natives;
- resolving legal and political obstacles to the planting of natives; and
- encouragement of knowledge sharing amongst stakeholders.

Current activities of the Trust include the re-instatement of old field trials, the running of workshops to communicate information on indigenous forest establishment and management, planning and establishment of major planting trials, speaking to interested groups about the work of the Trust and the publication of information on indigenous forestry and conservation[34]. The Trust is currently involved in the preparation of a handbook on all aspects of establishing indigenous forests – for conservation as well as productive purposes.

4.6.7 Environment Monitoring and Action Project

The Environmental Monitoring and Action Project (EMAP) is funded by the Ministry of Education as a LEOTC (learning environment outside the classroom) project. EMPA combines the delivery of the *National Waterways Project* and the *GLOBE* programme. The project involves encouraging students and teachers to undertake environmental investigations and then to take some form of action for the environment. Five different study areas can be investigated through the EMAP – hydrology, atmosphere, land cover and phenology (seasonal effects) – several of these have direct biodiversity applications. The National Waterways Project provides access to water quality monitoring activities for use in rivers, streams and other fresh waters. It complements the Council's education programme. GLOBE is an international programme, encouraging students to take scientifically valid measurements and report their data into an international database.

There is a Taranaki/Wanganui coordinator based in New Plymouth.

4.6.8 New Zealand Landcare Trust

The New Zealand Landcare Trust[35] is an independent voice of landcare, sustainable land management and biodiversity. The Trust comprises seven trustees that include representatives from agricultural production, outdoor recreation, and environmental interests, which together encompass the majority of rural land-use issues in New Zealand. Staff are located around New Zealand and they work with community groups providing facilitation to empower groups,

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[33] */www.osnz.org.nz*
[34] *www.tanestrees.org.nz*
[35] */www.landcare.org.nz*

information brokering, support and encouragement and develop networks, partnerships and collaboration.

There is no regional coordinator for Taranaki.

4.6.9 Dune Restoration Trust of New Zealand

The Dune Restoration Trust of New Zealand grew out of the Coastal dune vegetation network. The aims of the trust are to:

- Provide a network for information exchange on sustainable management on dune ecosystems.
- To facilitate research on NZ Dune ecosystems
- Promote public awareness of proven methods for protection, restoration, conservation and sustainable management of dune ecosystems

The Dunes Trust brings people together to share information on Sand Dunes with emphasis on the use of NZ native dune vegetation to restore the dunes' natural character, form and function.

4.7 Taranaki trusts and community groups

4.7.1 East Taranaki Environment Trust

In 2005 an enthusiastic group of people formed the East Taranaki Environment Trust (ETET) to protect native species and ensure their survival in an original location. The Trust has made a huge effort to protect around 3 000 ha of kiwi habitat in the Matau/Pouiatoa area in Eastern Taranaki.

With the support of other organizations, including this Council, and community funds the Trust is moving to protect the rich biodiversity in the area. As well as kiwi the dense bird population includes, New Zealand falcon, kereru, fern bird, bat North Island robin, tui, bellbird and whiteheads.

The Trust has developed a 5 year strategic plan to progress their goal of '*insitu native species protection with a focus on kiwi*'. Their goal is to see 500 pair of kiwi under predator protection in Taranaki within 5 years.

With the support of around 26 landowners in the area the Trust carries out an extensive predator trapping programme with over 600 stoat boxes.

The Trust is in the process of exploring an idea for expanding its work in partnership with the Council, DOC and other agencies and the community of adjacent landowners and has secured resources from the Biodiversity Condition Fund to do so.

4.7.2 Nga Motu Marine Reserve Society

The Nga Motu Marine Reserve Society Incorporated is a diverse community group representing scientific, educational and recreational interests. Their objectives are to establish a network of marine reserves in the Taranaki region, to ensure the marine life and other natural resources within the region are protected, to encourage the scientific study of marine life on the Taranaki coast and to foster community awareness of the coastal environment by education.

The Society was the applicant for the Proposed Tapuae Marine Reserve which has just been legally gazetted.

4.7.3 Ngati Tara Oaonui Sandy Bay Society

An incorporated society has formed to promote and actively support conservation activities that benefit the environment, wildlife and appropriate recreational users of the Sandy Bay area in Oanui. The Society also aims to assist recreational users and others to gain a greater

appreciation of the area. They have undertaken a number of activities such as fencing, pest control and putting up signs to protect New Zealand dotterels and other threatened bird species.

4.7.4 Rapanui Grey-Faced Petrel Trust

The Rapanui Grey-Faced Petrel Trust was established to assist in the management, conservation and monitoring of the Rapanui grey-faced petrel colony, particularly the management of the predator exclusion fence. The Trust also aims to foster community knowledge and interest in grey-faced petrels through public awareness activities.

4.7.5 Rotokare Scenic Reserve Trust

The Rotokare Scenic Reserve Trust has the following vision statement: "Rotokare Scenic Reserve will be a flourishing indigenous ecosystem, highly valued by the community." The Trust aims to eradicate all introduced mammal pests from the Rotokare Scenic Reserve within 3 years and prevent their reintroduction back into the pest fenced area. The Trust has developed a pest eradication plan which includes operational and monitoring objectives.

The Trust's mission is:

- to achieve the highest level of restoration, protection and enhancement of the indigenous ecosystem at Rotokare Scenic Reserve
- to actively involve the community and provide the best opportunities for education, recreation and inspiration, within the bounds of environmental protection.

4.7.6 Taranaki Farm Shelter and Forestry Association

The Taranaki Farm Shelter and Forestry Association is a branch of the New Zealand Farm Forestry Association. The Association promotes the planting of shelter and trees for timber.

4.7.7 Taranaki Kiwi Trust

Taranaki Kiwi Trust (TKT) works throughout Taranaki "to promote and facilitate the restoration and protection of sustainable populations of kiwi in Taranaki'. The Trust works with a range of other groups including Department of Conservation, other conservation groups, schools and private landowners.

The kiwi has loose, hair-like feathers

The flagship programme is run in partnership with DOC to restore a sustainable population of kiwi in Egmont National Park. This includes a large predator trapping project that covers over 6500ha and Bank of New Zealand's Save the Kiwi Trust Operation Nest Egg project that enables the Park's kiwi population to be rejuvenated.

TKT also works with other biodiversity conservation groups, some beyond the region, to achieve good outcomes for kiwi. The Trust has an active education and advocacy programme that includes school visits, displays and resource kits.

Supporting private landowners interested in kiwi protection is also a key part of the Trust's work. The Trust runs the Community Kiwi Protection (CKP) Programme. Here, the Trust's Field Officer works with landowners to establish predator control regimes on their properties, with trap boxes on long-term loan from the Trust. The Trust also maintains a regional database of recent and historic kiwi records. It also has funding to increase interaction with a wider range of stakeholders involved in land management within Taranaki.

4.7.8 Taranaki Tree Trust

The Taranaki Tree Trust is a charitable trust, dedicated to the preservation and development of the region's ecosystems and landscapes. The Taranaki Regional Council administers and services the Taranaki Tree Trust and provides a part time coordinator.

The Trust objectives are to:

- promote an awareness and appreciation of Taranaki's distinctive natural heritage;
- preserve Taranaki's unique character by protection and planting; and
- promote the planting of trees both indigenous and exotic on public and/or private land.

The Trust assists land owners with the protection of valuable forest remnants and wildlife habitats. It helps with fencing and planting of riparian (streambank) margins and the protection of forest and wetland remnants through fencing or planting. The Trust is dedicated to raising funds and investing them to support Taranaki farmers and landowners protect or enhance remnant wetland and forests.

4.7.9 Te Wera Arboretum Trust

Te Wera Arboretum Trust is a recently formed charitable trust in order to promote, conserve, develop and preserve the exotic and native plant collection at Te Wera Arboretum. The objectives of the Trust are to preserve the Arboretum and the existing plant collection of both exotic and indigenous timber species. The Trust will ensure the plant collection is sustainably managed whilst encouraging public access and the promotion of the Arboretum for its scientific, educational and recreational values.

4.8 Industry

The principal rural industries and their associations that have the potential to impact on, or take positive action for biodiversity are agricultural, horticultural, forestry and energy generation. This includes the small to medium business enterprises of individual farms as well as the industry bodies and processing industries. The agricultural, horticultural and forestry sectors are moving rapidly to improve performance in relation to environmental management. Some examples of this are the NZ Forest Accord 1991, the Dairying and Clean Streams Accord 2003 and Project Green for sheep, beef, deer and goat farms.

The New Zealand Forest Accord

The New Zealand Forest Accord is an agreement between members of commercial forestry and conservation groups to recognise that development of planted forest should be in balance with preservation of natural forest. It was signed in 1991 between the New Zealand Forest Owners Association, a number of other forestry associations and a range of environmental or recreational organisations.

Dairying and Clean Streams Accord

The Dairying and Clean Streams Accord signed by Fonterra Co-operative Group, regional councils, Ministry for the Environment and the Ministry of Agriculture and Forestry, while not legally binding, sets environmental standards for dairy farms as part of the international marketing strategy for products from New Zealand and a responsible approach to the industry's impact on the environment. The Accord, and regional action plans, include targets to protect regionally significant or important wetlands, exclude dairy cattle from streams, implement riparian plans etc.

Project Green

Project Green aims "To achieve a principle of food safety, animal welfare and sustainable resource management that is defendable throughout the world." Project Green has developed 'NZ Farmsure', to promote an on-farm sustainability programme to NZ Farmers. It has been designed by farmers for farmers to relate to New Zealand farming conditions while focusing on enhancing production, addressing sustainability and creating market opportunities. The

standard is based on best-practice farming and designed to demonstrate that farming practices are 'clean and green'.

Other industry players also have the opportunity to be involved in biodiversity, e.g. Trustpower complying with resource consents for fish passage, or voluntarily allowing downstream eel passage from the Patea dam.

4.9 Current key biodiversity programmes in Taranaki

There is a whole suite of biodiversity actions being undertaken in Taranaki by a number of agencies, NGOs, community groups, trusts, and individuals. These actions can be grouped according to work area (Table 2) in order to gain an appreciation of the current biodiversity programmes being undertaken across the Taranaki region.

Table 2 Summary of Biodiversity Programmes undertaken in Taranaki

	Work area	Work programmes	Who ?[36]
Land, freshwater, coast and marine environments	**Statutory planning**	Regional Policy Statement development. Regional planning for coast, freshwater and soil. District Planning – particularly for significant natural areas. Regional planning for biosecurity – animal pests, pest plants. Review of Conservation Management Strategy and preparation of conservation management plans and national park plans.	• TRC • TRC • District Councils • TRC • DOC
	Consents	Administration of resource consents/rules for water quality, water allocation, land drainage etc through the Freshwater Plan, Soil Plan and Coastal Plan. Monitoring and enforcement of consent conditions. Administration of concessions for undertaking activities on conservation land and consents under the Wildlife Act. Administration of land use consents required under district plans. Sustainable Forestry permits	• TRC • TRC • DOC • District Councils • MAF
	Advocacy	Advocacy to government re policy direction. Advocacy under the Resource Management Act, Biosecurity Act for biodiversity values to be recognised through plans/consents.	• TRC • DOC, F&B, F&G, Iwi, NZHS, Nga Motu MR Soc
	Education	In school programme on species In school programmes on environmental monitoring or awareness: water quality, rocky shore etc. Children's conservation club. Programmes with schools visiting ENP. Conservation week, Seaweek, Clean up NZ day. World Wetlands Day etc. Rotokare Environmental Education Centre (under development)	• TKT, NZHS • TRC, EMAP • F&B • DOC • DOC, District Councils, TRC, F&B, Nga Motu MR Society, F&G. • Rotokare SRT
	Treaty settlement outcomes	Development of protocols between iwi and government agencies.	• Iwi, DOC, TRC, MFish, District Councils etc.

[36] *TRC=Council, DOC=Department of Conservation, F&G=Fish and Game, F&B=Forest and Bird, NZHT=NZ Herpetological Society, Nga Motu MR Soc= Nga Motu Marine Reserve Society, EMAP=Environmental Monitoring and Action Project, Rotokare SRT = Rotokare Scenic Reserve Trust, CNIBDT = Central North Island Blue Duck Trust, AHB= Animal Health Board, TKT = Taranaki Kiwi Trust, ETET = East Taranaki Environment Trust*

Land	**Protecting indigenous vegetation or wetlands on private land**	Inventory of significant wetlands and key native ecosystems, or significant natural areas.	• TRC, District Councils, DOC
		Implementing the Significant Wetlands Programme which comprises financial assistance for fencing, planting and legal protection through covenants and agreements.	• TRC
		Programmes for protection of significant natural areas on private land.	• NPDC, STDC, QEII
		Preparation of conservation plans for significant wetlands	• TRC
		Facilitating private landowners and community groups to access funds from the Council's environment enhancement grant, the Taranaki Tree Trust, or national funds such as the biodiversity condition fund.	• TRC
		Administer the Nature Heritage fund, the Nga Whenua Rahui fund and the biodiversity condition fund .	• DOC
		Manage a number of conservation covenants on private land.	• DOC
		Legally protecting areas of wetland or indigenous vegetation through covenants.	• Private Landowners, QEII, DOC
		Administration of heritage funds for SNAs.	• District Councils
		Facilitating access by private landowners to funds from the Gamebird Habitat Trust for wetland enhancement and protection.	• F&G
		Raise funds and allocate to Taranaki landowners	• Tree Trust
	Threatened species: animals	Blue duck population establishment in ENP.	• DOC, CNIBDT, ETET
		Blue duck monitoring in Waitotara catchment	• DOC
		Kiwi population enhancement in ENP and Aotuhia	• DOC, TKT, Iwi
		Kiwi protection elsewhere in Taranaki.	• DOC, TKT, ETET, Rotokare SRT
		New Zealand dotterel.	• DOC, TRC, Ngati Tara Oaonui Sandy Bay Trust
		Striped skinks and Southern North Island speckled skink – monitoring, surveying and research for speckled skink.	• DOC
		Kokako – liaison and advice into re-introducing to North Taranaki.	• DOC, Ngati Tama
		Research into pollination and seed dispersal processes in fragmented landscapes – using kereru and tui.	• DOC
		Lizards and geckos – opportunistic survey	• DOC, NZHS
		Powelliphanta 'Egmont' survey and monitoring	• DOC
	Threatened species: plants	Monitoring and management of threatened coastal cliff plants.	• DOC
	Threatened species: invertebrates	Powelliphanta Snail Survey and Monitoring.	• DOC
		Notoreas "Taranaki " moth monitoring, survey and habitat protection at coastal sites with moth presence.	• DOC
	Animal pests	Initial possum control operations on Taranaki ring plain.	• TRC
		Facilitating landholder's on-going maintenance of reduced possum numbers (Self-help possum programme).	• TRC, Private landowners
		Enforcement of rules of the Pest Management Strategy: Animals.	• TRC
		Deer control programme	• DOC and AHB

	Site led animal pest programmes	ENP – possums, goats and pigs ENP boundary possum programme ENP – mustelids to protect kiwi and blue duck. Mustelid control on private land to protect blue duck (e.g. adjacent to ENP) and kiwi (e.g in East Taranaki). North Taranaki reserves and eastern conservation areas – goats and deer. Taranaki ring plain reserves – possum control Whanganui National Park – possum and goats. Rotokare Scenic Reserve– exclusion fence, possum and predator control. Whitecliffs – possums. Facilitating landholders undertake predator control on key native ecosystems, e.g. Toko wetlands. Rapanui – predator control. Sandy Bay – predator control.	• DOC • DOC and TRC • DOC, TKT, NIBDT • ETET, DOC, TRC • DOC • DOC • DOC • Rotokare SRT, TRC, DOC, STDC • Ngati Tama, TRC • TRC, Private landowners • Rapanui Trust • Ngati Tara Oaonui Sandy Bay Society
	Pest plants	Eradication of eradication pest plants. Enforcement of rules of the Pest Management Strategy: Plants. Implementation of Pest Management Strategy: Plants	• TRC, DOC • TRC • TRC, DOC, landowners, Transit, district councils
	Site led pest plant programmes	Site led weed projects – ENP, Meeting of Waters Scenic Reserve, South Taranaki coastal sites where threatened habitat and species, Sugar Loaf Islands. Recognition of Key Native Ecosystems in Pest Management Strategy: Plants.	• DOC • TRC
	Fencing	Survey of fencing and compilation on national fencing asset management system. Mapping extent of riparian fencing and planting along waterways and significant wetlands through riparian plans. Fencing of riparian areas and remnant areas	• DOC • TRC • Landonwers
	Indigenous vegetation restoration	Preparation of riparian management plans. Annual monitoring of implementation of riparian management plans. Facilitating implementation of riparian planting through making plants available at low cost. Undertaking riparian restoration. Community plantings – riparian and coast	• TRC • TRC • TRC • Private landowners, schools • Ngati Tara Oaonui Sandy Bay Society, Coast Care groups
	Sustainable land management	Preparation of comprehensive farm plans – provide advice on protecting or retiring indigenous vegetation and undertaking pest and weed control. Making plants available at low cost. Monitoring of implementation of sustainable land plans.	• TRC • TRC • TRC
	Monitoring - land	Rapid assessment surveys to gather data on conservation areas, reserves, covenanted areas. Bi-Annual inspections of QEII sites undertaken, or more frequently as required. Outcome monitoring for animal pest control work (permanent plots, kohekohe FBI monitoring, aerial foliar browse monitoring,seedling ratio index monitoring etc) in ENP, north Taranaki and Waitotara conservation areas. Monitoring sustainable land use. Carbon monitoring system plot network School based monitoring of land use Permanent forest plot monitoring in Rokare Scenic Reserve	• DOC • QEII • DOC • TRC • MfE • EMAP and schools • Rotokare SRT

Freshwater	**Barriers to native fish migration**	Identification of known fish passage barriers. Facilitating removal of fish barriers through resource consents process, advocacy and/or the environmental enhancement grants scheme. Facilitating upstream passage of fish through fish passes and downstream passage of eels through water releases from hydropower schemes.	• TRC • TRC • Trustpower, NZ Energy
	Threatened freshwater species	Mudfish – trials in captive rearing of brown mudfish, annual monitoring of key mudfish sites. Other threatened fish species – occasional monitoring of large galaxiids.	• DOC • DOC
	Freshwater pests	Taranaki region didymo group. Pest fish – survey, control, monitoring, education.	• TRC, DOC, F&G, Trustpower • DOC, TRC
	Fresh water quality and quantity protection.	Fresh water Plan and administration of consents Advocacy under plans and consents Preparation of riparian plans Implementation of riparian plans through planting and fencing of riparian areas Compliance with water abstraction consents.	• TRC • F&G, DOC • TRC • Landowners • Consent holders
	Monitoring - freshwater	State of the environment monitoring for native fish biodiversity, fresh water invertebrate biodiversity, periphyton diversity. School based monitoring of fresh water biodiversity Reporting on wetlands and change of condition under the RAMSAR convention.	• TRC • EMAP and schools • DOC, TRC
Marine and coastal	**Marine Protected Areas**	Compliance and law enforcement in the Parininihi Marine Reserve, Sugar Loaf Islands Marine Protected Area and Tapuae Marine Reserve (once gazetted). Facilitation of marine reserve management groups.	• DOC, MFish (SLIMPA) • DOC
	Threatened species – marine	Maui dolphin – recording sightings. Blue penguins and other shore birds – recording sightings, education.	• DOC, fishers • Orthinological Society, Nga Motu MR Society
	Threatened species: plants	Sebaea ovata (threatened coastal plant) – habitat manipulation to enhance population. Coastal threatened plants – working with landowners, monitoring.	• DOC • DOC
	Pest plants - marine	Undaria – control, monitoring and public awareness.	• DOC, TRC
	Fisheries	Compliance with fishing regulations. Quota management.	• MFish
	Monitoring and information gathering	SEM monitoring of estuaries and rocky shore sites. Inventory of coastal information – keeping inventory current. Monitoring of biodiversity in the above marine protected areas. Joint inventory of information. Information gathering project for South Taranaki coast. School based monitoring of coast	• TRC • TRC • DOC • DOC, TRC • DOC, TRC, Ngati Ruanui, Nga Rauru, Fishing clubs • EMAP and schools

5. Council's strategy for biodiversity

This section identifies a number of biodiversity issues facing the Council – such as tackling biodiversity on areas identified in the national priorities statement for biodiversity on private land, knowing where to start in terms of directing practical management onto regionally significant sites, developing partnerships with landowners and other agencies, trusts and community groups, and managing the gathering and storage of biodiversity information.

The Council is best placed to add value to the business of biodiversity protection in Taranaki by focusing on those areas of biodiversity work where the Council has the greatest legitimacy, i.e. where it has the greatest authority or support to act (either through legislation, policy or community expectations) and where actions build on existing capacity and skills of the Council. This section sets out where the Council is best placed to focus its biodiversity efforts.

5.1 What are the biodiversity issues facing the Council ?

The national priorities for protecting rare and threatened native biodiversity on private land prioritise indigenous vegetation associated with: land environments that have 20% or less remaining in indigenous cover; sand dunes and wetlands; originally rare ecosystems and habitats for threatened species.

The Council's Proposed RPS identifies the importance of protecting under-represented habitats of terrestrial indigenous flora and fauna (ISS.1), the need to reduce the impact of pest animals and plants, particularly where they threaten regionally significant indigenous biodiversity values (ISS.2), the importance of encouraging conductivity between remnant habitats to maintain or enhance indigenous biodiversity values (ISS.3) and the need to reduce threats to freshwater and marine habitats, flora and fauna (ISS.4).

The Council undertakes a raft of biodiversity actions already, a number co-incidentally target one or other of the national priority statements, (e.g. protecting indigenous vegetation on 'threatened land environments' on the ring plain through the self-help possum programme, restoring such vegetation through the riparian programme), a number of actions target wetlands (e.g. the significant wetland programme) and some even target private land important for threatened species (e.g. the blue duck project in partnership with Eastern Taranaki Environment Trust).

While a number of existing programmes have an element of a biodiversity focus, there are opportunities for enhancing this further, e.g. identifying remnant wetland or bush areas through the preparation or monitoring of riparian plans.

The Council has developed an inventory of Key Native Ecosystems, areas that have been identified as having regionally significant indigenous biodiversity values. The Council has indicated in various documents (LTCCP, Biodiversity Strategies) an intention to target pest management on these areas. The key issues are where to start, how to prioritise sites, and how to identify what management is most likely to achieve good biodiversity outcomes and the most cost-effective and efficient use of resources for all involved.

Section 4 highlighted the wide range of agencies and community groups involved in biodiversity work in Taranaki. A key issue for Taranaki is to improve coordination between agencies and community groups. Improved coordination will assist to build and maintain momentum and

energy for biodiversity projects and help with obtaining external sources of funding. The Council may play a key role in facilitating improved coordination and promoting integrated management of indigenous biodiversity in the region by liaising and maintaining linkages with all the various agencies, groups and individuals working on biodiversity in Taranaki.

Biodiversity management is heavily reliant on the gathering and management of information. Currently the Council data management systems are not well set up to be able to store and retrieve biodiversity information about specific sites. In an ideal world, a biodiversity database would store information on sites – management actions, monitoring data, management undertaken by others etc, and would link with Council's other databases.

Basic biodiversity information, even for Key Native Ecosystems, is often out of date, having not been updated since originally gathered for the Protected Natural Area Surveys of the 1980s. Therefore, gathering information on biodiversity values, particularly in Key Native Ecosystems is required. The Council will also need to review State of Environment monitoring programmes to ensure the Council is well placed to evaluate the effectiveness of its biodiversity policies and response to management actions with good scientific information.

Data management is an issue that is being faced and addressed by a number of agencies and also community groups. It may be that the Council needs to use data management systems developed and managed by others rather than develop its own systems. There are a number of data management systems that have been developed for such things as threatened species, bird counts, vegetation surveys etc.

5.2 How to address these issues through a strategic approach

It is important to develop a strategic approach for the Council's biodiversity work given that there is invariably more work than can be achieved with the resources available, and a number of agencies and groups working in the biodiversity area.

The Council has found that effective strategies require the coalescence of three components: good ideas or purpose, capacity to deliver and the support of those stakeholders to allow and assist progress, i.e. the 'should do, can do, others want' formula for success (Figure 8).

The best results are anticipated when there is a clear focus and a clear understanding of where the Council is best positioned to achieve biodiversity gains.

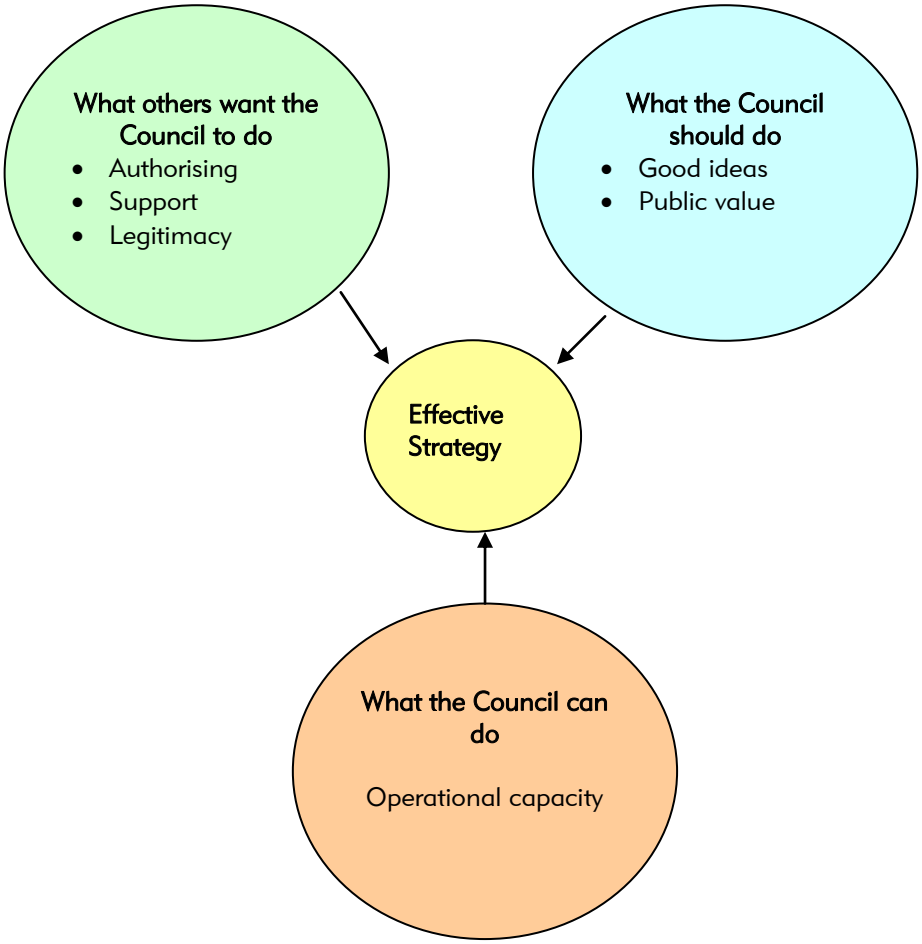

Figure 8 *Effective strategies take into consideration the authorising environment and existing capacity in addition to the value added.*

5.2.1 Council's mandate for biodiversity – what others want

The Council's involvement in biodiversity will be most effective where the Council has the strongest legal or social mandate for that work. The Council's mandate for involvement in biodiversity work comes from:

- legislation such as the Resource Management Act 1991 and the Biosecurity Act 1993;
- national policy, such as the national priorities for protecting rare and threatened native biodiversity on private land;
- regional resource management plans such as the freshwater plan and coastal plan; and
- the Long Term Council Community Plan.

Each of these documents contributes to authorising the Council's biodiversity programme and focus (Table 3).

In addition, in a survey carried out as part of the community outcomes process under the Local Government Act 2002, indigenous biodiversity featured strongly. Seventy percent of respondents considered the protection of native bush and wildlife to be very important[37].

[37] *Future Taranaki Community Outcomes Report*

Table 3 Legislative and policy sources authorising the Council's biodiversity work

Source of legitimacy	Summary
Resource Management Act 1991	This Act is the principle legislation governing the use of resources and so has a key role in managing biological diversity. A number of sections are relevant, particularly s5, 6(c), 7(d) and s30 (1)(c)(iiia) that states that it is a function of regional councils to control the use of land for the purpose of maintaining and enhancing ecosystems in water bodies and coastal waters, and s30(1)(ga) which states that it is a function of regional councils to establish, implement and review objectives, policies and methods for maintaining indigenous biodiversity.
National priorities for protecting rare and threatened native biodiversity on private land	The statement of national priorities was developed by the Ministry for the Environment and Department of Conservation to provide local government, which has the primary responsibility for protecting native biodiversity on private land, a national perspective on priorities. The four priorities for the protection of indigenous vegetation are: • Indigenous vegetation associated with land environments (defined by Land Environments of New Zealand at Level IV) that have 20% or less remaining in indigenous vegetation (Figure 3); • Indigenous vegetation associated with wetlands and sand dunes; • Indigenous vegetation associated with 'originally rare' ecosystem types; and • Habitats of threatened species.
Long Term Council Community Plan	The Long Term Council Community Plan was developed in consultation with the community under the provisions of the Local Government Act 2002. It: • Identifies that flourishing biodiversity is a vital ingredient of a prosperous, healthy and sustainable community; • Signals that the Council anticipates that it will expand its role further in maintaining and protecting the region's biodiversity; • Identifies the major role the Council has to play in undertaking pest management in order to tackle the decline of biodiversity; • Notes Council's desire to redirect pest control efforts into biodiversity protection on specific sites as targets on the self-help possum control programme on the ring plain are met; and • Notes that practical assistance will be provided in the form of environmental enhancement grants for regional initiatives to protect and enhance the region's biodiversity.
Proposed Regional Policy Statement	The PRPS contains an objective, policies and methods (Appendix 1) that aim to maintain and enhance the indigenous biodiversity of the Taranaki region, with a priority on ecosystems, habitats and areas that have significant indigenous biodiversity values. Submissions and further submissions have been received on the PRPS. Submissions tended to support the biodiversity provisions proposed, although the proposed biodiversity chapter will be further worked pending the outcome of submission analysis.
Freshwater Plan for Taranaki	The Regional Freshwater Plan for Taranaki contains objectives, polices and methods that indicate that the Council will undertake environmental management in a manner that safeguards ecological processes (which would safeguard biodiversity) and significant areas (e.g. Appendix 1A of the Plan for high value rivers and streams, Appendix II for significant wetlands).
Coastal Plan for Taranaki	The Regional Coastal Plan for Taranaki contains objectives, polices and methods that indicate that the Council will undertake environmental management in a manner that safeguards ecological processes (which would safeguard biodiversity values) and identifies a separate management regime for areas of significant conservation value.
Biosecurity Act 1993	This Act provides for the exclusion, eradication and effective management of pests and unwanted organisms. Under this Act local authorities prepare regional pest management strategies.
Pest Management Strategies for Taranaki	The Pest Management Strategies for Taranaki identify eradication and surveillance pest species and signal that the Council will undertake direct control of pest animals and plants where they threatened regionally significant values in Key Native Ecosystems.

The community support for Council's biodiversity work is strongest where that work is undertaken on private land, i.e. rateable land or where it is clearly enshrined in legislation such as the RMA. The Department of Conservation (DOC) is funded and empowered, in its own right, to manage the conservation land it administers. Both DOC and the Council share a common objective of attempting to achieve protection of key remnant natural habitats. The Council has undertaken

an inventory of regionally significant sites for indigenous biodiversity (TRC, 2006). Many of the KNEs were originally identified as priority 'Recommended Areas for Protection' in the various Protected Natural Area Reports produced by DOC. In this inventory, there are a total of 99 Key Native Ecosystem sites that are wholly or partially privately owned (Figure 9). The Council has a stronger mandate for working with landowners on private land, than on land managed by DOC. In addition though, working with landowners who own land adjacent to crown owned Key Native Ecosystems may be where the Council can best assist the DOC to protect the regionally significant biodiversity values of sites they manage.

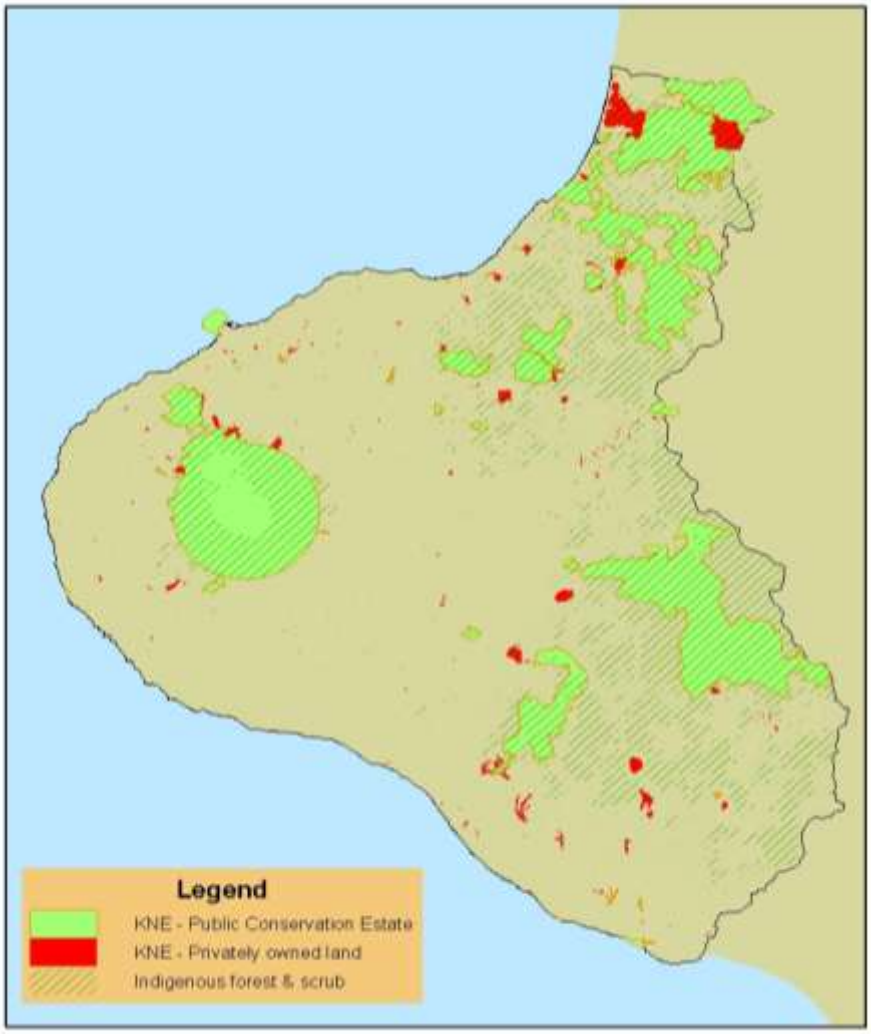

Figure 9: Key Native Ecosystems according to land tenure

5.2.2 Existing capacity - what can the Council do ?

The Council's biodiversity work will be the most effective where the Council builds on existing programmes utilising existing capacity. For example:

- Building on positive working relationships and the goodwill of landowners that have been built up through the Council's existing land management and pest management programmes;
- Recognising that the existing riparian programme will ultimately lead to restoration of indigenous vegetation on threatened land environments (the ring plain);
- Incorporating remnant bush or wetlands on private land, particularly on threatened land environments, such as around the ring plain, into the existing riparian programme;
- Recognising that the current self-help possum programme protects remaining indigenous vegetation on threatened land environments (the ring plain);
- Building on the success of the significant wetland programme by expanding it into the Key Native Ecosystem programme; and

- Recognising the biodiversity component of consent compliance and monitoring programmes.

The Council will best add value to the area of biodiversity through using tools and methods that have been developed for other work areas. For example, the Council has now prepared over 1706 riparian plans. Land Management Officers use aerial photographs to map existing and proposed fencing and make recommendations to landowners for fencing and planting. Information gathered in the field with the landowner is then transferred onto a GIS map which is then provided back to the landowner, and also enables the Council to calculate data at a regional scale. The riparian plans could serve as a model for the Council to develop specific integrated 'Biodiversity Plans' for Key Native Ecosystems.

5.2.3 Good ideas - what biodiversity actions should the Council do ?

'Biodiversity work' spans an extensive suite of possible actions – from planning, advocacy and consent management, to protecting wetlands or bush remnants with covenants, fencing, and pest animal and plant management. While all might be 'good ideas', to make the most efficient use of Council resources available for biodiversity, the actions that the Council chooses to undertake must be strategic and prioritised. To do otherwise runs the risk of being unable to deliver on community expectations or spreading resources too thinly for effective outcomes, such as focusing on preparing biodiversity plans to the detriment of achieving work on the ground. A list of possible biodiversity actions are set out in Table 4.

Table 4 Assessment of possible ideas for biodiversity actions against legislation and policy, and Council capacity

	"Good ideas – what Council could do"	"Authorising legitimacy – what others want Council to do"							"Operational Capacity – what Council can do"	Strategic priorities for Council's Biodiversity work
Work area	Possible actions	RMA	NPs[38]	LTCCP	PRPS	FWP	RCP	Pest S	Council capacity	
Animal pests	advice and education	x		x	x			x	x	Existing Council programme
	statutory planning	x		x	x			x	x	Existing Council programme
	enforcement	x		x	x			x	x	Existing Council programme
	direct control on private land		x	x	x			x	x	Key action for biodiversity strategy, particularly where targeted on threatened land environments or habitats of threatened species on private land
	direct control on private KNE		x	x	x			x	x	Key action for biodiversity strategy
	direct control on public land									No mandate and no capacity, but able to work with DOC to optimise operations on the private/public land interface
	monitoring of pest numbers			x	x			x	x	Key action for biodiversity strategy
	monitoring of control effectiveness			x	x			x	x	Key action for biodiversity strategy
Pest plants	advice and education	x		x	x			x	x	Existing Council programme
	statutory planning	x		x	x			x	x	Existing Council programme
	enforcement	x		x	x			x	x	Existing Council programme
	direct control on private land		x	x	x			x	limited	
	direct control on private KNE		x	x	x			x	limited	Key action for biodiversity strategy
	direct control on public land									No mandate and no capacity
	monitoring of pest plant distributions			x	x			x	x	Existing Council programme
	monitoring of control effectiveness			x	x			x	x	Existing Council programme
Threatened terrestrial species	threatened species management, e.g. captive rearing									No mandate and no capacity, DOC role
	management to create/safeguard habitat for threatened sp	x	x		x			x	limited	Key action for biodiversity strategy
	monitoring of threatened species		x						limited	Possible action for biodiversity strategy to assess effectiveness of management programme and state of environment monitoring.
Freshwater - streams, rivers	advice and education	x		x	x	x		x	x	Existing Council programme
	statutory planning	x		x	x	x		x	x	Existing Council programme
	enforcement	x		x	x	x		x	x	Existing Council programme
	monitoring of freshwater biodiversity	x		x	x	x			x	Existing Council programme
	Habitat protection	x		x	x	x		x	x	Existing Council programme
	working with owners of structures to improve fish passage	x		x	x	x			x	Existing Council programme
	managing									No mandate and no capacity, role of

[38] *National priorities for protecting rare and threatened native biodiversity on private land, MFE/DOC (2007)*

	freshwater fisheries									Mfish and DOC
Freshwater - wetlands	advice and education	x	x	x	x	x			x	Existing Council programme that could be enhanced for non-significant wetlands
	statutory planning	x	x	x	x	x			x	Existing Council programme
	enforcement - significant wetlands	x	x	x	x	x			x	Existing Council programme
	enforcement - remaining wetlands	x	x							Possible action
	working with landowners on legal protection significant wetlands	x	x	x	x	x			x	Existing Council programme
	working with landowners on legal protection - remaining wetlands	x	x						x	Existing Council programme
	monitoring condition of significant wetlands	x	x	x	x	x			limited	Key action for biodiversity strategy
	determining extent of remaining wetlands	x	x			x			limited	One off resource investigation followed by monitoring after aerial photo runs.
Coastal and marine	advice and education	x		x	x		x	x	x	Existing Council programme
	statutory planning	x		x	x		x	x	x	Existing Council programme
	enforcement of coastal plan rules	x		x	x		x		x	Existing Council programme
	monitoring of consent conditions	x		x	x		x		x	Existing Council programme
	monitoring of estuarine and rocky shore	x		x	x		x		x	Existing Council programme
	managing nearshore fisheries									No mandate and no capacity, role of MFish
	areas of significant conservation value	x			x		x		x	Existing Council programme
	managing fisheries									No mandate and no capacity, role of MFish
	advocating for marine protection, including marine reserves	x			x				x	Action for biodiversity strategy
	establishment of marine reserves									No mandate and no capacity, role of MFish and DOC although likely to contribute to marine protection area planning forums
	management of marine parks and reserves									No mandate and no capacity, role of DOC (and MFish)
Planning	developing integrated plans for KNEs	x	x						x	Key action for achieving biodiversity gains on KNEs
Working with others	facilitating community access to biodiversity funds	x	x	x	x				x	Key action to achieve efficient biodiversity gains
	working with other agencies		x	x	x				x	Key action to achieve efficient biodiversity gains
Data management etc	monitoring state of the environment	x	x	x	x	x	x	x	x	Key action for achieve efficient biodiversity gains
	establishing system for data management for KNEs and biodiversity data	x	x	x	x	x	x	x	x	Key action for achieve efficient biodiversity gains
	storage of community data storage	x	x	x					limited	Key action for Biodiversity Strategy

5.4 Council's top strategic priorities for biodiversity

The Council can derive five clear priority areas from analysing the possible actions in Table 4 against Council's 'authorising legitimacy' and 'operational capacity'. This takes into consideration where the Council derives its authorisation for undertaking biodiversity work, the extensive scope for biodiversity work in the region, and the Council's existing capacity, skills and experience:

Key Native Ecosystems

The PRPS and LTCCP signal that the Council will prioritise its work on sites with regionally significant indigenous biodiversity values. The inventory of Key Native Ecosystems was the first step in identifying such sites. Prioritising of sites to focus on is a widely recognised pragmatic approach to biodiversity management. Prioritising sites is a means to ensuring that limited resources are directed to the most important sites first, or sites where the Council can make the most practical difference through working collaboratively with landowners on issues such as legal protection, fencing, revegetation, pest management, restoration planting, monitoring etc.

The Council has an obligation to rate payers to focus Council effort on securing biodiversity values on privately owned sites that are already legally protected in order to safeguard Council's investments in a site. Legal protection may be a legal covenant, memorandum of encumbrance or rules in a district or regional plan. Focusing on legally protected sites for increased resourcing may also act as an incentive for the legal protection of sites currently lacking in legal protection.

Building on existing Council programmes

Tables 2 and 4 highlight that the Council already has a number of programmes in place that have biodiversity benefits. Recognising the biodiversity component of these programmes and bringing a biodiversity 'focus' is an effective means of building on existing work in order to achieve biodiversity outcomes. This will be a particularly effective means of achieving protection and restoration of indigenous vegetation associated with the national priorities (see Table 5 below). For example, the Council is required to consider biodiversity, particularly the effects on ecosystems and species, under the Resource Management Act when considering resource consent applications. Council is also engaged heavily in education, advice and providing information. These are critical tasks in achieving the biodiversity vision.

Working with others

The PRPS signals that the Council will promote integrated management of indigenous biodiversity in the Taranaki region by working with other agencies, community groups, trusts and individuals.

The Council anticipates selecting a small number of high profile projects to work alongside other agencies or community groups to make a meaningful contribution to some flagship projects that will showcase Taranaki's biodiversity in a way that also promotes the value of different groups working together towards a common biodiversity goal. These projects will involve wider community interests, amplify the biodiversity work being undertaken by community groups, showcase good biodiversity protection techniques and contribute to a network of 'biodiversity-jewels' in the Taranaki 'crown'.

For example, Rotokare Scenic Reserve is the type of 'iconic' project that the Council is interested in supporting or partnering. The project is a long term one that is driven by the community and has existing support from the community. It meets several of the national priorities for biodiversity, has the potential to perform a 'halo' effect if work on adjacent forested areas is complementary to the management work within the reserve and it will provide people with an opportunity to learn about the impact of mammalian pests and so inspire positive action throughout the region. Other 'iconic' sites will achieve similar community and biodiversity objectives.

The challenge for the Council will be to develop partnerships with such community groups in a way that does not pit one group against another when resources are scarce, and to develop

relationships that recognise the strong sense of independence and community ownership (and therefore control) of their own projects. The benefits to the Council of being associated with regionally iconic sites will need to be carefully balanced with the level of benefits flowing to the groups as a result of that association.

Working with other agencies is particularly relevant to the marine environment where the Council's mandate is focused on the coastal marine area and managing it under the Resource Management Act. This alone will not fully achieve indigenous biodiversity outcomes as the landowner management of the coastal marine area rests with the Crown and carried out by the Department of Conservation (DOC) and the Ministry of Fisheries (MFish). The Council does not intend to take over or duplicate Crown management responsibilities, but could contribute to improved coordination between the agencies. The implementation of the Marine Protected Area Policy and Implementation Plan through the establishment of Marine Protection Planning Forums (MPPFs) may provide one such opportunity for assisting MFish and DOC to draw all the various players together.

Information management and information gathering

Systems need to be put in place for identifying strategic and relevant information to gather, particularly in regard to work undertaken on Key Native Ecosystems, and then develop the systems for managing the resulting information.

The Council could potentially serve the wider biodiversity community through supporting information gathering platforms that can be contributed to by the wider community. Further investigations on the most efficient means of supporting community gathered data could be made.

The Council has a longstanding philosophy of undertaking resource management from a position of sound scientific information. The biodiversity field is no different. It will be important to identify strategic indicators to measure progress with Council policies and to gather information for specific resource investigations to inform decision making. It will also be critical to establish baseline data in selected indicators in order to measure changes resulting from biodiversity management.

Council's Top Biodiversity Priorities[39]:

1. Develop and implement an integrated and co-ordinated biodiversity protection and enhancement programme with private landowners on prioritised Key Native Ecosystems (regionally significant sites).

2. Acknowledge the biodiversity component of existing Council programmes, particularly the provision of education and advice. Bring an increased 'biodiversity focus' to these programmes, especially as they relate to the national priorities, i.e. indigenous vegetation associated with 'threatened land environment types', wetlands and habitats for threatened species.

3. Where appropriate, facilitate improved coordination of biodiversity work undertaken by different agencies, trusts, community groups across Taranaki in order to build community capacity for the efficient and effective maintenance and enhancement of indigenous biodiversity. This will include the development of community based partnerships to achieve success with a small number of 'iconic' biodiversity projects.

4. Contribute to the management and development of biodiversity information systems relevant to Taranaki to ensure management decisions are based on sound scientific information and to enable the monitoring of outcomes for biodiversity in the region and the revision of priorities as necessary.

[39] *In no priority order.*

5.5 Addressing the national priorities

The list of actions from the New Zealand Biodiversity Strategy (NZBS) relevant to the Council are set out in Appendices II, IV, V and VI, with the relevant sections from the Strategy identified for each action. Addressing the top strategic priorities identified by the Council above will form this Council's contribution to achieving the NZBS.

Equally, contributing to the national priorities for protecting rare and threatened native biodiversity on private land will be achieved according to Table 5:

Table 5: How the Council's biodiversity work relates to the National Priorities

National Priorities:	Council will address through:
Indigenous vegetation associated with land environments (defined by Land Environments of New Zealand (LENZ) at level IV) that have 20% or less remaining in indigenous cover;	• Key Native Ecosystem programme for those regionally significant sites on threatened land environments. • Building on existing programmes – e.g. riparian programme and self help possum programme both occur on threatened land environments. • Working with others • Developing systems for gathering and recording information.
Indigenous vegetation associated with sand dunes and wetlands; ecosystem types that have become uncommon due to human activity;	• Key Native Ecosystem programme for those regionally significant sites that are either sand dunes or wetlands. • Building on existing programmes – e.g. general education and advocacy for wetlands in general. • Working with others e.g. assisting the Ngati Tara Oaonui Sandy Bay Trust. • Developing systems for gathering and recording information.
Indigenous vegetation associated with 'originally rare' terrestrial ecosystem types not already covered by priorities 1 or 2; and	• Key Native Ecosystem programme for those regionally significant sites that are 'originally rare' ecosystem types. • Gathering and recording information on 'originally rare' ecosystem types.
Habitats of acutely and chronically threatened indigenous species.	• Key Native Ecosystem programme for those regionally significant sites with threatened species. • Building on existing programmes – e.g. self help possum programme safeguards habitat important for kereru. • Working with others on sites important for threatened species, e.g. supporting kiwi projects in east Taranaki. • Developing systems for gathering and recording information on threatened species on private land.

6. Council's Biodiversity Action Plan

6.1 Introduction

This section contains the 'Action' part of the Strategy. The Action Plan contains actions either being undertaken or proposed to be undertaken by the Council.

The majority of actions are those that are already undertaken by the Council, and thus fit within existing budget levels. The biodiversity component of other actions will require a slight shift to give a greater 'biodiversity focus'. These too basically fit within existing budget levels.

Some proposed actions are not currently undertaken by the Council[40]. These will most likely be resourced within the existing budget through shifting resources around from projects that have been completed. Decisions on the overall level of resourcing will be made by the Council during the preparation of its annual plan and Long Term Community Council Plan.

The group or individual within the Council most likely to take the lead on each action has been identified. This may be subject to change following a review of how best to organise resources within the Council to ensure the most effective and efficient delivery of the Strategy actions.

All actions link back to methods in either the Proposed Policy Statement (see Appendix I), the Statement of National Priorities for Protecting Biodiversity on Private Land (see Appendix III) and/or the Biodiversity Strategy (see Appendices II, IV, V, VI).

Quite detailed and specific actions have been proposed in this section. However, the intention is that there will be sufficient flexibility to be able to regularly review and amend actions as experience in this field develops.

The Action Plan is structured according to the strategic priority areas identified in Section 5:

- Key Native Ecosystems;
- Biodiversity in existing Council programmes;
- Integrating with others working in the biodiversity field; and
- Information gathering and management.

[40] *These actions are indicated by a grey shading over the number of the action in the lists included in this section.*

6.2 Key Native Ecosystems

Purpose: This section outlines the proposed programme for advancing biodiversity management on Key Native Ecosystems (KNEs), sites that have been identified as being regionally significant for biodiversity. The programme includes actions necessary to:

1. **Identify** regionally significant sites, including a process for reviewing the list and adding new sites or removing sites.
2. **Prioritise** sites for management using a system that recognises both the regional values, the threats to them, and the degree of landowner willingness for ongoing management.
3. **Prepare Biodiversity Plans**, with an integrated package of actions.
4. Work collaboratively with landowners to **implement** actions in the Plans.
5. Ensure **coordination** between different sections of the Council, and between different agencies with an interest in the site.

6.2.1 Objectives of the Key Native Ecosystem programme

The objectives of the Key Native Ecosystem programme are :

1. To identify regionally significant sites;
2. To establish an integrated approach to management at prioritised KNE sites; and
3. To work with landowners to ensure regionally significant biodiversity values on KNEs are maintained, enhanced and restored.

6.2.2 Identifying Key Native Ecosystems

An initial identification has been made of regionally significant sites, or Key Native Ecosystems (TRC, 2006). The Key Native Ecosystem inventory included regionally significant sites on land, most regionally significant wetlands and some coastal sites.

Regionally significant sites have also been identified through the *Regional Freshwater Plan for Taranaki* (FWP) (i.e. rivers and streams in Appendix 1A of the FWP, wetlands through Appendix II of the FWP), the *Regional Coastal Plan for Taranaki* (i.e. areas of significant conservation value) and the *Inventory of Coastal Areas of Local or Regional Significance in the Taranaki region* (TRC, 2004).

	Actions for identifying Key Native Ecosystems	*Led by…*
1.	Prepare an inventory of Key Native Ecosystems in Taranaki	Policy and Planning Done - May 2006
2.	Prepare an inventory of regionally significant wetlands and rivers and streams with high biodiversity values through the Freshwater Plan[41] .	Policy and Planning Done - 2001
3.	Establish a process for adding to or deleting sites from the KNE list according to the following criteria[42]: • Presence of rare or distinctive indigenous flora or fauna • Representativeness of the area • Presence of threatened land environment (LENZ) • Ecological context of an area	Policy and Planning

[41] *Method 1, Proposed Regional Policy Statement for Taranaki*
[42] *Policy 4, Proposed Regional Policy Statement for Taranaki*

	Actions for identifying Key Native Ecosystems	*Led by…*
	• Sustainability of the area to continue to be significant in the future • Presence of indigenous vegetation on sand dunes, wetlands or 'originally rare ecosystem types'.	
4.	Investigate vegetation on threatened LENZ types not currently included in the Key Native Ecosystem inventory, and other remaining indigenous vegetation on threatened LENZ types, sand dunes, wetlands or 'originally rare' ecosystem types, or containing vegetation important for threatened species for possible inclusion in the inventory[43].	Biodiversity Officer
5.	Undertake site inspections of sites identified through the above process to assess if they should qualify as Key Native Ecosystems.	Biodiversity Officer
6.	Investigate nationally and regionally 'originally rare' ecosystems in Taranaki to ensure all are adequately represented in the KNE inventory. This may follow research being undertaken at a national level[44].	Biodiversity Officer
7.	Review the Inventory of Coastal Areas of local and regional significance in the Taranaki region, and the coastal plan to identify those sites of significance for biodiversity that need to be recognised in the KNE inventory.	Policy and Planning Scientific Officer - Marine.
8.	Establish criteria and a process for identifying regionally significant rivers and streams for biodiversity, and their possible inclusion in the KNE inventory and programme, utilising a range of tools including exploring the potential for fresh water fish modelling.	Policy and Planning Scientific Officer - Freshwater
9.	Consider during the five-year review of the Freshwater Plan, the inclusion of additional rivers, streams or reaches of regional significance for biodiversity[45].	Policy and Planning
10.	Review the KNE inventory regularly and information it contains.	Policy and Planning Biodiversity Manager Biodiversity Officer

6.2.3 Prioritising Key Native Ecosystems for action

The Council's Key Native Ecosystem inventory includes 155 sites, 99 of which are partially or completely privately owned. Prioritising which of these to focus additional management on is a pragmatic approach that the Council will use to target sites where the greatest amount of biodiversity protection can be achieved in the most cost effective manner. Sites where there is a high degree of landowner willingness to take the management of their KNE to the next level will be top priority. A desk top exercise is proposed to assist this ranking based on existing information recognising that further survey work of some sites may be required.

	Actions for prioritising Key Native Ecosystems	*Led by…*
11.	Prioritise Key Native Ecosystem sites according to measures of their ecological value (such as, but not limited to, size, presence of threatened species, threatened land environment, habitat complexity etc.)and on the basis of current or required management to address threats to their biodiversity values.	Biodiversity manager and Team
12.	Keeping the above prioritisation in mind, prioritise for action those Key Native Ecosystem sites where there is the greatest level of landowner willingness to undertake biodiversity management, or where there is strong community enthusiasm.	Biodiversity Manager
13.	Of those highlighted sites, identify those that are already fenced, legally protected and in the self-help possum control programme, as these are the ones most likely to be ready for the next level of management.	Biodiversity Manager
14.	Provide information to all landowners of privately owned KNEs about the KNE programme and opportunities for them.	Biodiversity Manager
15.	Explore other techniques such as geospatially modelling methods for assessing regionally significant sites.	Biodiversity Officer Policy and Planning

[43] *New Plymouth District Council are undertaking this work for their district.*
[44] *Contact for national research = Susan Wiser, Landcare, Lincoln*
[45] *Method 10, Regional Freshwater Plan for Taranaki*

6.2.4 Planning for Key Native Ecosystem site management

Management actions required for Key Native Ecosystem sites will vary from site to site. Planning the management at each site is important to ensure that all aspects of management are considered (e.g. it is no good killing the predators if meanwhile Old Man's Beard is smothering the canopy). Developing a plan of the required management actions will:

- provide the landowner with a clear idea of what management is required to sustainably manage the site for biodiversity purposes;
- show landowners what tasks they can do, and what tasks Council staff can assist with;
- will help facilitate coordination between Council staff;
- may help facilitate coordination between agencies with an interest at the site, or expertise to offer;
- will set out what monitoring is required at a site;
- will clearly define roles and responsibilities so ensure responsibilities area allocated for the various management actions; and
- will be used to assist landowners to access funds from the various funding pools available (e.g. QEII, TRC Environmental Enhancement Grant, district council heritage funds, Biodiversity Condition Fund etc).

Umutekai bush is a large semi-coastal forest remnant on the Pouakai ring plain just out of New Plymouth.

The Council has much experience and expertise in preparing riparian plans and comprehensive property plans. Using these as a model, the Council proposes to develop **Biodiversity Plans (Appendix IX).** These plans will vary according to the complexity of management needs at a particular site. They will be customised to suit the site and landowners.

Liaising with other agencies will be a critical part of the planning process as those other agencies may already have developed a relationship with the landowner, and it is important to streamline the management of biodiversity on that site to avoid doubling up of effort. Other agencies or community groups may also be helpful in terms of information gathering, e.g. Orthinological and Herpetological Societies.

	Actions for Biodiversity planning for KNEs	*Led by…*
16.	For each prioritised site needing a biodiversity plan, establish a KNE Biodiversity Plan preparation team, to include the following (as a minimum): a Land Management Officer, an Animal Pest Officer and the Biodiversity Officer.	Biodiversity Manager.
17.	Approach the landowner, inviting them to be part of the Key Native Ecosystem programme, noting that sites owned by landowners most willing to actively engage in biodiversity management will be prioritised.	Biodiversity Manager and Plan champion.
18.	Ensure integrated approach to planning for KNEs by involving other relevant agencies in the Biodiversity Plan preparation process. i.e. • KNE sites with any crown managed land adjacent, involve DOC. • KNE sites covenanted with QEII, involve QEII representative. • KNE sites included in the South Taranaki District Plan, involve QEII rep (contracted by STDC to undertake their SNA work). • KNE sites included in the New Plymouth District Plan, involve NPDC. • KNE sites that have been included in primarily because of existing species management, e.g. mudfish sites, notoreas moth sites etc, involve DOC.	Biodiversity Manager

	Actions for Biodiversity planning for KNEs	*Led by…*
	DOC most likely to take a lead role in these sites given previous involvement. • Where appropriate, recruit assistance from groups with ecological expertise, e.g. Herpetological Society.	
19.	Arrange for a site visit of the Biodiversity Plan preparation team.	Biodiversity Manager
20.	Develop a draft 'Biodiversity Plan' (Appendix IV). Plans to include: • Information on values • Information on threats – known and suspected • Aerial photo of site showing extent of fencing (existing and proposed), proposed revegetation, proposed location of pest control, monitoring etc. • List of management tasks required • Tasks required to secure legal protection (district or regional rules, covenant, encumbrances etc) • Fencing requirements • Planting/re-vegetation requirements • Animal /plant pest control recommendations • Monitoring requirements/recommendations. Relate monitoring proposed to management actions proposed, e.g. vegetation plots to show changes with fencing, tracking tunnels to monitor changing predator numbers. • Actions that may be required to manage off-site inputs (e.g. to a wetland from adjoining land use) • Who will lead each action • Information for landowner on where to access funds etc. • A proposed timeframe.	Biodiversity Manager and team
21.	Circulate draft Biodiversity Plan for discussion with the landowners.	Biodiversity Manager

6.2.5 Implementing Biodiversity Plans

The key to implementing Biodiversity Plans for KNEs will be the council officer, allocated to 'champion' the plan, developing a good relationship with the landowner. The functions of the champion of the plan will be to work with the landowner on undertaking the management steps, and act as the key point of contact to liaise between the landowner and other council officers. The Plan champion will also liaise with other agencies where appropriate.

	Actions for implementing Biodiversity Plans for KNEs	*Led by…*
22.	Allocate one Council officer per site to 'champion' the Plan and coordinate implementation and reporting on progress with Biodiversity Plan actions.	Biodiversity Manager
23.	Develop a good relationship with the landowner	Biodiversity Manager
24.	Ensure integration between agencies that have an interest in KNEs by keeping the other relevant agencies informed and involved in implementing the Biodiversity Plans (see above). Ensure monitoring of KNE sites that are protected through a QEII covenant is coordinated with QEII.	Biodiversity Manager or specific plan champion.
25.	Facilitate landowner's access to the Council's Environmental enhancement funds, Council's KNE pest funds, Tree Trust, QEII, District Council funds and other funds such as the Biodiversity Condition Fund etc.	Biodiversity Manager or Plan champion to liaise with appropriate officer.
26.	Ensure actions relating to the implementation of the Biodiversity Plan are recorded in the database (once established) or on R2D2 (in the meanwhile).	Biodiversity Manager or Plan champion to liaise with appropriate officer.
27.	Apply for Biodiversity Condition funds from the Department of Conservation for the implementation of a suite of Biodiversity Plans.	Biodiversity Manager and team
28.	Ensure historic information on files on regionally significant wetlands are scanned to Frodo, and linked to biodiversity database (once developed).	Corporate Services
29.	Update the actions in the Biodiversity Plan annually.	Biodiversity Manager to liaise with appropriate Officer.
30.	Recognise Key Native Ecosystems in Animal and Plant Pest Management Strategies.	Policy and Planning Done - 2007

	Actions relating to providing information and advice for KNEs	
31.	Review information sheets and guidelines available from the Council on retaining and enhancing biodiversity in KNEs.	Information Officer
32.	Identify gaps in information sheets and develop information to fill those gaps specifically related to KNEs, e.g.: (a) information sheet in conjunction with District Councils and QEII on options for landowners to protect their KNE site, how to access funds, how to protect legally etc; (b) new pests and how to safeguard KNE from invasion, e.g. Argentine ants[46]; (c)how to manage KNEs and habitat with threatened species;and (d) pest animal and plant control techniques.	Information Officer Policy and Planning
33.	Ensure information on KNEs available on TRC website.	Information Officer
34.	Investigate the suite of financial incentives available for the protection of KNEs, such as grants, subsidies and rate relief, the barriers to the use of these, what has worked and what could work better[47] and how to ensure funding is sustainable into the future.	Policy and Planning

6.2.7 Measuring progress with the KNE programme

The Council proposes to report annually on the progress with implementing the Key Native Ecosystem programme through a 'Biodiversity Significant Activity Report'. A system will be developed for monitoring progress with the preparation and implementation of the Biodiversity Plans.

Table 6 Current state of Key Native Ecosystems

Indicator	Number (as at Aug 07)
Total number of Key Native Ecosystems	155
Number that have some private land	99
Number that are fully fenced	55
Number in the self-help possum programme	49
Number with other pest animal programmes	19
Number in public ownership or with some form of formal protection agreement	102

Proposed performance indicators:

- Number of KNEs with a Biodiversity Plan.
- Progress with management recommendations from the Plans.
- Change in the number, or area (ha) of KNEs under formal protection (legal covenants or rules in district or regional plans).
- Number, or area (ha) under a sustained animal pest control programme (i.e. including area within the self help possum control programme).
- Number of KNEs that are fully fenced.
- Number of KNEs in receipt of biodiversity funds (from a range of sources – Council funds, district council funds, QEII, central government funds etc).
- Change in biodiversity condition of specific sites that are being monitored through Biodiversity Plans.
- Change in biodiversity indicators across representative KNE sites (refer Section 6.5 actions).

[46] *Operational Plan for Pest Management Strategy for Taranaki: Animals*

[47] *Method 3, Proposed Regional Policy Statement*

6.3 Enhancing biodiversity component of existing programmes

Purpose: Biodiversity work, but its very nature, requires a 'whole of agency' approach. Practically every section of the Council undertakes some sort of biodiversity work, and recognising that everyone working in the Council contributes to the overall biodiversity work may require a slight cultural shift within the organisation.

The Council has a number of programmes already that contribute to biodiversity outcomes on private land, rivers, streams and wetlands, and in the coastal marine area in the region. However, there are opportunities for increasing the 'biodiversity focus' of these existing programmes.

In line with the national priorities, the Council will prioritise bringing an increased biodiversity focus to existing programmes where these are focused on threatened land environments, wetlands, sand dunes, 'originally rare' ecosystems or habitats for threatened species[48].

6.3.1 Objectives:

The objectives of the Council's biodiversity work generally will be:

1. To promote the maintenance, enhancement and restoration of indigenous biodiversity throughout the Taranaki landscape[49], particularly on threatened land environments. wetlands, sand dunes, 'originally rare' ecosystems and habitats (both indigenous and non-indigenous) important for threatened species;
2. To avoid, remedy or mitigate adverse effects on indigenous biodiversity from use and development of natural resources[50];
3. To work with landowners to identify opportunities to promote the protection or restoration of indigenous biodiversity through pest control, riparian plans or comprehensive farm plans, etc; and
4. To promote sympathetic management of the productive landscape that will safeguard or restore biodiversity values.

6.3.2 Building capacity in the Council

Maintenance of indigenous biodiversity covers a whole spectrum of activities across the entire Council's functions. Recognising biodiversity as part of the culture and ethos of the Taranaki Regional Council will be required in order for all staff to be able to identify and take up opportunities for undertaking biodiversity work within their own work area.

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[48] *National Priorities for protecting rare and threatened native biodiversity on private land.*
[49] *From Policy 1, Proposed Regional Policy Statement*
[50] *From Policy 5, PRPS*

	Actions to build biodiversity capacity in Council staff:	*Led by…*
35.	Encourage all Council officers to recognise the biodiversity component of their current work.	Directors of Operations and Resource Management
36.	Include biodiversity in the orientation process for new staff.	Human Resources
37.	Identify biodiversity training required for Council officers.	Directors and Supervisors
38.	Recognise and report on the Council's biodiversity work through the preparation of an integrated significant activity report on biodiversity achievements of the Council. This report will focus on achievements in the Key Native Ecosystem programme, biodiversity in existing programmes, achievements with working with others and progress on developing the systems to gather and store biodiversity information.	Policy and Planning
39.	Create a biodiversity team with representatives across the Council's functions to oversee the implementation of the Biodiversity Strategy and raise the profile of biodiversity in all areas of the Council's work.	Director of Operations

6.3.3 Policy development and review

The Council develops and reviews policies under the Resource Management Act and the Biosecurity Act. The following actions will assist the Council to integrate biodiversity actions into these other plans. This list of actions also identifies those areas of policy that could be reviewed to give a greater biodiversity focus or to provide the systems to streamline biodiversity actions.

	Actions when reviewing and developing policy:	*Led by…*
40.	Consider indigenous biodiversity during the interim review and statutory review of the regional freshwater, soil and coastal plans[51].	Policy and Planning
41.	Consider indigenous biodiversity during the review of the pest plant and pest animal management strategies[52].	Done - 2007
42.	Consider implications of threatened species recovery plans when developing policy and when considering consents.	Policy and Planning Consents
43.	Clarify the criteria for the Environmental Enhancement grant to enable the use of the fund for the protection and restoration of indigenous biodiversity on threatened land environments, sand dunes, wetlands and habitats for threatened species. Promote the use of this grant	Policy and Planning
44.	Review administration systems for bidding for and managing the Council's environmental enhancement grant and Tree Trust funds to simplify and streamline process.	Policy and Planning Land Management Tree Trust Coordinator
45.	Review the use of TRC encumbrances to safeguard resources put into a site by the Council to ensure these legal instruments are performing satisfactorily.	Policy and Planning
46.	Consider coastal and marine biodiversity when developing oil spill contingency plans.	Inspectorate

6.3.4 Information, advice and communications

Increasing people's awareness and changing attitudes and behaviours so that biodiversity is appropriately valued is critically important. The provision of information, advice and communications are key methods used by the Council to raise public awareness of issues and subsequently to lead to behavioural change. The Council has recently prepared a strategy to guide the Council's work generally in this field[53]. The following actions specifically target those biodiversity related tasks. The Council's school education programme also can make significant contributions to enhancing awareness of biodiversity.

Winners of the Council's 2007 Environmental Awards

[51] *Method 6, Proposed Regional Policy Statement*
[52] *Method 4, PRPS*
[53] *Communications Strategy, 2007 in prep*

	Actions for promoting biodiversity through information, advice and communications	*Led by…*
47.	Review information sheets and guidelines available from the Council on retaining and enhancing biodiversity. Maintain a database of biodiversity related information sheets.	Information Officer
48.	Identify gaps in information sheets and develop information to fill those gaps.	Information Officer
49.	In particular, ensure information sheets and guidelines are produced to promote: (a) the principles and practices for maintaining, enhancing or protecting indigenous biodiversity; (b) mechanisms for protecting natural areas; (c) importance and values of indigenous flora and fauna, particularly species that are locally rare or distinctive[54]; (d) the value of remnant bush areas, particularly on threatened land environments; (e) funding available for protecting remnant bush and wetlands from Council, QEII, district councils etc; (f) pest control (rabbits, hares, pest plants) for riparian restoration[55]; (g) the feral nature and 'pest' characteristics of goats[56]; and (h) techniques for constructing and maintaining in-stream structures in a manner that avoids or reduces adverse effects on instream values such as fish passage[57]; (i) the non-fishing effects on marine biodiversity – e.g. the impact of plastic, sedimentation on marine biodiversity; (j) guidelines for managing threatened species on private land (with information from DOC); (k) the values of small streams and benefits from their retention and protection; (l) wetland restoration or creation– where to access funds, what to plant etc.	Policy and Planning Land Management Information Officer
50.	Ensure information is provided on TRC website. Develop a biodiversity component on the website. Provide information such as funding sources, director of expertise, links to biodiversity work happening in Taranaki.	Information Officer
51.	Promote awareness of the pest characteristics of pest plants and animals.	Animal and pest plant officers.
52.	Promote awareness of the importance of remnant wetland and bush areas, particularly on threatened land environments or where important habitat for threatened species during interactions with landowners.	Land Management
53.	Develop a communications campaign to raise the profile of Taranaki's riparian programme and increase implementation of the riparian plans by landowners. This would complement/add to the Riparian Implementation Strategy.	Land Management Information Officer
54.	Give out environmental awards to recognise individuals or groups who have contributed to the maintenance, protection or enhancement of indigenous biodiversity.	Information Officer
55.	Promote 'good news stories' of biodiversity through Council's Recount newsletter, through rural newspapers and through the internet.	Information Officer
56.	Promote community understanding of indigenous biodiversity issues through showcase projects, use of volunteers and general advice and information through field days etc.	Information Officer Education Officer Land Management
57.	Develop integrated school package on biodiversity on land – particularly threats and tree planting techniques. Work with DOC and other stakeholders, such as EMAP, as appropriate to ensure consistent messages are delivered.	Education Officer
58.	Work with individual schools and programmes such as EMAP to get them involved in the riparian restoration programme.	Land Management Education Officer
59.	Provide information to school groups on freshwater biodiversity (i.e. stream programme), and threats to biodiversity (i.e. pest fish, didymo) and encourage school based monitoring through programmes such as EMAP.	Education Officer

[54] *Method 9, PRPS*
[55] *Operational Plan for Pest Management Strategy for Taranaki: Animals*
[56] *Operational Plan for Pest Management Strategy for Taranaki: Animals*
[57] *Methods 9, PRPS*

	Actions for promoting biodiversity through information, advice and communications	*Led by…*
60.	Provide information to school groups on coastal biodiversity (i.e. rocky shore programme) and encourage school based monitoring through programmes such as EMAP.	Education Officer
61.	Seek opportunities to present talks to groups, in conjunction with other biodiversity agencies/trusts/community groups on biodiversity management and opportunities in Taranaki.	Biodiversity Team
62.	Investigate options for creating an on-line information sharing system to assist with two way information sharing.	Information Officer
63.	Provide input to industry developed education programmes that promote and encourage practical biodiversity outcomes.	Policy and Planning Education Officer Land Management

6.3.5 Sustainable land management

The Council's sustainable land management programmes provide landowners with advice and information on riparian restoration on the ring plain and sustainable management of the hill country.

The Council's environmental enhancement grant is used for the protection of regionally significant wetlands and for the protection of aspects of the environment identified as regionally significant.

Sustainable land management programmes are important components of the Council's biodiversity work. A slight shift in focus could accentuate the biodiversity benefits of these programmes.

	Actions when working with landowners on property plans	*Led by…*
64.	Promote the voluntary retirement and planting of riparian margins and indigenous vegetation forests through the Council's riparian programme recognising the biodiversity benefits of restoring indigenous vegetation on 'threatened land environments' such as the ring plain[58].	Land Management
65.	During the monitoring of implementation of riparian plans or farm plans, promote the voluntary identification, protection and restoration of indigenous biodiversity (i.e. remnant bush, wetlands, small streams, flow sources etc), particularly on threatened land environments or where important for threatened species habitat.	Land Management
66.	During the preparation and monitoring of riparian plans, record culverts and assess compliance with fresh water fish passage requirements.	Land Management
67.	Promote biodiversity principles during the preparation of comprehensive farm plans. This could include the protection, retirement or planting of areas of indigenous forest or scrub on highly erosion-prone land through property plans[59]. Advocate positive benefits for both biodiversity and carbon storage. Provide information on carbon sequestration programmes such as the Permanent Forest Sinks Initiative.	Land Management
68.	Provide plant materials at low cost to land users for land stabilising, soil conservation and riparian restoration, recognising the biodiversity benefits of these planting programmes.	Land Management

[58] *Method 8 and 10 of the Proposed Regional Policy Statement for Taranaki*
[59] *Regional Soil Plan for Taranaki, 2001*

	Actions when working with landowners on property plans	*Led by…*
69.	Ensure Land Management Officers have sufficient training through provision of appropriate training to be able to promote biodiversity protection through riparian and property plans, and then keep training up to date.	Land Management
70.	Assist landowners access funds to protect areas of biodiversity, particularly on threatened land environments or to protect habitat for threatened species, through the Council's environmental enhancement fund, the Tree Trust, etc.	Land Management
71.	Apply for Biodiversity Condition funds, or Sustainable Management Fund for larger projects, or projects grouped together.	Policy and Planning
72.	Establish a system to facilitate the recruitment and use of contractors and groups, e.g. schools, Rotary, sports clubs etc to assist landowners with riparian planting programmes.	Land Management.
73.	Investigate the suite of financial incentives available for the protection of indigenous vegetation other than KNEs, such as grants, subsidies and rate relief, the barriers to the use of these, what has worked and what could work better[60].	Policy and Planning
74.	Promote the use of local indigenous species for riparian restoration.	Land Management
75.	Consider providing landowners with assistance/information/support for plant and animal pest control in riparian areas.	Land Management Pest Management

6.3.6 Pest animal and plant management

Pest management programmes have historically focused on the problem of pests (animals and plants) on agriculture. Whilst this is still an important component of the programmes, there is also increasing awareness of the importance of pest management to safeguard biodiversity values.

The Council's self help possum control programme covers the majority of the ring plain. Remaining indigenous vegetation on the ring plain is therefore safeguarded from possum browse pressure with consequential biodiversity benefits. This is an important and valuable contribution to safeguarding biodiversity on threatened land environments.

	Actions when working with landowners on pest management	*Led by…*
76.	Provide support, encouragement and advice to landowners on possum control in the self help possum programme.	Animal Pest Officers
77.	Consider expanding the self-help possum programme to the remaining threatened Taranaki land environments with less than 20% remaining indigenous vegetation.	Director of Operations
78.	Provide pest control assistance on private land to protect habitat for threatened or regionally rare species, e.g. blue duck on private land in partnership with East Taranaki Environment Trust and Department of Conservation[61].	Animal Pest Officers
79.	Assist landowners to access funds to undertake pest control on areas of biodiversity (not already identified as KNEs), particularly on threatened land environments or to protect habitat for threatened species etc.	Land Management

[60] *Method 3, PRPS*
[61] *Operational Plan for Pest Management Strategy for Taranaki: Animals*

	Actions when working with landowners on pest management	*Led by…*
80.	Provide support, encouragement and advice to landowners to assist with pest plants.	Plant Pest Officers
81.	Explore opportunities for joint pest plant projects with DOC, community and district councils, particularly as a tool to encourage urban community groups to get active in urban biodiversity maintenance.	Plant Pest Officers
82.	Ensure Pest Management Officers have sufficient training through provision of appropriate training to be able to promote biodiversity during their interactions with landowners, and then keep training up to date.	Pest Management Supervisors
83.	Work with other agencies (DOC, Biosecurity New Zealand) on the surveillance, response and management of invasive species (e.g. didymo, undaria)	Director of Operations

6.3.7 When exercising legislative powers

The Council exercises legislative powers under the Resource Management Act and the Biosecurity Act. The inclusion of this table of actions in this Strategy clearly recognises the important component of the Council's overall biodiversity work achieved through the processing, monitoring and enforcing of resource consents, or through the enforcing of rules developed under pest management strategies.

	Actions when exercising legislative powers:	*Led by…*
84.	Apply regional rules (in existing regional plans) to regulate, mitigate or prohibit resource use and development activities that have potential or actual adverse environmental effects on indigenous biodiversity on land, freshwater or marine[62].	Consents
85.	Require sufficient information on resource consent applications to be able to adequately assess the effects of an application on biodiversity.	Consents
86.	Develop consent conditions that avoid, remedy or mitigate adverse environmental effects through the maintenance, enhancement and restoration of indigenous biodiversity on land or freshwater[63].	Consents
87.	Prepare biodiversity related 'practice notes' and include consideration of biodiversity issues in 'check lists' for consent processing[64].	Policy and Planning and Consents
88.	Enforce compliance with regional rules, consent conditions, pest management strategy rules that aim to safeguard or protect indigenous biodiversity.	Inspectorate Pest Plant Officers Animal Pest Officers
89.	Progressively address fish passage issues identified through the inventory of barriers to fish passage[65].	Scientific Officer – Fresh water
90.	Small stream modification, channelising and culverting: Develop guidelines for both applicants and consenting officers in terms of information they need to gather for such applications, stakeholders (such as Fish and Game) they need to involve and matters that should be considered in processing such applications.	Consents Scientific Officer – Fresh water Land Management Policy and Planning
91.	Explore the potential for tools such as fresh water fish modelling to assist in predicting potential impacts of activities on fresh water biodiversity.	Scientific Officer – Fresh water

[62] *Method 7 Proposed Regional Policy Statement*
[63] *Method 7, PRPS*
[64] *Method 7, PRPS*
[65] *Dams, Weirs and Other Barriers to Fish Passage in Taranaki (2001).*

6.3.8 Measuring progress with enhancing biodiversity in existing programmes

The Council proposes to report annually on the progress of biodiversity achievements of existing programmes through a 'Biodiversity Significant Activity Report'. This report will collate the biodiversity-related information from other significant activity reports (e.g. the report on land management, pest management, consents etc). A system will be developed for gathering this information across the various Council functions.

Proposed performance indicators:

- Hits on the biodiversity page of the Council's website.
- Number of riparian property plans or comprehensive farm plans prepared.
- Length of stream bank where riparian vegetation has been restored[66].
- Length of small streams piped, straightened or relocated for land improvement purposes (as a contra indicator)
- Change in hill country land that has been retired[67].
- Amount of indigenous vegetation remaining in the region (refer action in Section 6.5).
- Amount of wetland habitat remaining in the region (refer action in Section 6.5).
- Number of properties in self help possum programme with residual trap catch levels below 10% post treatment[68].
- Number of structures in streams with barriers to fish passage[69].
- Amount of money allocated from the Council's environmental enhancement grant.

[66] *Refer to targets relating to dairy farms for preparation and implementation of property plans in the Dairying and Clean Streams Accord - Regional Action Plan for Taranaki*
[67] *Refer to targets for area of indigenous forest on class VIe and VII privately owned land in the hill country in the Regional Soil Plan for Taranaki*
[68] *Regional Pest Management Strategy for Taranaki: Animals*
[69] *Dams, Weirs and Other Barriers to Fish Passage in Taranaki (2001).*

6.4 Working with others

Purpose: This section proposes that the Council is well placed strategically to add value to the business of biodiversity management in Taranaki through facilitating better coordination of all the various biodiversity related groups, agencies, trusts and individuals. Greater coordination will lead to greater efficiencies and lobbying power for national funding etc.

6.4.1 Objectives

1. To co-ordinate, contribute to and build community capacity for the maintenance and enhancement of indigenous vegetation and the habitats of indigenous species outside of public conservation land[70];
2. To facilitate communication between agencies and community groups involved in biodiversity[71];
3. To work with the community on a small number of iconic projects that will be flagship projects for biodiversity in Taranaki; and
4. To facilitate the involvement of iwi in biodiversity management.

6.4.2 Establishing or participating in biodiversity forums

Elsewhere around New Zealand, biodiversity forums are increasingly being used for promoting networking, information dissemination, integrated management including assessing partnership options for the integrated delivery of services and funding.

The Waikato Biodiversity forum for example is a partnership between research and management agencies, iwi groups, local authorities, private landowners and communities. The forum has published guidelines for prioritising biodiversity restoration, regularly runs community events and workshops, maintains a database of community biodiversity projects in the Waikato region and has developed a comprehensive website[72].

It is proposed that a first step in developing such a forum for the Taranaki region would be first to canvas views from the various groups working on biodiversity in the region on how such an approach may assist greater integration and efficiencies. The meeting held in April 2008 to canvas views on this draft Strategy made a start at such a discussion.

In the coastal/marine area, the Council is less likely to lead a forum than say for biodiversity on private land, but could advocate for a marine/coastal forum to be created to enhance coordination between agencies, and then participate in such a forum.

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[70] *Method 16, PRPS*
[71] *Method 16, PRPS*
[72] *Waikato Biodiversity Forum: A Vision for the Waikato. March 2006. Pamphlet for the Waikato Biodiversity Forum*

	Actions for developing or participating in biodiversity forums	*Led by*
92.	Promote integrated management of indigenous biodiversity in the Taranaki region by liaising and maintaining linkages with territorial authorities, DOC, Ministry of Agriculture and Forestry, Ministry for Fisheries, iwi, community groups and NGOs[73].	Policy and Planning Land Management Pest Officers
93.	Organise an initial meeting of agencies and individuals working on biodiversity across Taranaki to provide an opportunity for better networking, showcasing results of their projects and looking for opportunities to better work together.	Director of Operations Policy and Planning
94.	Host regular gatherings of biodiversity groups. Ensure forums, or workshops run, respond to a need in the biodiversity community and are focused with clear objectives and outcomes e.g. workshop on applying for funds, a workshop on recruiting and looking after volunteers etc, possibly leading a discussion on the development of regional restoration and protection goals.	Biodiversity Team
95.	Provide servicing and support to the Taranaki Tree Trust. Encourage the Taranaki Tree Trust to assist with implementing actions in this Strategy.	Tree Trust Coordinator
96.	Facilitate the Taranaki didymo regional group and assist with development of a regional response plan.	Director of Operations Policy and Planning
97.	Establish a joint approach to pest management with DOC to address such issues as data management for recording sightings, public awareness etc[74]. Particularly for pest fish and also explore options for joint approach for other species such as deer, goats, argentine ants, and pest plants of shared concern.	Policy and Planning Animal pest Officers Information officer
98.	Participate in working party with Fish and Game to investigate options for enhancing wetland for duck shooting/biodiversity purposes.	Director of Operations Policy and Planning
99.	Advocate to DOC and MFish the value of gathering together all those agencies/groups with an interest in better coordinating marine biodiversity in order for groups to meet, discuss marine biodiversity projects and identify opportunities for working more closely together to progress marine and coastal biodiversity initiatives.	Policy and Planning
100.	Participate in Fisheries Liaison Committee.	Scientific officer - Marine
101.	Participate in any forums arising from the 'Netting Coastal Knowledge' project on the South Taranaki coast.	Policy and Planning Scientific officer - Marine
102.	Participate where possible in the development of code of practice for the management of activities outside 12 nm limit. E.g. Ministry for the Environment working party that led to the Offshore Petroleum Industry Practices Accord.	Director of Resource Management
103.	Encourage the 'two way sharing' of information between groups who have skills and experience to share with others, e.g. Rotokare Trust have skills to share with other community groups, Tane's Tree Trust provides courses for landowners on indigenous forest establishment etc.	Biodiversity Manager
104.	Explore opportunities for supporting community groups through running workshops, supporting them to attend workshops etc.	Biodiversity Manager
105.	Investigate the feasibility/opportunities of organising a 'Taranaki Biodiversity' Conference.	Biodiversity Manager

6.4.3 Working with iwi on biodiversity

The Council recognises the importance of developing partnerships with iwi to progress biodiversity. As settlements under Treaty of Waitangi legislation progress, key roles for iwi in biodiversity protection and enhancement are being formally described. The roles include the traditional roles of Kaitiakitanga but increasingly, roles of partnership with the Crown and direct management of lands with biodiversity value are being identified and formalised.

[73] *Method 16, Proposed Regional Policy Statement*
[74] *Operational Plan for Pest Management Strategy for Taranaki: Animals (2007)*

The Council is in the process of developing and formalising relationships with iwi. This will help to better engage with iwi on biodiversity matters. Both the Council and iwi have 'kaitiakitanga' roles to play in the management of biodiversity and opportunities to work together will need to be sought.

	Actions for working with iwi on biodiversity	*Led by…*
106.	Incorporate biodiversity work into memorandums of understanding developed with iwi who have completed Treaty Settlements and other MOU such as with PKW.	Policy and Planning
107.	Seek opportunities to engage with, and assist iwi on biodiversity projects, e.g. Ngati Tama pest control operation and PKW Incorporation land.	Land Management Animal pest team Plant pest team
108.	Gather case studies to illustrate examples of kaitiakitanga in action. Use these for State of Environment reporting.	Information Officer
109.	Include iwi in monitoring of consents – e.g. Fonterra outfall discharge	Scientific officer – Marine

6.4.4 Establishing protocols with others

Improving communication with other agencies, groups, trusts or individuals involved in biodiversity work will primarily be undertaken on an informal basis. However, there are specific occasions where more formal protocols or agreements, e.g. MOUs, could help clarify roles and understandings.

Through establishing protocols (informal or formal) with community groups working on biodiversity, the Council has the opportunity to focus on capability building and identifying practical ways of supporting community initiatives. Identifying ways to make private and community initiatives more viable, effective and durable will be the challenge for the Council, but in the long term, probably the most effective means of stretching limited resources.

	Actions for establishing protocols with others	*Led by*
110.	Develop protocols for managing, and sharing information with other agencies and groups – particularly in relation to databases developed for storing information on significant sites[75].	Policy and Planning Biodiversity Manager
111.	Develop agreements between the different agencies for biodiversity work in general, and work in Key Native Ecosystems specifically (e.g. district councils, QEII, DOC). Agreements to cover: • Key contact per KNE; • Protocols for keeping other agencies informed; • Providing best possible information to private landowners; • Monitoring e.g. joint monitoring with QEII or DOC; and • Data management and sharing.	Biodiversity Manager
112.	Work with DOC to identify management needs for crown managed Key Native Ecosystems and for adjoining private land. Particularly for: Barrett Lake, Waihi stream wetland, Lake Waiau.	Policy and Planning Land Management
113.	Develop agreements with community groups working on 'iconic' projects.	Biodiversity Manager Policy and Planning

6.4.5 Working with others on 'iconic' projects

The Council is keen to work with other agencies or community groups on a small number of 'big-ticket' projects that will become high profile flagship projects that will showcase Taranaki's biodiversity and the value of different groups working together towards a common biodiversity goal. These projects will involve wider community interests, amplify the biodiversity work being undertaken by community groups, showcase good biodiversity protection techniques and contribute to a network of 'biodiversity-jewels' in the Taranaki 'crown'.

[75] *Method 16(b) PRPS*

Council involvement in such projects will be assessed on a case by case basis. The following criteria will be considered in this decision making:

- Based on sound scientific/ecological information;
- Recognised as having regionally significant biodiversity values;
- Strong community support and active involvement;
- An ability for the Council to assist by leveraging additional funds from the community or central government;
- The ability of the project to become a public showcase of Taranaki's biodiversity (i.e. educational opportunities, level of public access etc); and
- The benefits of investing ratepayer resources.

Council involvement in such projects will need to be undertaken sensitively noting:

- The strong sense of independence and community ownership (and therefore control) of their own projects;
- The overall balance of community based projects in the region so that groups are not placed in a situation of competing against each other when resources are scarce;
- The benefits to the Council of being associated with regionally iconic sites will need to be carefully balanced with the level of benefits flowing to the groups as a result of that association (note action above regarding establishing protocols with groups to formalise the relationship); and
- The need to ensure that new initiatives are encouraged, not stifled.

	Actions for working with others on 'iconic' projects	*Led by*
114.	Provide financial, technical advice and encouragement to priority 'iconic' projects in a way that builds community ownership.	Director of Operations
115.	Work with the Lake Rotokare Scenic Reserve Trust. Provide technical support for pest eradication programme and ongoing monitoring.	Director of Operations
116.	Provide support for the Matau/Purangi threatened species project.	Director of Operations
117.	Explore opportunities for leveraging additional resources into the Matemateonga/Whanganui National Park area	Director of Operations
118.	Explore opportunities for leveraging additional resources for integrated pest management in the Waitotara catchment (primarily for flood control purposes with spin offs for biodiversity, similar to the highly successful Coromandel multi-agency bid).	Director of Operations
119.	Contribute to the management of Egmont National Park, as an iconic site in Taranaki, through pest management work adjacent to the park in partnership with Department of Conservation and landowners.	Director of Operations
120.	Support the work of Ngati Tama at Whitecliffs, recognising the importance of the biodiversity at this site, and the value of assisting in greater coordination of effort at this site.	Director of Operations
121.	Recognise and market the riparian restoration being implemented by Taranaki landowners on the ring plain through the Council's sustainable land management programme, as the 'iconic' project that it is.	Director of Operations

6.4.6 Working with others to gather information

The Council is not the only agency or group interested in gathering biodiversity information (Section 6.5), and indeed, it is sensible and more efficient to work collaboratively with others to both identify information needs and gather information. The Council could also play a role in setting up and running information gathering platforms that the whole community could feed information into.

	Actions for working with others to gather information	*Led by*
122.	Work with Department of Conservation to progress recommended actions and information gathering ideas from the Netting Coastal Knowledge project.	Policy and Planning Scientific Officer – Marine
123.	Identify other groups and agencies in the community that are gathering biodiversity information (e.g. Ornithological Society, EMAP) and work with them to identify any ways that the Council can assist with the holding, analysing or reporting of the data, for example on the Taranaki Regional Explorer system. This may involve establishing agreements with groups or individuals about the data.	Policy and Planning Biodiversity Officer
124.	Encourage the involvement of central government and other relevant agencies such as universities in research or investigations relating to indigenous biodiversity issues, and seek the consolidation and sharing of existing and new information about indigenous biodiversity[76].	Biodiversity Officer Scientific Officers Freshwater and Marine
125.	Advocate for research into options for pest plant control in riparian restoration projects, particularly the long term control of environmental weeds such as convolvus, bind weed, old man's beard etc.	Biodiversity Officer
126.	Advocate for research into biodiversity management in Key Native Ecosystems.	Biodiversity Officer
127.	Identify opportunities for shared databases, or opportunities to input to databases held by other agencies, e.g. for recording weed distribution, marine pests etc. Establish protocols for providing such information. Explore opportunities to contribute to community based data management projects such as TERRAIN.	Biodiversity Officer

6.4.7 Advocacy

A key tool at the Council's disposal for biodiversity work is advocacy – at both the regional and national level. The following actions identify specific opportunities for advocacy.

	Advocacy actions	*Led by*
128.	Advocate for additional funds for biodiversity, for long term sustainable funding for regional projects and the need to simplify criteria and process for obtaining biodiversity funds.	Policy and Planning
129.	Continue to advocate for tools and sensible policy approach from MfE and DOC in relation to managing indigenous biodiversity on private land.	Policy and Planning
130.	Advocate for the protection of freshwater biodiversity values through the Water Programme of Action[77].	Policy and Planning
131.	Advocate the sustainable use of the marine environment[78].	Policy and Planning
132.	Advocate for appropriate biodiversity management on Crown land and land owned by local government.	Policy and Planning
133.	Advocate that Marine Protected Area Planning Forums are established at a scale most appropriate for meaningful input from the community.	Policy and Planning Submission – August 07
134.	Advocate, subject to community views, for a Taranaki wide approach for establishing a network of areas that protect marine biodiversity in the Taranaki region through a mosaic of marine reserves, marine parks, mataitai, taiapure, seasonal closures and area closures to certain fishing methods.	Policy and Planning Scientific Officer - Marine
135.	Advocate for the maintenance and protection of biodiversity through making submissions on activities that have the potential to affect biodiversity, e.g. on planning applications adjacent to KNEs	Policy and Planning
136.	Work with other regional councils to identify areas for collaboration for more effective management of biodiversity, e.g. databases, research priorities, leveraging research and reporting on national priorities.	Director of Operations. Policy and Planning.
137.	Advocate for the channelling of carbon mitigation money into biodiversity projects.	Policy and Planning

[76] *Method 15, Proposed Regional Policy Statement*
[77] *Action 2.1a NZBS*
[78] *Method 12, PRPS*

	Advocacy actions	*Led by*
138.	Advocate for better integration of national and regional data management systems, particularly for geo-spatial information.	Policy and Planning
139.	Consider advocating to district councils that where appropriate, the harvesting of indigenous tree species that have been planted for timber purposes be permitted, in a manner that still safeguards biodiversity values.	Policy and Planning
140.	Advocate for research institutions to undertake research in Taranaki through the promotion of a research and monitoring programme for biodiversity research in Taranaki.	Biodiversity Officer

6.4.8 Measuring progress with working with others on biodiversity programmes

The Council proposes to report annually on the progress of actions in this Strategy through a 'Biodiversity Significant Activity Report'. A system will be developed for gathering this information, and will rely heavily on case studies to illustrate examples of the Council adding value through facilitating greater networking and communication between agencies and community groups.

Proposed performance indicators:

- Level of funding brought into the region for biodiversity work through greater coordination between the groups.
- Number of biodiversity forums/meetings/workshops run annually and who attended.
- Feedback from form/workshop attendees
- Submissions made to other agencies to advocate for biodiversity outcomes.
- Number of formal partnerships/protocols/memorandums established.
- Progress with 'iconic' biodiversity projects (recognising and acknowledging the different levels of commitment and contributions to the project).

6.5 Information management, monitoring and information gathering

Purpose: Biodiversity management, like all other aspects of resource management, relies on having good systems for gathering and managing data and information. It is important to clearly identify what information is required to be able to monitor progress with biodiversity policies and actions. Specific resource investigations may be required to progress the identified priority biodiversity tasks.

This section sets out steps the Council anticipates making to develop the systems required to manage data and information and to undertake specific biodiversity related investigations and monitoring.

6.5.1 Objectives

1. To establish internal systems, or utilise external data systems, for managing information about biodiversity management both on Key Native Ecosystems and more generally;
2. To gather information on biodiversity to inform future reviews of Council policy; and
3. To monitor changes in biodiversity.

6.5.2 Managing biodiversity data and information

The Council has a number of databases that it uses to manage its work. Furthermore, many areas of work are digitalised and represented by GIS polygons. There are different types of information that need to be managed for either further analysis or to record information on management actions undertaken at a particular site. This section sets out the actions necessary to establish a system for managing biodiversity data – both generated by the Council and also exploring ways to incorporate information gathered by other groups (see Section 6.4.5).

	Actions for establishing a database to manage biodiversity information	*Led by…*
141.	As an interim measure, organise for additional KNE sites that are being actively worked on to be added to the R2D2 database to hold the information on what has been done by the Council at that site.	Policy and Planning
142.	Clearly establish needs/wants from a biodiversity database internally for the management of information relating to the management at KNE sites (including regionally significant wetlands and regionally significant coastal sites locations. Canvas other Councils. Obtain input from all biodiversity sections of the Council (Land Management, Pests etc).	Policy and Planning Biodiversity Officer
143.	Establish biodiversity database or data managing system for managing information on Key Native Ecosystems.	Corporate Services
144.	Develop a protocol to guide management of information on Council's biodiversity database (e.g. protocols for adding new information, for making some information public whilst protecting privacy rights, use of external groups etc).	Policy and Planning
145.	Clearly establish needs/wants from a biodiversity database for other information for non-KNE biodiversity work and then develop such a data management system.	Policy and Planning Biodiversity Officer Corporate Services
146.	Evaluate use of national databases (e.g. NZ Biodiversity Recording System) for regional biodiversity data.	Policy and Planning Biodiversity Officer
147.	Explore feasibility of incorporating community biodiversity data (such as gathered by Orthinological Society, Herpetological Society, EMAP etc) into Council's biodiversity database, once established, or onto national databases where appropriate. Explore ways of storing geo-spatial community data in Taranaki Regional Explorer.	Policy and Planning Biodiversity Officer Corporate Services

	Actions for establishing a database to manage biodiversity information	*Led by…*
148.	Update (through a web based database and revised report) database of known fish passage barriers.	Freshwater Biologist
149.	Explore feasibility of amending current GIS system to facilitate the capturing of polygons (remnant bush and wetlands) as a separate GIS layer. Design system to enable annual reports of extent of these ecosystem types covered by riparian plans.	GIS coordinator
150.	Explore the ability of extracting polygons on riparian plans (in pdf) of remnant bush/wetland areas that have been deleted from the regional layer, and creating a separate GIS layer with this information.	GIS coordinator
151.	Ensure areas set aside for biodiversity purposes are digitised and held on a GIS layer to enable reporting on the extent of area retired for biodiversity. This would also include QEII sites, Nga Whenua Rahui sites, Permanent Forest Cover Sink Initiative covenants etc.	GIS coordinator
152.	Explore opportunities, and the appropriateness, of providing biodiversity data to external data management systems (such as the NIWA fresh water fish database currently used for fresh water fish data) such as the threatened species databases, national vegetation survey archive, national herbaria, five minute bird count database etc.	Biodiversity Officer
153.	Review information gathered in riparian plan preparation and monitoring, e.g. 'existing' vs 'proposed' vegetation, 'exotic' vs 'indigenous'.	Biodiversity Officer

6.5.3 Monitoring biodiversity

The Council gathers information for reporting on the State of Environment. Through the preparation of Biodiversity Action Plans for Key Native Ecosystems, outcomes of biodiversity management actions at specific sites will be monitored. State of Environment monitoring of regionally significant sites will need to include both managed and unmanaged sites.

	Monitoring biodiversity actions:	*Led by…*
	Terrestrial biodiversity	
154.	Develop a State of Environment monitoring programme for biodiversity generally and across the KNEs (i.e. broader than monitoring individual site responses to biodiversity management actions will be included in the Biodiversity Action Plans). Ensure consistent with national monitoring programmes.	Biodiversity Officer.
155.	Determine a set of biodiversity indices or indicators to be used to monitor changes in biodiversity condition of KNEs.	Biodiversity Officer.
156.	Monitor the area covered by production forestry, soil conservation planting and indigenous forest through analysis of either the aerial photographs at the 25 hill country sites, or using the land cover database[79].	Policy and Planning (contracted out to Landcare Research)
157.	Monitor changes in land use, and implications for biodiversity restoration in the hill country, through evaluating implementation of comprehensive farm plans.	Land Management (once GIS capability established).
158.	Monitor changes in indigenous vegetation through comparison of Landcover databases 1 and 2, noting qualifiers that go with comparing these two datasets, use of satellite imagery in conjunction with New Plymouth District Council or through an analysis of the latest aerial photos.	Land Management Policy and Planning
159.	Investigate methods for monitoring the biodiversity values of the self-help possum control programme.	Biodiversity Officer

[79] *Regional Soil Plan for Taranaki, 2001*

	Freshwater biodiversity monitoring actions:	
160.	Monitor effectiveness of consent conditions for maintaining native fish diversity through provision of fish passes.	Scientific officer – Freshwater.
161.	Monitor freshwater biodiversity through SEM of invertebrate communities. Explore use of koura as indicator of biodiversity for State of Environment reporting[80].	Scientific officer – Freshwater.
162.	Monitor changes in wetland distribution following each new aerial photograph run.	GIS coordinator
163.	Establish a programme to monitor the extent of remaining habitat for key species of native fish (e.g. whitebait, eels etc).	Scientific officer – Freshwater.
	Coastal/marine biodiversity monitoring actions:	
164.	Continue estuary and rocky shore SEM work.	Scientific officer - Marine
165.	Continue monitoring of biodiversity impacts of coastal consents.	Scientific officer - Marine

6.5.4 Biodiversity resource investigations

This section sets out those one off specific resource investigations identified as necessary for establishing a solid scientific baseline of biodiversity information to inform management decisions.

	Resource investigations	*Led by…*
166.	Develop and maintain list of possible resource investigations that would be useful for biodiversity management in Taranaki and use these to advocate for appropriate research to be undertaken through FRST or to advocate for research to be undertaken within the region by universities and other research organisations.	Biodiversity Officer
	Terrestrial resource investigations	
167.	Collate all existing research on indigenous biodiversity in Taranaki into an easily searchable inventory, identify information gaps and establish protocols for keeping current.	Biodiversity Officer
168.	Investigate the indigenous biodiversity values of exotic pine plantations in Taranaki – initially through a literature review.	Biodiversity Officer
169.	Investigate biodiversity response to riparian restoration programme.	Biodiversity Officer and student project.
170.	Investigate biodiversity values of 'scrub' vs secondary forest.	Biodiversity Officer
171.	Investigate biodiversity of plants, some macroinvertebrates, mesofauna, nematodes and microbes among different levels of dairy intensification and management approaches.	Biodiversity Officer
172.	Incorporate biodiversity information from other agencies, and community groups (e.g. from Orthinological Society) into Biodiversity chapter of State of Environment report.	Policy and Planning Biodiversity Officer
173.	Investigate changes in possum behaviour, population dynamics and habitat use due to low possum densities on the ring plain.	Possible student research project
	Freshwater biodiversity resource investigations	
174.	Assess issue of the cumulative effect of piping small streams and land drainage in relation to potential loss of freshwater biodiversity.	Technical Services
175.	Assess the current macroinvertebrate monitoring programme for its applicability to biodiversity and whether additional monitoring might be needed – consider investigating a small number of SEM sites in more detail i.e., sample pools, runs, riffles to get a better indication of overall community.	Scientific officer – Freshwater.
176.	Update 1996 report on areal extent of wetlands in Taranaki region through examination of most recent aerial photographs, and consider the feasibility of ground truthing a proportion to check condition.	Temporary contract, 07/08.
177.	Review records on Freshwater Fish database to examine native fish diversity, particularly large galaxiids. Include this in State of Environment reporting. Explore feasibility of fresh water fish community modelling.	Freshwater Biologist

[80] *Note EMAP encourages schools to gather koura data during 'March Monitoring Month': www.emap.rsnz.org/KKDataEntry.php*

	Marine biodiversity resource investigations	
178.	Establish process to add to inventory of information known about the marine/coastal area and ensure inventory is regularly updated.	Scientific officer - Marine
179.	Work with DOC to identify information gaps from the inventory of coastal information and the 'netting coastal knowledge' that are particularly relevant for biodiversity management. Identify opportunities for undertaking such research in partnership with others – e.g. DOC, MFish, ASR. Possible ideas – extending drop camera reef mapping work from Cape Egmont south (building on work from Cape Egmont north).	Scientific officer - Marine
180.	Contribute to multi-agency sponsored student project examining movement of sand slug along coast. Advocate that project includes consideration of biodiversity values.	Technical Services – underway.
181.	Interrogate MFish data from a biodiversity perspective for State of Environment reporting.	Scientific officer – Marine Policy and Planning
182.	Work with DOC and MFish to undertake a gap analysis of current monitoring programmes undertaken by all agencies working in the coastal marine area in order to ensure a complete environment monitoring system is developed[81].	Policy and Planning Scientific officer - Marine
183.	Identify information gaps for regionally significant coastal and marine sites.	Scientific Officer – Marine Policy and Planning

6.5.5 Measuring progress with working with biodiversity information gathering and management

As discussed above, the Council proposes to report annually on the progress of actions in this Strategy through a 'Biodiversity Significant Activity Report'. This report will also report on progress with setting up systems for managing biodiversity data, establishing monitoring programmes and report on the outcomes of specific resource investigations.

The Council's 5 yearly State of Environment report will also be a critical vehicle for reporting overall trends in biodiversity across the region, and across land, freshwater and marine ecosystems. Input for the SOE report will be sought from all the various groups working on biodiversity in the region.

Proposed performance indicators:

- Development of biodiversity database for managing information on KNEs.
- Preparation of integrated biodiversity chapter for the State of Environment report.
- Progress with identified biodiversity resource investigations.

[81] *Action 3.1(e) NZBS*

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