

Indigenous biodiversity for the Taranaki region

**Regional Policy Statement for Taranaki
working paper**

Taranaki Regional Council
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July 2004

Executive summary

- The purpose of this report is to promote stakeholder feedback on issues relating to indigenous biodiversity in the Taranaki region. Stakeholder feedback will assist the Taranaki Regional Council in the development of objectives, policies and methods to maintain and enhance indigenous biodiversity in the Taranaki region that will be included in the Council's revised *Regional Policy Statement for Taranaki*.
- Biodiversity is the variability among living organisms and their habitats, including terrestrial, marine and other aquatic habitats, and the ecological systems of which they are part. This report addresses indigenous biodiversity issues and management responses in relation to the Taranaki region.
- Since initial human settlement, New Zealand's indigenous biodiversity has been in a state of decline – on both public and private lands, on land and in water. Today there is general acceptance that we need to halt that decline.
- The Taranaki Regional Council has a new function to establish, implement and review objectives, policies and methods for maintaining indigenous biodiversity. Likewise territorial authorities have a new function to control the effects of the use, development or protection of land for the purpose of indigenous biodiversity.
- Other agencies continue to have functions and responsibilities such as the Department of Conservation and Ministry of Fisheries.
- Taranaki contains approximately 290,000 hectares of indigenous forest and scrub, 530 named rivers, 717 wetlands and has a long 295-kilometre coastline. These are home to many rare, endangered and uncommon native plant, fish, bird and animal species.
- M•ori have also developed a relationship with native plants and animals, and to their habitats, which is woven into their culture and traditions.
- The areal extent of indigenous forests and scrub in Taranaki is in a steady state. However, land clearance and development in the past has resulted in the disproportionate loss of coastal and lowland forests and wetlands.
- The 'quality' of remnant habitats on both the public conservation estate and private land is continuing to be significantly degraded by pest animals such as possums and weeds such as old man's beard. Possums and other pests are also preying on native bird and animal species – 95% of juvenile kiwi are killed by mustelids and cats within the first six to nine months of leaving the nest.
- Overall the quality and quantity of Taranaki's fresh water is good and provides suitable fish habitat. Significant replanting of riparian margins, particularly on the ring plain is improving the condition of Taranaki waterways in terms of water quality and fish habitat. However, the presence of dams, weirs and culverts may be an issue where they prevent native fish from migrating upstream.
- Managing indigenous biodiversity crosses a number of administrative boundaries involving a plethora of different statutes and regulations. As a consequence, biodiversity management is fragmented and lacks a single unifying sense of purpose. Differing priorities between statutory agencies has also been a problem in the past.
- There are significant gaps in information on indigenous biodiversity available to local government. While the Department of Conservation maintains large national datasets

demonstrating that a problem exists, information on the presence, abundance and range of individual native plant and animal species, including change over time is either lacking or not readily available at a regional level. There is also a lack of information on marine biodiversity.

- The Department of Conservation is the key player in managing indigenous biodiversity in the Taranaki region and has programmes and undertakes activities promoting indigenous biodiversity. The Taranaki Regional Council, the three territorial authorities and others also have programmes and undertake activities promoting indigenous biodiversity.
- Notwithstanding the efforts of different key players, the Taranaki Regional Council proposes to increase its involvement in relation to indigenous biodiversity. Its management approach will be based upon what is lawful, efficient and effective, equitable, strategic, proactive and involves partnership with people.
- In terms of the Taranaki Regional Council's responsibilities, eight key actions are proposed for the Council's consideration. These actions largely 'build' on existing successful programmes, rather than new initiatives.
- Some of these actions – namely the review of the *Regional Policy Statement for Taranaki*, the administration of rules and resource consents that control adverse effects of use and development on the **coastal marine area and fresh water** (with district councils to continue to be responsible for **land**) and liaising and cooperating with other agencies – do not require additional work or commitment of resources by the Taranaki Regional Council. Other actions – namely the identification of regionally significant natural areas and monitoring of indigenous biodiversity – may require some additional work or commitment of resources. However, this is not believed to be significant.
- Three actions are proposed which potentially represent a major increase in the Taranaki Regional Council's contribution to maintaining and enhancing indigenous biodiversity in the Taranaki region. It is recommended that the Council consider:
 - extending the Environmental Enhancement Scheme to not only protect wetlands and enhance fish passage but also to protect other types of habitat on private land that are recognised as being regionally significant;
 - facilitating or undertaking pest and weed control to protect the values and enhance the condition of regionally significant natural areas on private land; and
 - providing an advisory extension service (in addition to the riparian and sustainable land management programmes) that promotes the protection of indigenous biodiversity with a particular focus on regionally significant areas on private land.
- This review is the start to a process reviewing Taranaki Regional Council responsibilities in relation to indigenous biodiversity. Further work need to be done to develop programmes and confirm costs etc. However, to 'kickstart' this process, the Council would appreciate your feedback on this report, the Council's proposed approach and the draft Regional Policy Statement provisions for indigenous biodiversity contained in section 6.3 of this report. Please forward your comments to:

The Chief Executive
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By **Friday 27 August 2004.**

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1. Introduction

1.1 Purpose

The purpose of this report is to seek early stakeholder feedback on the Taranaki Regional Council's review of its responsibilities in relation to indigenous biodiversity.

The review will look at the statutory responsibilities of key players involved in the maintenance of indigenous biodiversity, the state of indigenous biodiversity in the Taranaki region, the various issues relating to the management of indigenous biodiversity, who currently does what, and, finally, a proposed management approach for the Taranaki Regional Council in relation to the future implementation of its responsibilities for indigenous biodiversity. This review will also assist the Council in the development of objectives, policies and methods for indigenous biodiversity in its *Regional Policy Statement for Taranaki*, which is currently being reviewed.

1.2 Background

1.2.1 The New Zealand context

Biological diversity (or biodiversity) is the variability among living organisms, and the ecological complexes of which they are a part, including diversity within species, between species, and of ecosystems.

Indigenous biodiversity is a major element of New Zealand's distinctive landscape and identity. Native species such as the silver fern (ponga), kiwi, pohutukawa, cabbage tree (ti kouka) and whitebait (inanga) are national icons.

New Zealand's unique indigenous biodiversity is also internationally important. Along with other extraordinary species, we boast the world's only flightless parrot (kakapo), a bird with nostrils at the end of its beak (kiwi), a primitive frog that lays eggs that hatch adult frogs (*Leiopelma* species) and a large insect, which fills a role that small rodents play in other countries (giant weta).

Currently there is a review and inventory being undertaken of New Zealand's indigenous biodiversity. In New Zealand there are about 350 terrestrial vertebrate species, including



The silver fern or ponga

46 endemic land bird and 35 endemic sea bird species, approximately 2,000 endemic vascular plant species and 80,000 invertebrate species.¹ High percentages of New Zealand's indigenous species are endemic (ie, are found no where else) – a result of New Zealand's isolated evolution and the diversity of its land and seascapes. The high proportion of New Zealand's indigenous flora and fauna that is endemic is remarkable internationally. Both species of New Zealand bat are endemic, as are all four frog species, more than 90% of insects and marine molluscs, 80% of vascular plant species² and a quarter of all bird species.

New Zealand was one of the last places on earth to be settled by humans. Since that time, indigenous biodiversity has been in a state of decline (see Figure 1). In the last 700-800 years, humans and their accompanying pests have made extinct:

- 32% of native land and freshwater birds;
- 18% of sea birds;
- three of seven frog species;
- at least 12 invertebrate species (snails and insects);
- one fish, one bat and perhaps three reptile species; and
- 11 plant species.

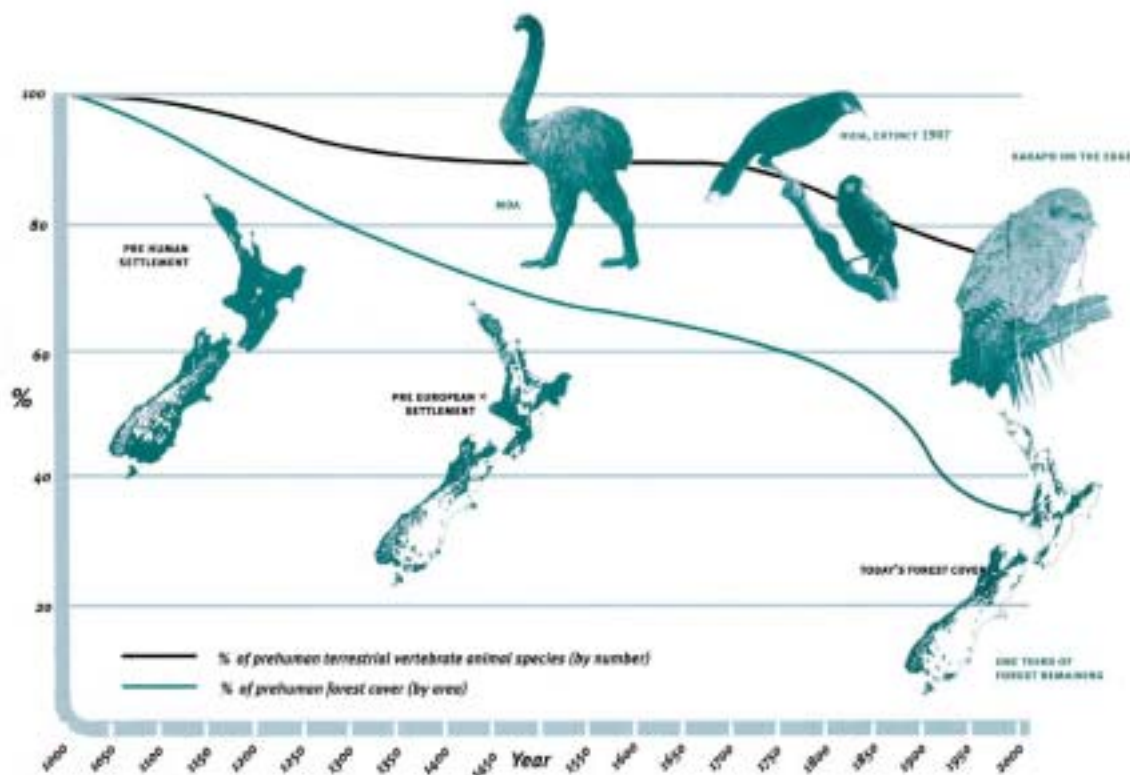


Figure 1: New Zealand's declining indigenous biodiversity

¹ Department of Conservation: 'The National Requirements of New Zealand's Nationally Threatened Invertebrates'. 2001.

² Vascular plants include ferns, flowering plants and trees, but do not include mosses and liverworts (of which New Zealand has over 1,000 species).

Changes in New Zealand's landscapes have also been dramatic. Approximately 63% of New Zealand's land area has been converted from native forests, wetlands and tussock land to farms, exotic forests, settlements and roads.

In response to New Zealand's decline in indigenous biodiversity, in the 1980s and 1990s the Government placed increasing emphasis in reforming the environmental protection and management legislation and administrative structures. Of particular importance was the establishment of the Department of Conservation in 1987 and the enactment of the Resource Management Act 1991, which includes a duty for those administering the Act to protect areas of significant indigenous vegetation and significant habitats of indigenous fauna.

As a result of these and other initiatives much is now being done to "turn the tide" on New Zealand's indigenous biodiversity. This includes the adoption of a national Biodiversity Strategy and increased funding for programmes by the Department of Conservation to manage and protect public conservation areas. Local authorities have or are in the process of putting in place a wide range of policies and programmes to protect and enhance indigenous biodiversity including incentives, grants, subsidies, information and advice and regulations. Many individual landholders are taking action to fence, plant, retire, manage and protect areas. However, recent changes in legislation and policy means that it is now timely to undertake a review of the Taranaki Regional Council's responsibilities for indigenous biodiversity.

1.2.2 The need to review Taranaki Regional Council's responsibilities for indigenous biodiversity

There is a need for the Taranaki Regional Council to review its management responsibilities for indigenous biodiversity. There have been significant changes in this area since the adoption of the Council's Regional Policy Statement and regional plans. In February 2000, the Government released its Biodiversity Strategy *Our Chance to Turn the Tide*. In brief, the Strategy establishes a national 20-year plan to "...halt the decline in New Zealand's indigenous biodiversity" and sets out a comprehensive range of actions for the Government to initiate or improve progress on in order to achieve this goal. In 2000, the Government also charged a Ministerial Advisory Committee to review and report on indigenous biodiversity on private land.

Subsequent to the adoption of the Biodiversity Strategy and the release of the Ministerial Advisory Committee's report,³ the Government has amended the Resource Management Act 1991 to broaden and increase local government responsibilities for biodiversity (refer section 2.1 below).

The Taranaki Regional Council is also in the process of reviewing the *Regional Policy Statement for Taranaki* (1994). While indigenous biodiversity was not explicitly identified as a 'stand alone' issue in the Regional Policy Statement, related policies and methods of implementation were included in issues pertaining to the actual or potential loss of areas of significant indigenous and other vegetation and habitats of indigenous fauna, the protection and restoration of instream values and surface water availability, the protection of wetlands and adverse effects on the natural character of the coastal environment. Since the adoption of the Regional Policy

³ Ministry for the Environment: 'Biodiversity and Private Land'. 2000.

Statement the Council has implemented a number of initiatives to protect or enhance biodiversity eg, the Council's pest animal and plant programmes, wetland protection programme and environmental enhancement grants. Rules relating to vegetation clearance on erosion prone land have been included in the *Regional Soil Plan for Taranaki*.

In light of recent Government initiatives on biodiversity, the Taranaki Regional Council's new responsibilities for indigenous biodiversity and the need to review its *Regional Policy Statement for Taranaki*, a review of indigenous biodiversity is timely.

In a recent 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.

Regional Policy Statement for Taranaki

The Regional Policy Statement is a statutory document that provides an overview of the issues of significance to the region, including the objectives, policies and methods to address those issues, and sets strategic directions for achieving integrated management.

The 'Regional Policy Statement for Taranaki', which was New Zealand's first, has now been operative for almost ten years. Under section 79 of the Resource Management Act, the Council must begin a review of its Regional Policy Statement no later than ten years after it became operative. This review, amongst other things, allows the Taranaki Regional Council to take into account 'change' factors over the last 10 years and assess the on-going relevance of the issues in the RPS and the effectiveness of its policies and methods.

Of note is that this report is the start of a planning process that will contribute to reviewing the Taranaki Regional Council's responsibilities for indigenous biodiversity. Other planning processes, particularly the review of the Council's regional pest management strategies under the Biosecurity Act 1993 (due to commence in 2005/06), will also contribute to this review.

1.3 Structure

This report is divided into seven sections.

Section 1 introduces the purpose, background, scope and structure of the report.

Section 2 outlines the principal statutes of relevance to the management of indigenous biodiversity.

Section 3 outlines the 'state' (ie, quality) of indigenous biodiversity in the Taranaki region based upon terrestrial (land), marine (sea) and freshwater ecosystems. M•ori cultural and spiritual values associated with indigenous biodiversity are also outlined.

Section 4 outlines the issues relating to the maintenance and enhancement of indigenous biodiversity. The issues range from actual or potential environmental pressures such as land clearance and pests to management issues such as the need for more effective integrated management and more information.

Section 5 provides a brief overview of who is doing what in the Taranaki region in relation to programmes and initiatives to maintain or enhance indigenous biodiversity.

Section 6 outlines the Taranaki Regional Council's preferred management approach hereon in relation to indigenous biodiversity. This section sets out the management principles that form the underlying precepts when developing policies or considering actions to maintain or enhance indigenous biodiversity. Key actions and draft objectives, policies and methods of implementation to be included in the revised *Regional Policy Statement for Taranaki* are also presented.

Section 7 presents the report's conclusions.

A definition of term's section is presented at the back of this report to assist readers in their understanding of the report. The appendices list rare and endangered native plants and animals in Taranaki and present a section 32 evaluation of management options to address indigenous biodiversity.

2. Statutory framework

Indigenous biodiversity issues cross a number of administrative boundaries involving a plethora of different statutes and regulations. This section identifies the principal statutes relating to indigenous biodiversity in the Taranaki region including the roles and responsibilities of the statutory agencies.

2.1 Conservation Act and National Parks Act

The Department of Conservation is the key player responsible for maintaining and enhancing indigenous biodiversity. This role is carried out under a number of different statutes, the two main statutes being the Conservation Act 1987 and the National Parks Act 1980.

The functions of the Department of Conservation are set out in section 6 of the Conservation Act and include:

- managing national parks and reserves for conservation purposes (ie, ‘public conservation area’);
- preserving as far as practicable all native freshwater species, and protecting recreational freshwater fisheries and freshwater fish habitat; and
- advocating for the conservation outside public conservation areas (ie, on private land).

Under Part IIIA of the Conservation Act, the Department of Conservation has adopted the *Conservation Management Strategy – Whanganui Conservancy*. The Strategy, amongst other things, sets out policies and management directions for the integrated management of all land and marine areas administered by the Department in the Whanganui Conservancy (which includes the Taranaki region).

The Department of Conservation also administers the National Parks Act. This Act deals with the management of national parks. In the Taranaki region, the Department of Conservation administers two national parks, these being the Egmont National Park and parts of the Whanganui National Park. These parks are maintained in a natural state and the public have right of entry.

2.2 Resource Management Act

2.2.1 Purpose and principles

With the enactment of the Resource Amendment Act 2003, regional and district council functions have been altered to increase their statutory roles and responsibilities for the maintenance of indigenous biodiversity.

The purpose of the Resource Management Act 1991, as set out in section 5 of the Act, is “...to promote the sustainable management of natural and physical resources.”

Section 6 of the Resource Management Act specifies matters of national importance for achieving the purpose of the Act. Under section 6 of the Act, “...all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall recognise and provide for the following matters of national importance:

- (a) *The preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development;*
- (b) *The protection of outstanding natural features and landscapes from inappropriate subdivision, use, and development;*
- (c) *The protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna;*
- (d) *...;*
- (e) *The relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga.”*

2.2.2 Functions of the Taranaki Regional Council

To give effect to the purpose and principles of the Resource Management Act, the Taranaki Regional Council has been given clear duties and functions, which are set out in section 30(1) of the Resource Management Act.

Prior to the enactment of the Resource Management Amendment Act 2003, the Taranaki Regional Council had limited responsibilities for directly managing indigenous biodiversity. Although many of the Council’s policies and programmes promote indigenous biodiversity, these responsibilities were derived indirectly through its functions relating to managing the adverse environmental effects on the coast, air quality, land, or water. With the amendments, the Council (and district councils, see section 2.2.3 below) has been given more explicit responsibilities for maintaining and enhancing indigenous biodiversity in their area.

In relation to indigenous biodiversity the Taranaki Regional Council now has the following functions:

- control the use of land for the purpose of maintaining and enhancing ecosystems in waterbodies and coastal waters⁴; and
- establish, implement and review of objectives, policies, and methods for maintaining indigenous biological diversity.

2.2.3 Functions of the district councils

Under the Resource Management Act, district councils focus on the environmental effects arising from the use of land. With the enactment of the Resource Amendment Act 2003, district councils have also been given explicit responsibilities for indigenous biodiversity. Under section 31(1)(b)(iii) of the Resource Management Act, district councils are responsible for “...the control of any actual or potential effects of the use, development, or protection of land, including for the purpose of ... the maintenance of indigenous biodiversity.”

The maintenance and enhancement of indigenous biodiversity on land has been recognised by Taranaki’s three district councils in their respective district plans.

⁴ Under the Resource Management Act the Department of Conservation is also a consenting authority for restricted activities in the coastal marine area.

2.3 Biosecurity Act

The Biosecurity Act 1993 is an Act to “...restate and reform the law relating to the exclusion, eradication, and effective management of pests and unwanted organisms”.

Under the Biosecurity Act, central government agencies (ie, the Ministry of Agriculture and Forestry, Ministry of Fisheries, Department of Conservation and Ministry of Health) are responsible for border control and surveillance and, along with regional councils may also be responsible for the eradication or management of harmful animals, plants and diseases.

Under the Biosecurity Act, regional councils are not necessarily required to be involved in pest management. Any involvement is now at the discretion of the regional council and is undertaken subject to the preparation of a pest management strategy. A pest management strategy empowers a regional council to exercise the appropriate enforcement and funding provisions of the Act.

The Taranaki Regional Council has prepared and implements two pest management strategies to address the control of 18 pest animal species and 24 pest plant species.

2.4 Wildlife Act and Wildlife Regulations

The Wildlife Act 1953, administered by the Department of Conservation, provides for the protection of all native mammals, most native birds, reptiles, amphibians and some terrestrial invertebrates. The Wildlife Regulations 1955 address the farming of species that are potentially detrimental to protected species.

Under the Wildlife Act all wildlife, as defined by the Act, is absolutely protected unless listed in the first six schedules of the Act.⁵ Indigenous wildlife not absolutely protected are:

- pukeko (except on the Chatham Islands), the grey duck and the spoonbill duck, which are declared to be game and may be hunted in open season;
- South Island weka (on the Chatham Islands only), and the Stewart Island weka (on islets off Stewart Island and in the Foveaux Strait only), which may be hunted or killed subject to the Minister of Conservation’s notification;
- mutton bird, which may be hunted or killed subject to the Minister of Conservation’s notification;
- black shag, harrier hawk and the white-eye, which are only partially protected; and
- little shag, the pied shag and the grey-faced petrel may be hunted or killed subject to the Minister of Conservation’s notification.

Section 53 of the Wildlife Act allows the Director General of Conservation to authorise the taking or killing of wildlife for certain purposes so long as that

⁵ Under section 57 of the Wildlife Act all wildlife is the property of the Crown, except for wildlife listed in the fifth schedule and wildlife lawfully taken or killed pursuant to the Act.

permission is not inconsistent with the protection status accorded by the Act. Section 53 has been used to grant permits to Tangata Whenua for customary and traditional use of wildlife, including parts of dead wildlife.

2.5 Forests Act

The Indigenous Forestry Unit of the Ministry of Agriculture and Forestry is responsible for the administration of Part IIIA of the Forests Act 1949. Under that Act, the Ministry is responsible for regulating sustainable harvesting of indigenous forests. The Act does not control clearance of indigenous forest for the conversion of land to alternative uses or cutting firewood for domestic use (provided a sawmill is not used).

2.6 Other statutes and regulations

Other statutes that may impact or impinge on the management of indigenous biodiversity include:

- **Wild Animal Control Act 1977:** This Act, administered by the Department of Conservation, applies to land of all tenures and provides for the control of wild animals generally, and for the eradication of wild animals locally. The Department's responsibilities include permitting and licensing to capture, control, keep or move wild animals.
- **Fisheries Act 1983:** This Act, administered by the Ministry of Fisheries, promotes the conservation and management of fisheries and fishery resources within New Zealand and New Zealand fishery waters.
- **Freshwater Fisheries Regulations 1983:** These regulations were originally made under the Fisheries Act 1983, and are now administered by the Department of Conservation pursuant to the Conservation Act. The Department's role is to manage and conserve freshwater fisheries and fishery resources in New Zealand and maintain free passage for freshwater fish. People who possess, control, rear, hatch or consign 'noxious' fish without authority are liable for a fine.
- **Whitebait Regulations 1994:** These Regulations, administered by the Department of Conservation, were made under the Conservation Act and permit and control the taking of whitebait.
- **Reserves Act 1977:** This Act provides for the acquisition, control, management, maintenance, preservation, development and use of public reserves. Both the Department of Conservation and district councils are significant managers of public reserves and parks in Taranaki.
- **Marine Reserves Act 1971:** This Act, administered by the Department of Conservation, provides for the setting up and management of areas of the sea and foreshore as marine reserves for the purposes of preserving them in their natural state as a habitat for marine life.
- **Native Plants Protection Act 1934:** This Act, administered by the Department of Conservation, provides protection for native plants.

- **Marine Mammals Protection Act 1978:** This Act, administered by the Department of Conservation, provides for the protection, conservation and management of marine animals.
- **Sugar Loaf Islands Marine Protected Area 1991:** This Act, administered by the Department of Conservation, provides for the setting up and the management of the Sugar Loaf Islands Marine Protected Area. The purpose of the Act is to protect that area of the sea and foreshore in its natural state as the habitat of marine life, and to provide for the enhancement of recreational activities.
- **Environment Act 1986:** Establishes the Ministry for the Environment, as the policy agency with overall responsibility for the development of environmental policy. The Ministry has overall responsibility for administering the Resource Management Act.
- **Queen Elizabeth the Second National Trust 1977:** The Queen Elizabeth the Second National Trust (QEII) is mandated under this Act to achieve the protection of privately-owned open space through covenants.
- **Trade in Endangered Species Act 1989:** This Act, administered by the Department of Conservation, regulates the export and import of specified endangered species or any product from these species.

Section 5 below outlines actions, programmes and initiatives of particular relevance to the maintenance of indigenous biodiversity.

3. Indigenous biodiversity in the Taranaki region

Extensive areas of the Taranaki landscape are covered by native forest and scrub. These areas, along with 530 named rivers, 717 wetlands and the coastal marine area, provide significant habitats for native plants and animals. However, some habitat types such as coastal and lowland forests and wetlands are relatively rare and are now confined to small fragmented areas. A large number of native plant and animal species are also now threatened or uncommon in Taranaki.

This section provides a brief overview of the 'state' of indigenous biodiversity in the Taranaki region based upon land, marine and aquatic ecosystems. M•ori cultural and spiritual values associated with indigenous biodiversity are also outlined.

3.1 Land areas and habitats

The Taranaki region encompasses approximately 723,610 hectares of land. While exotic ecosystems, such as clover and rye grass pasture, and increasing exotic forestry plantations, now dominate Taranaki, significant areas of indigenous vegetation still remain. The Taranaki Regional Council's state of the environment report⁶ notes that approximately 290,000 hectares or 40% of the region is in native forest and shrub land (Table 1).

Table 1: Taranaki vegetative cover

Land Cover Class	Hectares	%
Native forest	220,800	30.4
Native shrub land	69,300	9.6
Pastoral	414,400	57.1
Other	19,110	2.9
Total	723,610	100.0

The Taranaki region contains a variety of habitats for indigenous fauna. This variety is a result of Taranaki's diverse landforms (Figure 2 overleaf), climate, soils, indigenous vegetation, and human influences found in the region.

The eastern hill country contains a broad, near continuous tract of native forest on the rugged hill country that extends from the coast in north Taranaki through the countryside inland of Stratford to the Whanganui National Park.

The native hill country forests and regenerating scrub land are the most represented natural areas remaining in Taranaki.⁷ The native hill country forests are relatively uniform in composition and, apart from beech forests on narrow ridges, are mostly composed of broad-leaved trees. Tawa and kamahi are the most common trees, with frequent northern rata, hinau, rewarewa and mahoe. Podocarps are scattered throughout these forests, with frequent rimu, and some totara, kahikatea and matai. Secondary growth forest and scrub, on land that was once farmed, are mostly dominated by manuka and ferns.

⁶ Taranaki Regional Council: 'Taranaki – Our Place, Our Future'. 2003.

⁷ Department of Conservation: 'Wanganui Conservancy – Conservation Unit Summary for Taranaki Region'. 2000.

Near the northern coast the native forests are more diverse with kohekohe, puriri, tanekaha, karaka and mangleao. Again there are extensive areas of secondary growth forest and scrub.

Coastal and lowland forests and wetlands, which once covered the Taranaki ring plain, coastal terraces and frontal hill country have mostly been cleared or have been reduced to isolated, often small remnants. Outside the Egmont National Park, these remnant patches range in size from small groves of trees to several hundred hectares and are mostly in private ownership.

In the Egmont National Park intact altitudinal sequences of forest remain – ranging from lowland forests to alpine herbfields.

Taranaki native forests and scrubland are home to one of the country’s three major populations of North Island brown kiwi.

These and other areas also support a large number of native plant and animal species, including native reptile (geckos and skinks) and frog species, large numbers of bats and robins, and smaller numbers of New Zealand falcon, kaka and kakarika.

Despite the extensive areas of habitat in the Taranaki region, a large number of native plant and animal species are identified as threatened. Twenty-six native plant species and 26 native bird and animal species present in Taranaki are identified as being threatened or uncommon. These species include the kokako, brown kiwi, fernbird, spotless crane, and some species of gecko and skink (refer Appendix I).



The kokako

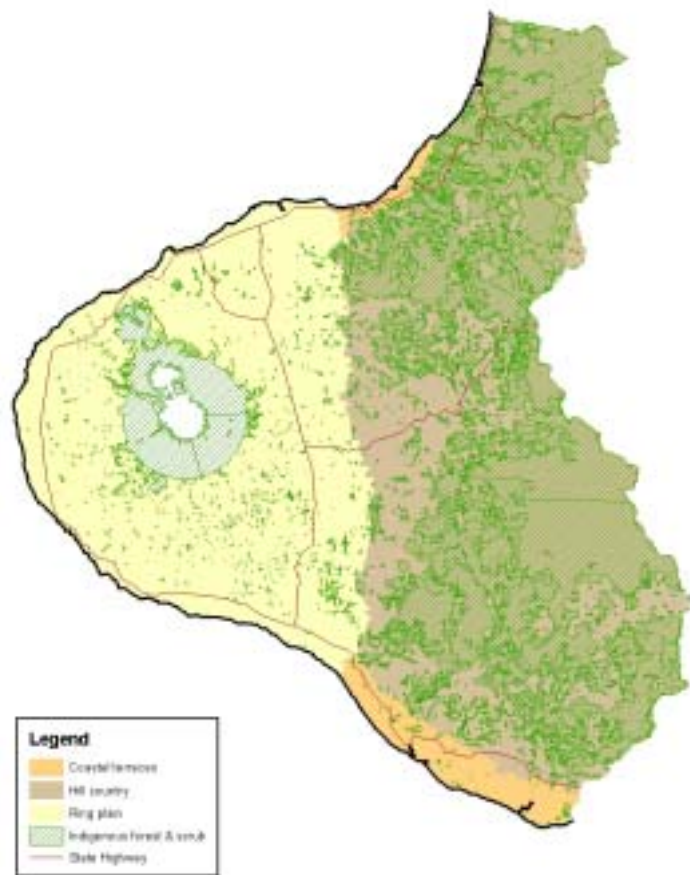


Figure 2: Taranaki landforms, indigenous forest and scrub

The Taranaki region can be divided into five ecological districts based upon areas that have landscape features in common (Figure 3).

Figure 3 shows the current distribution of threatened or uncommon animals and plants in the region by ecological district. Note that the range of species per ecological district is a reflection of the existing range of intact or available habitats and does not reflect past or potential future distributions.

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 weeds, grazing and other influences. These dunes are host to six threatened and uncommon indigenous plant species – of which the alpine plant *Sebaea ovata* is critically endangered.⁸ 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.⁹

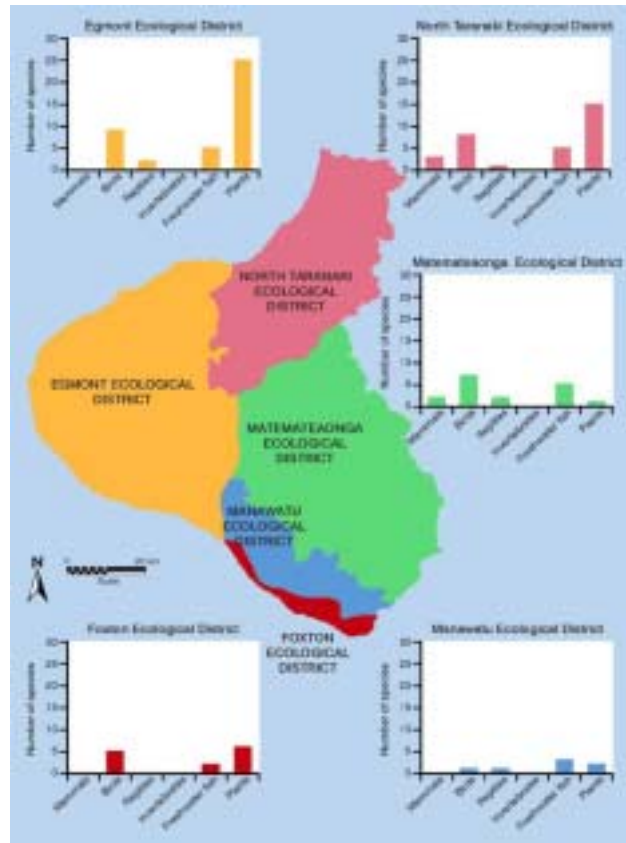


Figure 3: Threatened and uncommon native plants and animals by ecological district



Notoreas 'Taranaki' moth – this daytime flying moth is found only in south Taranaki and north-west Nelson and nowhere else in the world

⁸ Department of Conservation: 'Foxton Ecological District – Survey Report for the Protected Natural Areas Programme', 1992.

⁹ Department of Conservation: Manawatu Plains Ecological District – Survey Report for the Protected Natural Areas Programme, 1995.

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 rare and endangered volcanic plateau short tailed bat, North Island brown kiwi, striped skink and short jawed kokopu are present in the area. The rare wood rose or Pua o te reinga (*Dactylanthus taylorii*) is also present.¹⁰



The North Island brown kiwi

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

The Egmont National Park is the most significant and diverse natural area in the Egmont Ecological District. The large forest area of the Egmont National Park 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.¹¹



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

Outside the Egmont National Park, 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 one or two 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

¹⁰ Department of Conservation: *Matemateonga Ecological District – Survey Report for the Protected Natural Areas Programme, 1996.*

¹¹ Department of Lands and Survey: *Egmont Ecological District – Survey Report for the New Zealand Protected Natural Areas Programme, 1986.*

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.

Native plant and animal species that are threatened or uncommon in the Taranaki region are listed in Appendix I.

3.2 Freshwater ecosystems and habitats

3.2.1 Rivers, streams and lakes

The Taranaki Regional Council's state of the environment report notes that 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.¹²



Brown mudfish – a nationally endangered species found in Taranaki

In Taranaki, the most well known native fish are two species of eels, five species of bullies, and six species of the whitebait (inanga) 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.

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 Egmont National Park, while other fish species such as shortfinned eels prefer slow flowing streams, ponds and lakes.

3.2.2 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

¹² Taranaki Regional Council: 'Rights of Passage – Removing the Barriers for our Freshwater Fish'. 2000.

about 0.2% outside of the Egmont National Park.

In a survey carried out in 1996, the Taranaki Regional Council identified some 717 naturally formed wetlands of varying size, type and condition within the region. Of these¹³ four broad types were identified. These being:



Most Taranaki wetlands are lacustrine

- 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;
- 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. Seventy-nine percent of Taranaki’s wetlands were identified as being less than six hectares (Table 2).

Table 2: Wetland sizes in Taranaki

	Size (hectares)								Total
	<6	6-10	11-15	16-20	21-25	26-30	31-50	>50	
Number	567	62	25	16	7	6	14	20	717
% of total	79	9	3	2	1	1	2	3	100

Most remaining wetlands in Taranaki have been modified – suffering some form of loss of value and condition from land use and development. An assessment of the condition of 139 of Taranaki’s more significant wetlands, as surveyed and recorded by the Department of Conservation on its inventories of ‘Protected Natural Areas’ and ‘Wetlands of Ecological and Representative Importance’ showed that approximately half of these wetlands appear to have suffered some degree of modification since they were first recorded by the Department.¹⁴

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

¹³ Taranaki Regional Council: ‘Wetlands in the Taranaki Region.’ 1996.

¹⁴ Taranaki Regional Council: ‘Taranaki – Our Place, Our Future’. 2003.

3.3 Coastal and marine ecosystems and habitats

The Taranaki region has a 295-kilometre coastline, comprising of steep cliffs, rocky shores and sandy beaches, a marine protected area, 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.¹⁵

Intertidal reefs are relatively uncommon in Taranaki. Large, discrete reef systems are present around the Waitara River, New Plymouth 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.

Taranaki's intertidal reef systems have generally lower diversity and abundance of species in comparison 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.

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. These include the largest breeding population of diving petrel on the west coast of the North Island. The islands are also the northernmost breeding colony of the New Zealand fur seal.¹⁶

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



Fur seal basking at the Sugar loaf Islands



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

¹⁵ In all, marine species make up about one-third of New Zealand's indigenous biodiversity – www.biodiversity.govt.nz.

¹⁶ Department of Conservation: 'Conservation Management Strategy – Wanganui Conservancy'. 1997.

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. A few pairs of variable oyster catcher also nest on the north Taranaki coast. 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.

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.

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.

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, kahawai, 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.



Blue cod

3.4 Māori cultural and spiritual values¹⁷

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 Māori culture and traditions.

¹⁷ This section 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.

Over the centuries, M•ori have developed close relationships with New Zealand's forests, plants and animals. From the M•ori perspective, all living things are originally descended from the gods Ranginui (Sky Father) and Papatuanuku (Sky Mother). Their son T•ne is the atua (god) responsible for forests. After T•ne 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 T•ne ie, the trees, plants, birds and other forest creatures.

To M•ori, 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 M•ori 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, hap• 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 M•ori 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.



Flax kete (basket)

Today M•ori 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 r•hui

(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 proving locally obtained food for manuhiri (guests) on the marae.

4. Issues

This section outlines environmental and management issues relating to the maintenance and enhancement of indigenous biodiversity in Taranaki.

On land, despite 40% of Taranaki being native forest and scrub and half of this area being in the public conservation estate, certain habitat types such as coastal and lowland forests and wetlands are poorly represented. In addition, pest animals and weeds represent an on-going threat to the 'quality' of remnant habitats.

In freshwater habitats, threats to indigenous biodiversity principally relate to water degradation and the presence of fish barriers. In the coastal marine area, the illegal harvesting of shellfish, habitat destruction attributable to inappropriate fishing practices, and the threat of harmful exotic marine organisms become established offshore are the threats of most concern.

Management issues associated with the need for more effective integrated management and more information also need to be addressed.

4.1 Habitat modification

In the past, the clearance and fragmentation of indigenous vegetation for pasture, forestry or development has been the greatest threat to indigenous biodiversity. In Taranaki, as in many other parts of New Zealand, vegetation clearance and land drainage was an essential part of agricultural and urban development. Indigenous forests and wetlands were seen as 'unproductive' land with land development and drainage activities encouraged by central and local government as a means of extending pastoralism and improving farm productivity.

As a consequence towards the end of the nineteenth century, much of Taranaki's original indigenous vegetation was cleared for pasture. High market prices during the 1950s wool boom and the introduction of central government land development incentives in the 1970s saw further clearances of indigenous vegetation with increasingly 'marginal' land being cleared and put into pasture production.

In the 1980s land development subsidies were removed. Today large-scale conversion of indigenous forests to pasture is extremely uncommon and poses little threat to the current areal extent of indigenous vegetation in the region. Furthermore, 21% of the region, containing large tracts of native forests and other types of habitat, is public conservation land, which has been set aside solely for the purpose of conservation.

In terms of indigenous vegetation on privately owned land in the hill country (that part of the region where the largest tracts of native forest lie), Taranaki Regional Council monitoring¹⁸ reveals the following patterns:

¹⁸ This monitoring is based upon the Sustainable Hill Country Monitoring Programme, which provides a representative picture of private land use and land use change in the hill country. The Programme involves 25 representative monitoring sites. Each site is 900 hectares and the combined sites represent approximately 8% of privately owned land in the hill country.

- native forest represents 15% of privately owned land in the hill country;
- since 1984 the area of native forest has remained unchanged;
- native scrub represents 26% of privately owned land in the hill country;
- between 1984 and 1994 the area of native scrub on private land in the hill country decreased by 3%; and
- between 1994 and 2000 the area of indigenous scrub on private land in the hill country increased by 3%. This increase is principally at the expense of sheep and beef pasture.

Figure 4 shows current land use in the hill country based upon the Sustainable Hill Country Monitoring Programme. Significant changes in land use are shown in Figure 5.¹⁹

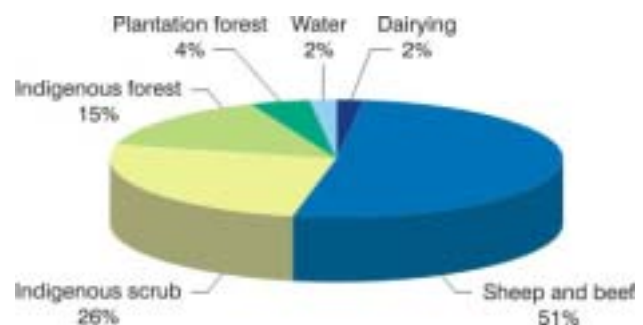


Figure 4: Current land uses in the hill country

The Council's report on the state of the environment attributes declining land use pressures and associated land clearance to a number of factors. First, remnant natural areas on private land, particularly in the hill country, generally occupy economically marginal land and there is minimal financial gain and great expense for any farmer wishing to clear the land for pasture or plantation forestry purposes. Secondly, the application of the Forest Amendment Act (plus regional and district rules) limits forest harvesting and controls the large-scale clearance of indigenous vegetation. Thirdly, community and farming attitudes are changing and there is increasing appreciation of the importance and need to protect indigenous biodiversity.

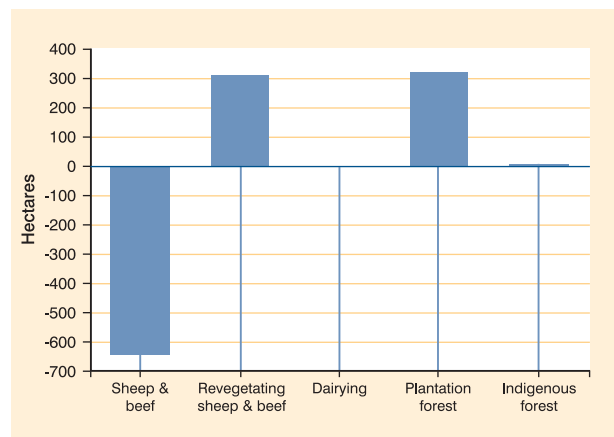


Figure 5: Land use changes in the hill country 1994 - 2000

Notwithstanding that, large-scale vegetation clearance and land drainage is largely a thing of the past, small-scale vegetation clearance and drainage activities still occurs throughout Taranaki. Even small-scale activities may have irreversible impacts on the ecological functioning of critical habitats or on scarce and rare indigenous plants and animals that are present in the area. In Taranaki, areas most vulnerable to vegetation clearance and land drainage are the smaller fragmented natural areas on the ring plain and coastal terraces. These natural areas are likely to

¹⁹ Landcare Research Limited. 'Sustainable Land Use Monitoring in the Eastern Hill Country and Coastal Sand Country'. 2000.

be surrounded by fertile intensively farmed land and are threatened by development or encroachment from adjacent land uses.

Day-to-day farming activities may also degrade remnant natural areas. For example, the grazing of livestock on unfenced coastal herbfields or on the margins of native forests and wetlands can destroy not only the forest under-storey but also certain inconspicuous looking native plants such as the small native buttercup *Ranunculus recens*, which is known only from the coast near Manaia. Land drainage and the cleaning of farm drains may destroy the habitat of the endangered brown mudfish.



Harvesting of indigenous forest is today managed under the Forest Amendment Act on a sustainable basis

Current effect on indigenous biodiversity

Land clearance for pasture	LOW EXTENT
Land clearance for forestry	LOW EXTENT (native scrubland most under threat)
Drainage of wetlands	LOW EXTENT (high impact where it occurs)
Modification through grazing etc	LOW EXTENT (high impact in some areas)
Fragmentation of habitats	LOW EXTENT (high impact where it occurs)

4.2 Impacts by pest animals and weeds

The Taranaki Regional Council's report on the state of the environment identified the impact of pest animals and plants as the key threat to maintaining the 'quality' of indigenous habitats and associated natural values.

Outside public conservation areas, pest control is largely reliant on the voluntary efforts of individuals and community groups and the Taranaki Regional Council's Self-help Possum Control Programme (refer section 5.3). However, even in public conservation areas, indigenous biodiversity values are in a significant state of decline due to the impact of pests.

On land administered by the Department of Conservation there are sustained pest control operations targeting browsing pests such as possums (mainly for foliage protection) but sustained programmes addressing predators of native fauna are confined to a few sites where threatened species recovery programmes are in place.

Mustelids (stoats, ferrets and weasels) and other predators such as cats and rats have been linked to the decline and in some cases the disappearance of native bird, reptile and invertebrate species. The number of mainland kiwis has declined dramatically in recent years. Research has found that kiwi in both the North and

South Islands are declining by 5.8% (in other words halving every decade). This is mainly due to predation by mustelids on young kiwi whereby 95% of juvenile kiwi are killed within the first six to nine months of leaving the nest.²⁰

Predators have been identified by the Department of Conservation as the key threat to a large number of acutely and chronically threatened indigenous fauna species in Taranaki but are particularly linked to the decline of the following species²¹:

- blue duck;
- North Island kokako;
- North Island kaka;
- wrybill;
- North Island brown kiwi;
- yellow-crowned kakariki;
- kereru;
- sooty shearwater;
- banded dotterel; and
- northern little blue penguin.

In terms of browsers, possums and goats have been identified as particular threats to native plants.

Possoms are present throughout Taranaki and cause considerable damage to indigenous broadleaf and hardwood species. The possums' preference for these species has had a serious effect on the composition of much of the region's indigenous forested area. Flora species most affected include kohehekohe, kamahi, mahoe, fuchsia, northern rata and *Pseudopanax spp.*

By stripping forests of fruit, flowers and leaves, possums affect vital food sources for birds. Possums also eat eggs and chicks and interfere with



Possum (top right photo) browse damage to upper canopy on kohehekohe and kamahi (left photo). Feral goats (bottom right photo) destroy the under-storey

²⁰ If the survival rate for juvenile kiwi can be lifted from 5% to over 20% the kiwi population decline would be halted and a recovery take place

²¹ Department of Conservation correspondence to the Taranaki Regional Council 1 April 2004.

the breeding of indigenous bird species such as the kokako, kiwi and kereru. They also prey on indigenous invertebrates such as giant wetas and the Powelliphanta 'Egmont' land snail.

In Taranaki, feral goats are second only to the possum in terms of their impact on native plants. Feral goats are established in medium to high densities over much of the eastern hill country. They destroy the under-storey of vegetation, which, when combined with possum damage to the upper canopy, can result in significant degradation of natural areas.

There are almost 25,000 known introduced plant species in New Zealand, of which almost 250 are recognised as serious conservation weeds.

These weeds range from climbing vines (such as old man's beard) and creeping groundcovers to perennial herbs (such as wild ginger) and grasses and aquatic plants, and can be found in just about every habitat in Taranaki. Without control, weeds can threaten to displace native plant species, reduce the diversity of our natural ecosystems, transform the landscape, and reduce the availability of habitat and food supplies to native birds, invertebrates and lizards.



Chilean rhubarb is a prolific seeder and is widespread on coastal cliffs in south Taranaki. The weed is threatening the survival of sand daphne, which is the only food source for the Notoreas 'Taranaki' moth. The weed also reduces the habitat suitable to support threatened populations of the gold-striped gecko, copper skink, brown skink and common skinks and alters preferred nesting sites for seabirds.

Current effect on indigenous biodiversity

Pest damage on private land	EXTENSIVE/HIGH IMPACT
Pest damage in public conservation areas	EXTENSIVE/HIGH IMPACT
Weed damage on private land/public conservation areas	LOW EXTENT (high impact in some areas)

4.3 Threats to freshwater habitats and aquatic life

Existing threats to freshwater habitats and aquatic life include point and diffuse source discharges to water reducing water quality, loss of habitat such as wetlands

and riparian margins, and the presence of barriers to fish passage. Future threats to natural values associated with freshwater habitats include the release and proliferation of pest fish in the region.

The Taranaki Regional Council's report on the state of the environment notes that, overall, the quality of Taranaki's freshwater is good. However, there is a tendency for freshwater quality and habitats to deteriorate towards lower reaches²², which may impact on the ecological functioning of indigenous wildlife habitat, aquatic flora and fauna and ecological values. Mapping of median macroinvertebrate community index (MCI)

scores, which are an indicator of water quality and habitat, shows a gradual decrease in water quality and habitat conditions) from Egmont National Park downstream to the coast. As demonstrated in Figure 6 the highest water quality and habitat (>120 MCI) are typical of upper catchment rivers and streams with moderate to poor water quality and degradation of physical habitat (<80) being typical of coastal reaches. To a certain extent this decrease is a natural result of the changing physical habitat downstream. It is also due to diffuse

(widespread) source contamination of water associated with intensive agricultural land use (eg, stormwater runoff of fertiliser, animal excreta and sediments) and the increasing absence in riparian vegetation downstream. Point source discharges to rivers and streams may also be a potential problem in some localities.

There is a strong relationship between good water quality and vegetation cover on stream banks (riparian vegetation).

An aerial survey undertaken in 1995 showed that about 60% of the total length of waterways crossing the ring plain had no riparian vegetation. This equates to approximately 9,600 kilometres out of 15,996 kilometres of riverbank (covers both banks of the stream) have no riparian vegetation.²³ Over the last decade considerable investment has been made by the farming community in Taranaki to maintain or replant riparian margins. The fencing and planting of native trees along riparian margins should, over time, improve the overall condition (ie, water quality) of Taranaki waterways for aquatic indigenous biodiversity as well as

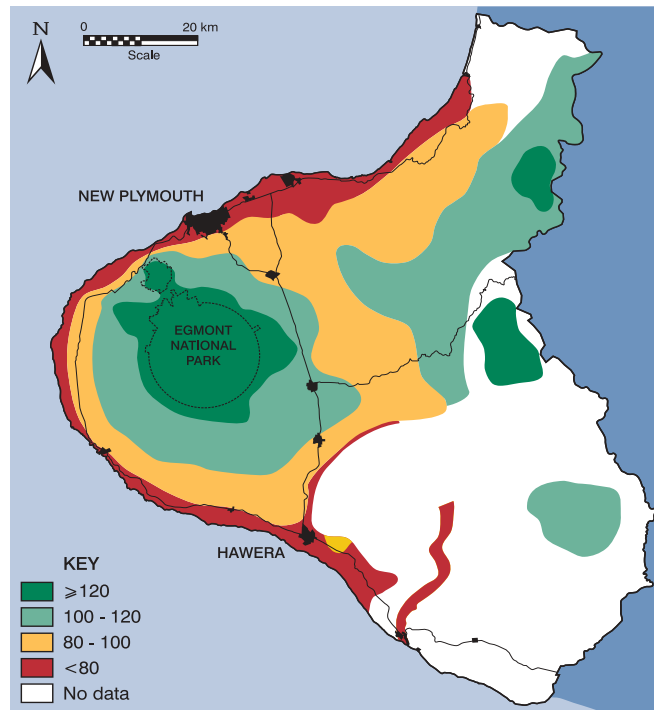


Figure 6: Median macroinvertebrate community index scores in Taranaki

²² Taranaki Regional Council: 'Some Statistics from the Taranaki Regional Council Database of Freshwater Macroinvertebrate Surveys Performed During the Period From January 1980 to 31 December 1998'. 1999.

²³ Taranaki Regional Council: 'Extent of Riparian Vegetation in Taranaki'. 1995.

provide ‘corridors’ or stepping stones for other forms of indigenous flora and fauna.

Structures such as dams, weirs and road and farm culverts may also impact on indigenous freshwater biodiversity by preventing native fish species from migrating upstream. In 2001 the Taranaki Regional Council investigated 108 dams, weirs and other structures that were potential barriers to fish passage in Taranaki – many of these were constructed prior to requirements to obtain resource consents for the construction or placement of structures in river beds. Of the structures investigated, 61 (57%) were considered to pose a barrier to fish passage. Since 2001, the Council has undertaken further investigations and actions to improve fish passage (see section 5.3.4 of this report).



Example of a culvert that presents a barrier to fish passage

A potentially significant issue in the future is that of pest fish such as koi carp, mosquitofish, rudd and catfish. At present, these fish are present at only a few isolated sites in Taranaki and therefore are not currently having a significant impact. However, in other parts of the country where they are more widespread they are known to have significant freshwater impacts by decreasing water quality and degrading aquatic habitats, killing native fish or by muscling them out of their territory and eating many of the same foods.



Rudd – prolific breeders that compete directly with some native fish species for food and territory

Current effect on indigenous biodiversity	
Discharges to water	LOW/MODERATE (high impact in some lower catchment areas)
Loss of riparian margins	EXTENSIVE
Barriers to fish passage	HIGH IMPACT WHERE IT OCCURS
Pest fish	LOW

4.4 Threats to marine habitats, flora and fauna

Unlike threats to indigenous biodiversity on land, threats to marine indigenous biodiversity are not immediately evident. As noted in the New Zealand Biodiversity Strategy, little is known about New Zealand’s vast marine resource, or

how our activities may be impacting upon it. Notwithstanding that, there is enough evidence to suggest that significant threats to marine biodiversity exist including seafood harvesting, habitat destruction and incursions of harmful marine organisms.

Monitoring and community feedback show continued concern with illegal fishing or overfishing of our fishery resource. In 2001, local hap • members undertook a survey of the state and extent of kaimoana (seafood) resources including kina, paua, pupu, mussels and crabs along the north Taranaki coast.²⁴ The project identified harvesting pressure as the key pressure on kaimoana.²⁵

In 2003/04, the Taranaki Regional Council undertook three surveys of kaimoana at the Kawaroa Reef and Arakaitai Reef.²⁶ Monitoring results from these surveys also indicated significant harvesting pressures on kaimoana. In particular, monitoring noted that at sites where most of the paua were counted previously later monitoring would show hardly any paua present despite no change in habitat. Furthermore, in the last survey substantial numbers of people were present gathering kaimoana and it was observed that a large number of undersized paua were being taken in excess of the Ministry of Fisheries daily limit of 10 per person.

Figure 7 below shows that the mean size of paua surveyed was 45mm and all paua counted during the monitoring period were less than 93mm in length, which is below the legal size of 125mm for seafood gathering. Figure 7 also shows a pattern whereby overtime the curve is moving to the right, which suggests that the average size of paua on the reefs increase over time but once they reach a certain size these paua disappear indicating a resource under heavy pressure. While it is generally believed that Taranaki paua have a slower growth rate linked to environmental conditions such as high wave exposure and naturally high suspended sediment concentrations, it is noted that where there are no harvesting pressures such as in the nearby Sugar Loaf Islands Marine Reserve where paua grow to the legal size.

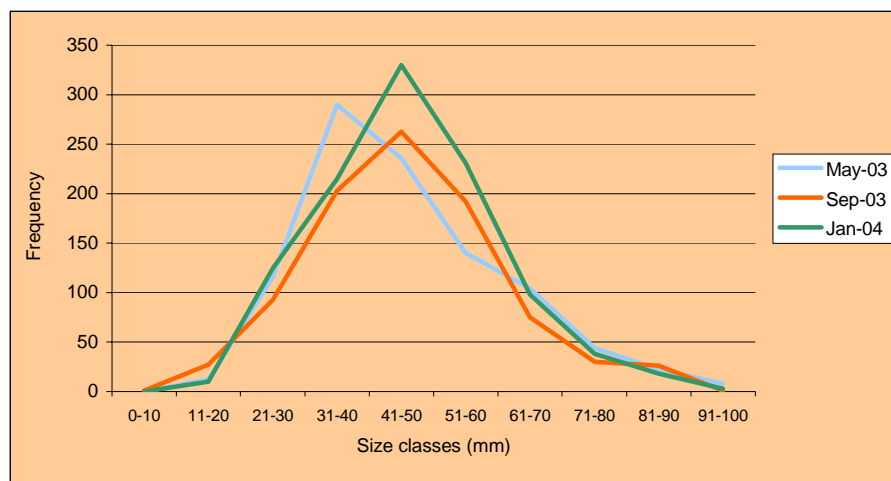


Figure 7: Paua size and frequency on Kawaroa and Arakaitai reefs (summer 2004)

²⁴ The North Taranaki Kaimoana Survey was commissioned by Fletcher Challenge Energy Taranaki Limited and involved the Ngati Rahiri hap • and Otaraua hap •.

²⁵ Fletcher Challenge Energy Taranaki Limited: 'Kaimoana Survey 2000/2001 – Phase 3: North Taranaki Coastal Seafood Resources – Summary of Findings and Recommendations'. 2001.

²⁶ These surveys were in response to concerns that the dumping of sand (in association with sand dredging operations by Westgate Transport Limited in Port Taranaki) might have adverse effects on local reefs and kaimoana gathering.

In recent times there has also been much debate regarding the impact of commercial marine fishing. Research commissioned by the Ministry of Fisheries on fish stocks shows that for 80% of marine fish stocks, for which there is sufficient information to advise on sustainability,²⁷ are above, at or near target sustainability levels. This has been attributed to the Quota Management System. Other organisations, however, have taken a contrary view on the sustainability of our marine fish stocks.

In June 2004, the Royal Forest and Bird Protection Society for New Zealand published a report that summarised the ecological rankings for New Zealand's commercial marine fisheries based on the state of fish stocks, by-catch issues and the effects of other damage caused by fishing practices.²⁸ In brief, the report contends that almost all of New Zealand's commercially fished species are being exploited to their lowest levels ever. Of the 62 marine fish species listed in the report, the ecological sustainability of 31 (or 50%) species was considered inadequate (but with at least one redeeming feature), while the ecological sustainability of 31 (or 50%) species was considered totally inadequate. No marine fish species were ranked as being excellent, good or fair in terms of sustainability.

In terms of fish stocks off the Taranaki coast, there is anecdotal evidence that the number of sharks has declined in recent years due to commercial fishing. The by-catch of non-target fish and threatened wildlife can also be a problem on occasion. Throughout New Zealand, over 10,000 seabirds (particularly albatross and petrels) are drowned on longlines each year.²⁹ In Taranaki, marine mammals such as the New Zealand fur seal and Maui's dolphin may be drowned in set nets.

The indirect effects of fishing are even more difficult to assess and measure. Commercial marine fishing is likely to change the size and age composition of fish populations and may alter the marine food chain by reducing the number of predators near the top of the food chain (eg, large sharks and tuna) and the number of prey near the bottom of the food chain (eg, anchovy and squid).

There are also significant concerns relating to the potential of fishing practices to destroy marine habitats such as reefs. Habitat destruction attributable to inappropriate fishing practices occurs on an infrequent basis off the Taranaki coastline. However, commercial fishing methods of set netting and trawling have the potential to wipe out entire reefs, which in turn impacts on the species that inhabit or feed off those reefs. In Taranaki, significant damage to reefs has mostly been attributed to large trawlers from outside the area visiting to catch their quota and being unaware of the local reefs present.

The marine environment is also very susceptible from incursions of harmful marine pests that may be transferred from overseas to New Zealand in a vessel's ballast water or on the hull or on fishing or marine farming equipment and other means. The ballast water of one vessel alone typically carries over 300 species, of which over 50 are pests in some location around the globe.³⁰

²⁷ *In recent times, there has been increased funding for research towards advising on the sustainability of New Zealand's fishery stocks. Currently there is sufficient information to advise on the sustainability of 60% to 70% of New Zealand's commercial fisheries. Refer MFish press release 'Research shows New Zealand Fisheries are in Good Shape'. 3 June 2004.*

²⁸ *Royal Forest and Bird Protection Society: 'Best Fish Guide – Part One: Summary of Ecological Rankings for New Zealand Commercial Fisheries'. June 2004.*

²⁹ *Royal Forest and Bird Protection Society: Ibid. June 2004.*

³⁰ *Biosecurity Council: 'Protect New Zealand Tiakina Aotearoa – The Biosecurity Strategy for New Zealand'. 2003.*

There are at least 150 exotic marine species in New Zealand. Many of these have the potential to be marine pests.³¹ Marine pests can compete with and displace native species, modify natural habitats and ecosystems and reduce biodiversity. Organisms such as the North Pacific seastar, which is a voracious predator of a vast range of other species including clams, mussels, kina and paua is believed to have 'hitchhiked' in ballast water to Tasmania. Within two years, populations of North Pacific seastar in Tasmanian waters reached 30 million and, in some parts, eliminated over 90% of the indigenous biomass. Its presence in and around Taranaki waters would have similar consequences.

Marine biosecurity is notoriously difficult to achieve and implement. However, to date, there have been no significant incursions of marine pests in Taranaki waters.

Current effect on indigenous biodiversity	
Fishing and seafood gathering	MODERATE TO HIGH (high impact particularly with shellfish)
Habitat destruction	HIGH IMPACT WHERE IT OCCURS
Incursion of marine pests	LOW (potential significant issue)

4.5 Lack of common focus

As outlined in section 2 above there are a plethora of agencies and statutes that attempt to deal with matters related to indigenous biodiversity. However, as noted by a Ministerial Advisory Committee³², there is a lack of common focus. This could also be said for biodiversity management in freshwater and the marine environment.

The lack of common focus is attributed to agencies operating in different jurisdictional areas, under different statutory mandates, addressing different parts of the environment. Accordingly, these agencies pursue separate goals and have different capabilities, priorities, resources and levels of commitment to biodiversity management. Except for the Department of Conservation, which has a clear statutory mandate to focus on biodiversity management, other agencies have other duties and responsibilities and, in some cases, may view biodiversity as incidental to their core functions.

In relation to land, the perceived lack of effective pest and weed control in public conservation areas has been a source of conflict with neighbouring private landholders and the regional community in the past. Demonstrating a 'good neighbour' policy (eg. controlling pests or weeds where they are impacting on neighbouring land) is often a precursor to obtaining public 'buy-in' and maintaining goodwill for achieving indigenous biodiversity outcomes. It is also important for Government agencies such as the Department of Conservation to demonstrate that there is a national commitment and adequate resources to effectively manage indigenous biodiversity in their areas of responsibility. Again there is a perception that indigenous biodiversity is declining or under threat in significant parts of the conservation estate. If indigenous biodiversity values are not going to receive the required level of investment in public conservation areas, it is

³¹ www.starfish.govt.nz/economic/facts/fact-marine-biodiversity.

³² Ministerial Advisory Committee; 'Bio-what?' 2000.

highly unlikely that other parties will want to invest in similar values elsewhere. Part of this issue is a lack of good information about what biodiversity values and threats exist and whereabouts in the region they exist, for example on public or private land (see section 4.6 below). Such information would encourage action by different parties because those actions could be targeted to priority areas or species.

While biodiversity certainly cannot be said to be neglected, its management is fragmented, piecemeal and lacks a single unifying sense of purpose.

Current effect on indigenous biodiversity	
Variable priorities/commitment to biodiversity	MODERATE TO HIGH
Lack of clear national direction	LOW
Funding and capacity constraints	HIGH (particularly on private land)

4.6 Lack of comprehensive information

Accurate and reliable information, either through research or monitoring, is essential to underpin management policies and actions. However, in many areas concerning indigenous biodiversity there is a paucity of such information or that such information is difficult to access. This issue is not confined to Taranaki.³³

The Department of Conservation maintains a number of datasets and undertakes a considerable amount of monitoring and research on indigenous biodiversity. However, as reported by the Ministerial Advisory Group, while there is significant information available stating that a problem exists, there is a less information to support agencies in their decision-making in relation to biodiversity management.³⁴ Of particular concern is that baseline information such as the presence/absence and abundance of individual indigenous plant and animal species and their range (regardless of whether they are in public conservation areas or private land) is not available at a regional or district level.

Without good baseline and on-going information on the presence/absence and abundance of individual indigenous plant and animal species, it is difficult to identify what local or regional contribution is needed, where the priorities lie, and, indeed, the very effectiveness of the management actions being undertaken. This review has noted that few agencies effectively monitor their progress against established, meaningful biodiversity goals. Therefore, they generally do not know whether the state of indigenous biodiversity is in decline and at what rate, and the extent to which their management efforts have been effective.

There is also limited information on the ecological condition of remaining natural areas such as how severely they have been affected by possums or goats, their tolerance to grazing, or what species are at risk of loss from predators such as rats and stoats. There is also a need for research and the dissemination of information on the minimum areas of indigenous vegetation needed to sustain the values of different habitats, or the range of habitats needed to provide year round feed for different indigenous species, or the most cost effective actions to manage particular pest threats.

³³ Ministry for the Environment: 'A snapshot of council effort to address biodiversity on private land: A report back to councils'. June 2004.

³⁴ Ministerial Advisory Committee: *ibid.*

In relation to freshwater and marine ecosystems again there is paucity and significant gaps in certain types of information available to policy makers. Research agencies such as the National Institute of Water and Atmospheric Research Limited, Landcare Research and universities may hold large amounts of data and reports but much of it may be dated and has not been checked for many years or has been collected for another purpose and needs to be reassessed before it is used. The Taranaki Regional Council has done some monitoring and investigation work on freshwater ecosystems but more will be needed to identify stretches of particular catchments of high natural value (eg, because of the presence of rare and endangered species, spawning etc).

In terms of the marine environment, the Ministry of Fisheries has some surveillance and monitoring systems in place at Port Taranaki to identify the presence/absence of unwanted organisms. However, one of the main concerns raised by Royal Forest and Bird Protection Society for New Zealand in its report³⁵ summarising ecological rankings for New Zealand's commercial marine fisheries is that marine fisheries are being exploited based on poor information on the state of the stock.

Current effect on indigenous biodiversity	
Inadequate protocols for use of information	MODERATE TO HIGH
Lack of or poor quality information	HIGH (particularly for marine ecosystems)
Variable monitoring	HIGH (particularly on private land, freshwater and marine ecosystems)

4.7 Summary of issues

To address those issues impacting or impinging on indigenous biodiversity in the Taranaki region, key players need to consider policies and methods that:

- maintain the areal extent of natural areas and habitats;
- protect 'under represented' natural areas and habitats, particularly in relation to coastal and lowland forests and wetlands;
- manage impacts of pest animals and plants, particularly those threatening the condition of regionally significant natural areas and habitats and the survival of threatened native plants and animals;
- enhance ecological linkages between remnant natural areas;
- remove barriers to native fish passage and address the loss or degradation of freshwater fish habitats especially for spawning;
- manage impacts of fishing and seafood harvesting and the threats posed by marine pests; and
- promote more effective integrated management and address information needs to maintain and enhance terrestrial, fresh water and marine indigenous biodiversity.

³⁵ Royal Forest and Bird Protection Society: 'Best Fish Guide – Part One: Summary of Ecological Rankings for New Zealand Commercial Fisheries'. June 2004.

5. Current actions and programmes – who does what?

The Department of Conservation, Ministry of Fisheries, the Taranaki Regional Council, three territorial authorities and other key players have programmes in place promoting biodiversity. This section summarises management actions and programmes in relation to the key players, which contribute towards indigenous biodiversity.

5.1 Department of Conservation

The Department of Conservation is the **key player** and has particular expertise in relation to biodiversity management on land. Key activities undertaken by the Department include the management of public conservation areas, the management of threatened species, pest animal and weed control in the public conservation area; and ecological monitoring and research.

5.1.1 Management of public conservation areas

The Department of Conservation administers public conservation areas, which is Crown land set aside for conservation purposes and amounts to 146,973 hectares or 21% of the Taranaki region.³⁶ This accounts to just over half of the region's native forest and scrubland area and includes the Sugar Loaf Islands Marine Protected Area (Figure 8).

The day-to day business of managing public conservation areas incorporates a wide variety of activities. Of particular importance are activities relating to the management of threatened species, pest and weed control and monitoring and research programmes. Department of Conservation expenditure in the Taranaki region is estimated to be between \$4 million and \$5 million per annum.³⁷

In addition to managing public conservation areas, the Department of Conservation administers the Land Acquisition Fund and as opportunities arise, and as

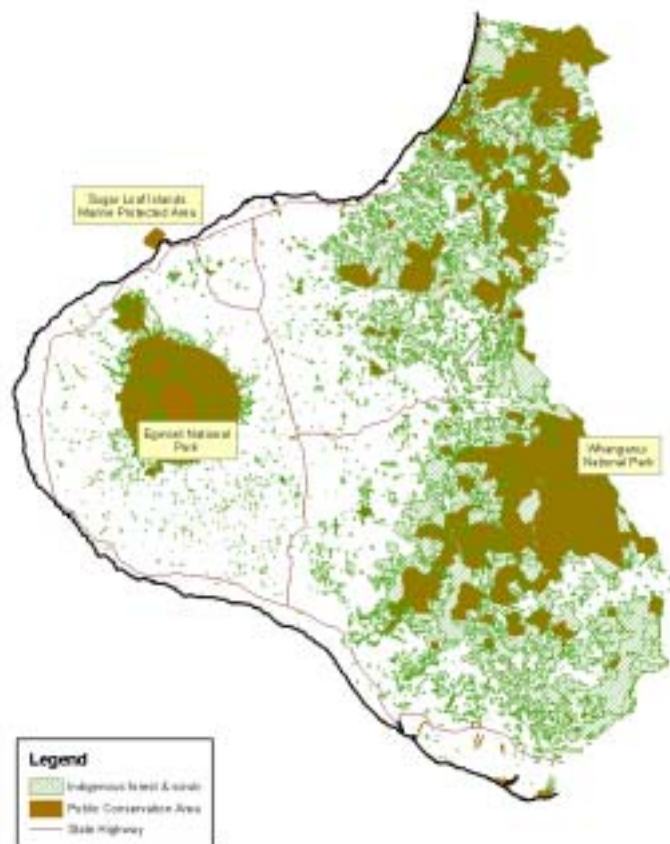


Figure 8: Public conservation areas in the Taranaki region

³⁶ Department of Conservation: 'Wanganui Conservancy – Conservation Unit Summary for Taranaki Region'. 2000.

³⁷ Business and Economic Research Ltd: 'Community Investment in Environmental Improvements in Taranaki'. Report prepared for the Taranaki Regional Council. August 2002.

priorities dictate, enables the Department to purchase private land, which may have significant natural values and add that land to the public conservation estate. The Department also administers two contestable funds – Nature Heritage Fund and Nga Whenua Rahui – that support projects to protect (including outright purchase) indigenous forests and associated ecosystems that represent the full range of natural diversity originally present in the New Zealand landscape.

5.1.2 Management of threatened species

The Department of Conservation has statutory responsibilities in relation to wildlife management. In terms of indigenous animals, the Department of Conservation undertakes a number of programmes for the maintenance of critically endangered species such as the kokako, where non-intervention may mean its extinction.

Threatened species management includes recovery planning, predator trapping, browser-proof enclosures, the establishment of mainland habitat ‘islands’ and the transfer of species to secure or restored habitats or behavioural manipulation (eg, supplementary feeding to induce breeding activity). In recent times the Department of Conservation has reintroduced the nationally endangered blue duck to the Egmont National Park and surrounds. The programme involves the annual transfer of captive-bred and wild-bred birds to the Park supported by mustelids trapping in the Park.

The Department of Conservation’s threatened plant management programme involves on-going work to protect habitats and sites. In some cases, sites are secure (formally protected) and the focus is therefore on threat management such as fencing, weed control and pest control. In other cases, sites are insecure and the Department of Conservation undertakes various combinations of advocacy, monitoring and pest control to protect threatened plant species at those sites.

Table 3 identifies threatened plant species in Taranaki in relation to whether sites are secure or not.³⁸

Table 3: Threatened plants species with secure and insecure sites in Taranaki

Species with secure sites	Species with insecure sites
<i>Sebaea ovata</i>	<i>Craspedia</i> ‘Otakeho’
<i>Pomaderris apetala</i>	<i>Limosella</i> ‘Manutahi’
<i>Lepidium oleraceum</i>	<i>Amphibromus fluitans</i>
<i>Rorippa divaricata</i>	<i>Crassula peduncularis</i>
<i>Myosotis petiolata</i> var. <i>pansa</i>	<i>Hebe speciosa</i>
<i>Dactylanthus taylorii</i>	<i>Myosotis pygmaea</i> var. <i>minutiflora</i>
<i>Marattia salicina</i>	<i>Euphorbia glauca</i>
<i>Brachyglottis kirkii</i> var. <i>kirkii</i>	<i>Myosotis pygmaea</i> var. <i>pygmaea</i>
<i>Gratioal nana</i>	<i>Crassula manaia</i>
<i>Myriophyllum robustum</i>	<i>Sonchus kirkii</i>
<i>Peraxilla colensoi</i>	<i>Ranunculus recens</i>
<i>Peraxilla tetrapetala</i>	<i>Oreomyrrhis</i> ‘minute flower’
<i>Olearia capillaries</i>	
<i>Pterostylis micomega</i>	

³⁸ Department of Conservation correspondence to the Taranaki Regional Council, 1 April 2004.

Appendix I summarises on-going programmes by the Department of Conservation for threatened terrestrial flora and fauna in Taranaki.

5.1.2 Pest and weed control

The Department of Conservation currently treats the whole of the public conservation area for possums at a level designed to protect the canopy cover, as part of a seven-year treatment rotation policy. More frequent control is undertaken at smaller sites or in localities to protect threatened native plant and animal species such as kiwi, North Island robin and kereru in the Whitecliffs Conservation Area.

In addition to possum control, the Department of Conservation undertakes significant goat and deer control. The Department undertakes sustained goat control in the Egmont National Park and on a number of smaller reserves. The Department, in conjunction with the Animal Health Board, also implements the *Feral Deer Plan for Taranaki* (1997). This Plan focuses on deer control on public and private land to maintain northern and western Taranaki's feral deer free status and to prevent the establishment of feral populations of red and sika deer in southern Taranaki.

In terms of weed control the Department of Conservation undertakes 'weed led' and 'site led' control programmes. Under 'weed led' programmes the Department attempts to eradicate or contain localised species considered to be a potentially significant threats to conservation. Current 'weed led' programmes in the region include work on climbing spindleberry, spartina, hemp agrimony and Chilean rhubarb. 'Site led' work focuses on weed control to protect the values of a specific site, eg, Egmont National Park and Meeting of the Waters Scenic Reserve.

5.1.3 Freshwater, coastal and marine programmes

The Department of Conservation is working with individual landholders and the Taranaki Regional Council to protect and enhance three regionally significant mudfish sites. The Department annually monitors these sites and other sites where shortjawed kokopu and giant kokopu sites can be found. The Department is also interested in identifying pest fish species in Taranaki. Recently the Department drained two private ponds in New Plymouth, ridding them of 42 adult adult koi carp and 11 juveniles.³⁹

The Department of Conservation imposes quarantine restrictions to prevent introduced predators colonising breeding islands in the Sugar Loaf Islands Marine Protected Area. A three-year monitoring programme has been undertaken on reef fish, rock lobster and invertebrates in the Protected Area and, as need be, the Department reduces or removes weeds from the islands.

The Department of Conservation currently has plans to make the north Taranaki Paraninihi/White Cliffs area a marine reserve⁴⁰ and is currently reviewing the *New Zealand Coastal Policy Statement*.⁴¹

³⁹ Midweek, pg. 29, June 2 2004.

⁴⁰ Presently this area has the highest protection afforded by the 'Regional Coastal Plan for Taranaki' (ie, it has been classified as a Coastal Management Area A).

⁴¹ The Department of Conservation is also contributing to other national policy initiatives such as the 'National Policy Statement for Indigenous Biodiversity' and the Oceans policy.

5.1.4 Monitoring, research and policy development

The Department of Conservation undertakes considerable monitoring in public conservation areas including wildlife surveys, pest and weed abundance. The Department also undertakes and funds research investigations. Outlined in Table 4 are current research investigations of direct relevance to Taranaki, which have elements of their field work being undertaken in the region.

Table 4: Department of Conservation funded research investigations in Taranaki

Project	Agency undertaking research
Pollination and seed dispersal processes in fragmented landscapes – a case study using tui & kereru	Department of Conservation
Dune wetlands & vegetation dynamics	Landcare Research Ltd
Behaviour, activity & thermal requirements of striped skink	Department of Conservation
Identification of conservation management units – striped skinks	Landcare Research Ltd
Intermittent possum control – how long before next time?	Landcare Research Ltd
The relationship between stoat & rodent relative abundance in North & South Island forests	Department of Conservation

5.2 Ministry of Fisheries

The Ministry of Fisheries (MFish) is the Government agency responsible for the conservation and management of fisheries. As such it has particular responsibilities for the management of fisheries, marine biosecurity and research and monitoring of commercial fisheries and the fishery resource.

5.2.1 Management of fisheries

MFish has statutory responsibilities for ensuring fisheries are managed on a sustainable basis. As such MFish licenses, administers and enforces compliance with the access/allocation rules under the Fisheries Act.

The management of fisheries involves monitoring the activities of legitimate commercial fishers, as well as detecting and prosecuting poachers and black marketers. Educating fishers, especially recreational fishers, to ensure that the rules are known and understood is also very important.

To promote sustainable fishing and prevent overfishing, MFish implement the Quota Management System. The Quota Management System controls the total catch, especially the total amount of commercial catch, from all the main fishing stocks found within New Zealand's Exclusive Economic Zone. A quota is a 'right', which allows people to own a share of the total allowable catch for a particular species in a defined area. Quotas set ensure sufficient fish is left for non-commercial users (recreational fishers and Maori interests) and for the conservation of the resource. Each year the Government sets a catch limit for each fish species based on advice provided by MFish. This advice typically includes a summary of fishery research information.

Other controls for managing fisheries also apply. MFish require all commercial fishers to have a fishing permit to fish any species including those not managed under the Quota Management System. Catch and size limits and gear restrictions may also apply to both commercial and recreational fishers to protect fish stocks.

Off the north Taranaki coast, in water of less than 25 metres between Motunui and the northern regional boundary of the North Taranaki Bight, MFish have placed trawling and seining restrictions to minimise the catch of juvenile snapper inhabiting the shallow water. MFish also enforce a ban on the use of set nets and lines and restrict the taking of fish in the Fisheries Conservation Area within the Sugar Loaf Islands Marine Protected Area.

In terms of compliance, a substantial part of MFish's compliance effort supports the Quota Management System and, in particular, targets commercial fishers. Honorary Fishery Officers are largely relied upon to monitor and enforce recreational fishing.

5.2.2 Marine biosecurity

MFish also has responsibilities under the Biosecurity Act for marine biosecurity and as such has monitoring and surveillance systems in Port Taranaki as part of New Zealand's border control security. MFish is also responsible for managing and/or co-ordinating compliance and enforcement mechanisms and educational initiatives relating to marine biosecurity.

5.2.3 Research and monitoring

The MFish Observer Programme keeps a check on commercial fishers and provides a catch sampling service for research on the main quota species. It also monitors the by-catch of marine mammals and seabirds, supervises the dumping of damaged or under-sized fish, and the unloading of fish products at sea or in port.

MFish have also carried out or commissioned a number of marine research programmes to assist in the evaluation of sustainable yields for particular fish species and to assist in evaluating marine biosecurity risks. Of particular note is a monitoring programme to provide baseline information on marine plants and animals, including introduced species, found in New Zealand's main marine points of entry. In the summer of 2001/02 MFish surveyed Port Taranaki.⁴² The survey did not identify any marine pests in Port Taranaki.

5.3 Taranaki Regional Council

The Taranaki Regional Council, through the Resource Management Act and the Biosecurity Act in particular, undertakes a number of activities that contribute to indigenous biodiversity outcomes.

5.3.1 Regional policy statement, plans and rules

The Taranaki Regional Council has prepared a suite of four regional plans to assist it in giving effect to its statutory responsibilities under the Resource Management Act. These plans contain provisions relating to indigenous biodiversity:

- The *Regional Coastal Plan for Taranaki* (1997) contains policies and rules that recognise different natural, ecological and community values associated with particular parts of the coast. Rules are less restrictive in the highly modified environment of Port Taranaki with increasing restrictions in other areas depending upon associated natural values. Highly valued areas such as Areas of Outstanding Coastal Value and or estuaries are given added protection.
- The *Regional Fresh Water Plan for Taranaki* (2001) contains policies and rules that

⁴² MAF Biosecurity Authority; 'Biosecurity'. Issue 39, November 2002.

address water flows to protect aquatic life and ecosystems, water quality, fish passage, earthworks and the fish spawning season, protection of stream margins, land drainage and the protection of wetlands. The Plan further recognises high natural values associated with the Stony River and applies increased restrictions on water use activities that impact upon that catchment.

- The *Regional Soil Plan for Taranaki* (2001) contains policies and rules for vegetation clearance on erosion prone land.
- The *Regional Air Quality Plan for Taranaki* (1997) contains policies and rules that address the effects of air discharges on ecosystems.

Through the resource consents process, which gives effect to policies and rules in regional plans, the Taranaki Regional Council may impose conditions on activities that may impact or impinge on natural values in relation to the coast or fresh water. The *Regional Policy Statement for Taranaki* also contains policies and sets out methods that address the issue of protecting significant vegetation and other vegetation and habitats of indigenous fauna, wetlands, aquatic and soil ecosystems, the air and the coastal environment

5.3.2 Protection of wetlands

In 1997, the Taranaki Regional Council identified 76 regionally significant or important wetlands. Of these, 29 (or 38%) wetlands were formally (legally) protected as part of a reserve or had a covenant on them, while 48 wetlands (62%) were located on private land with no formal protection. With the adoption of the Council's *Regional Fresh Water Plan for Taranaki* in 2001, these wetlands are afforded protection through rules controlling drainage and reclamation activities. Further protection was sought for these areas through the implementation of the Council's Wetlands Protection and Enhancement Programme, which comprises financial assistance for fencing, planting and legal protection through covenants and agreements.

Since the adoption of the *Regional Fresh Water Plan for Taranaki*, good progress has been made in retaining or securing landholder agreement to further protect these areas (Figure 9).

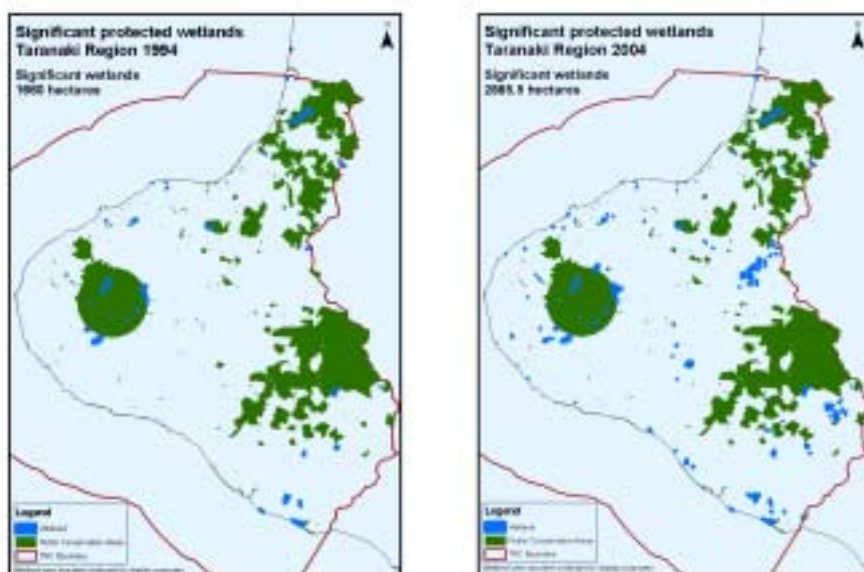


Figure 9: Significant protected wetlands in Taranaki 1994 and 2004

Table 5 below shows the number of formally protected and unprotected wetlands in Taranaki, including the Taranaki Regional Council's progress in formally protecting these wetlands since adopting the *Regional Fresh Water Plan for Taranaki* in 2001. In total, 46 (or 60%) of Taranaki's 76 regionally significant wetlands are now formally protected. Of those wetlands located on privately-owned land, over half have been formally protected.

Table 5: Protection of regionally significant wetlands in Taranaki

Regionally significant wetlands	Number	%
Wetlands formally protected		
– Prior to adoption of Fresh Water Plan	29	38%
– Since adoption of Fresh Water Plan	17	22%
– <i>Total</i>	46	60%
Wetlands not formally protected	30	40%
Total	76	100%

5.3.3 Pest management

The Taranaki Regional Council implements pest management strategies under the Biosecurity Act. These strategies, amongst other things, identify animal and plant species declared to be 'pests' and the objectives, methods and strategy rules that apply in relation to the control of these pests.

The *Pest Management Strategy for Taranaki: Animals* identifies 18 animals as pests of which possums, mustelids, feral goats, cats, pigs and deer pose a particular threat to conservation values.

Of particular significance is the Taranaki Regional Council's 'Self-help Possum Control Programme'. Under this programme, which is targeted on the ring plain (which in turn contains, the Council undertakes initial control operations to reduce possum numbers on a property and facilitates the landholders' on-going maintenance of reduced possum numbers. Each year the Council expands the area included in the Self-help Possum Control Programme by some 12,000 hectares (Figure 10). The Council undertakes initial possum control in the new area (in which there is at least 75% support to join the



Figure 10: Self-help Possum Control Programme

programme) to reduce possum numbers to very low levels (ie, at least 5% residual trap catch). Thereafter, rules take effect binding landholders to carry out possum control to ensure that possum numbers are kept at low levels.

The Self-help Possum Control Programme has been a great success with more than 3,000 properties, covering almost 200,000 hectares now within the Programme. Taranaki Regional Council monitoring confirms a significant reduction in possum numbers following initial control work by the Taranaki Regional Council and the effectiveness of on-going control by landholders to maintain possum numbers at low levels (Figure 11).⁴³

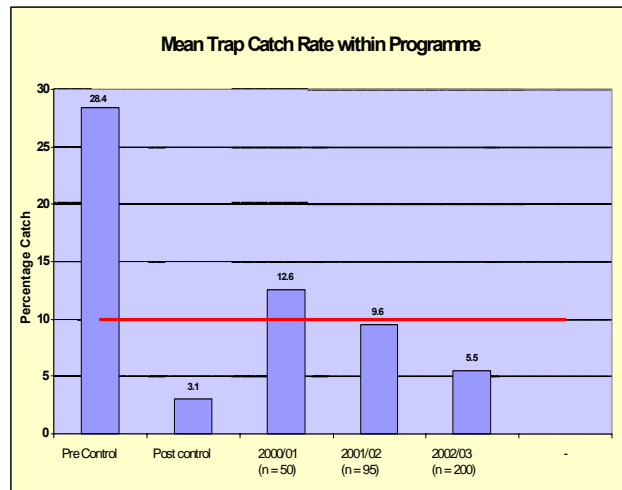


Figure 11: Effectiveness of possum control in the Self-help Possum Control Programme

The *Pest Management Strategy for Taranaki: Plants* identifies 24 plants as pests. These include plants that are threats to agricultural production as well as to indigenous biodiversity. The Council enforces rules or undertakes direct control to ‘eradicate’ pest plants of limited distribution that may impact on conservation values in the region (ie, climbing spindleberry, Darwin’s barberry, giant reed, mignonette vine and senegal tea). The Council also carries out regular inspections to ensure landholders are controlling pest plants of a more widespread contribution such as old man’s beard, wild ginger, Chilean rhubarb, and common and purple pampas. The Council also carries out biological control programmes to restrict the spread and vigour of these plants.

5.3.4 Removal of fish barriers

The Taranaki Regional Council has also identified all known structures that may affect fish passage and recorded information such as current use, resource consent status, ownership, and effects on fish passage.⁴⁴

A report⁴⁵ prepared in 2001 identified 108 dams, weirs and other structures as potential barriers to fish passage in Taranaki. Investigations confirmed that there were 61 dams and weirs that represented a barrier to fish passage.



Through the consents process, modifications of this culvert on the Te Henui Stream involving the fitting of a fish pass ramp and wooden wedges to the floor have greatly enhanced fish passage

⁴³ Taranaki Regional Council. ‘Pest Animal Management Annual Report 2002/2003’.

⁴⁴ Taranaki Regional Council: ‘Taranaki – Our Place, Our Future’. 2003.

⁴⁵ Taranaki Regional Council. ‘Dams, Weirs and Other Barriers to Fish Passage in Taranaki’. 2001.

Subsequent to these investigations, the Taranaki Regional Council has, through the resource consents process, advocacy and/or the Environmental Enhancement Grants Scheme, caused 10 fish barriers to be removed or have fish passes installed.

Since 2001 the number of structures believed to impede fish passage has been reduced to 51.⁴⁶ The Taranaki Regional Council is continuing discussions with consent holders and adjacent landholders of unconsented structures about options for providing fish passage at a number of other structures.

5.3.5 Riparian and land management programmes

The Taranaki Regional Council's riparian management and sustainable land management programmes also have significant benefits for enhancing indigenous biodiversity.

Dairy farmers with the assistance of the Taranaki Regional Council (which provides property plans and on-going advice) are retiring, fencing and planting the riparian margins of rivers and streams on the ring plain. Over the last decade, the Council has prepared over 700 riparian plans covering the planting (largely natives) and fencing of over 2,500 kilometres of river and stream banks.⁴⁷ Progress in implementing riparian plans is closely monitored. The Council's database shows that some 90% of all plan holders are in the process of implementing the riparian works recommended in the plans.

The riparian management plans focus on the protection of rivers and streams. These plans set out recommendations for the retirement or re-vegetation of land along the banks of rivers and streams for the purpose of enhancing water quality. However, there are also significant benefits for enhancing indigenous biodiversity by enhancing freshwater habitats and by providing wildlife corridors from the coast to the Egmont National Park.

There is a strong demand for the Taranaki Regional Council's property planning service, which remains voluntary. The rate of uptake of riparian plans has been rapid and exponential (Figure 12).

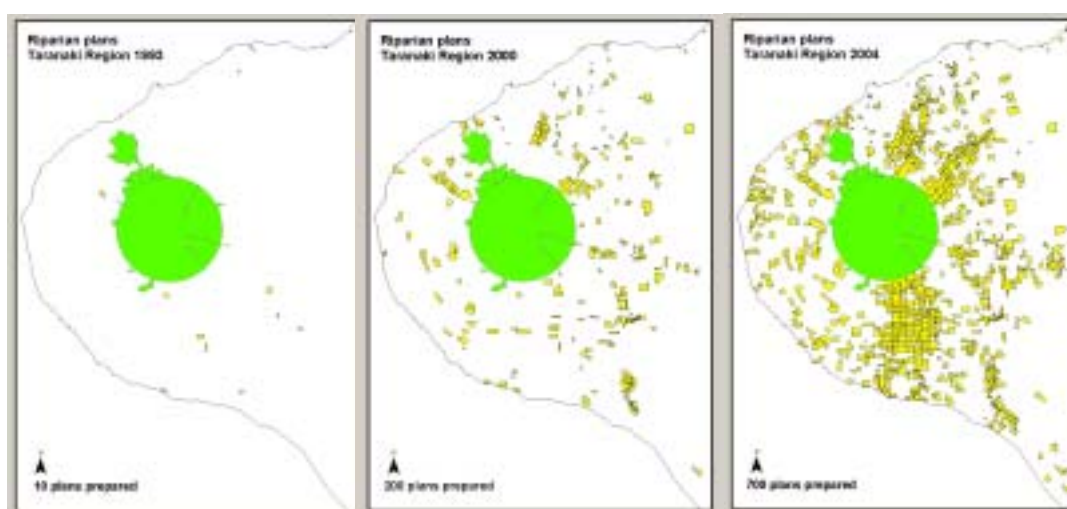


Figure 12: Riparian plans in the Taranaki region

⁴⁶ Taranaki Regional Council database. Statistics as at 30 October 2003.

⁴⁷ Taranaki Regional Council database. As at 1 July 2004.

Furthermore, the riparian management scheme is set for major expansion in the future. This will be driven, in part, by the Dairying and Clean Stream Accord – a national agreement among the dairy industry (Fonterra), regional councils, the Ministry for the Environment and the Ministry of Agriculture and Forestry. It focuses on reducing the impacts of dairying on New Zealand’s rivers, streams and wetlands by excluding dairy cattle from waterways, managing fertiliser applications and protecting wetlands. The Council anticipates that in conjunction with the dairy industry almost all ring plain river and streambanks will be fenced and planted within 10 years.

The Taranaki Regional Council provides a similar property planning service for farmers in the hill country. Comprehensive farm plans prepared by the Council in conjunction with landholders cover all aspects of a farming operation including land and stock management, while maximising the productive capability of the property. The plans contain land use and management recommendations including, where appropriate, advice on protecting or retiring indigenous vegetation cover on erosion prone land and undertaking pest and weed control. The plans are based on a detailed land resource capacity inventory including an analysis of soils, geology, vegetation, slope and erosion. The Council also prepares conservation plans for properties with individual site-specific issues or problems such as sand restoration and wetland protection.

Again, these plans are entirely voluntary yet demand for them continues to grow. Already over 180 plans covering almost 50% of the privately-owned land in the hill country have been prepared.

In addition to its property planning service, the Taranaki Regional Council supports holders of property plans by making plants (mostly natives) available at low cost. The first year of the plant scheme was in 1996/97 in which 15,600 plants were provided. Since then there has been a significant upsurge in landholder interest. In total, over 401,000 plants have been provided to plan holders since 1996/97, with 115,000 plants provided in 2002/03. This planting season, it is estimated that 200,000 plants will be needed, making it one of the largest native plant planting programmes in New Zealand.

5.4 District councils

All three district councils in the Taranaki region (these being New Plymouth District Council, Stratford District Council and the South Taranaki District Council) undertake a range of actions and programmes to maintain or enhance indigenous biodiversity in their district.

5.4.1 New Plymouth District Council

New Plymouth District Council has identified, and listed in the *Proposed New Plymouth District Plan*, 75 ‘significant natural areas’ on privately owned land in its district. In 1998, at the time of notifying the District Plan, 47 (or 63%) of these were formally protected and 28 were unprotected. Since that time, two of the unprotected significant natural areas have been formally protected.

Through its District Plan, the New Plymouth District Council has adopted a non-regulatory approach to the management of significant natural areas. However, the

effects of subdivision proposals on any significant natural areas are considered in assessment criteria for that proposal and the District Plan provides an incentive of one extra allotment for land owners of significant natural areas that are subdividing and formally protect the significant natural area through a covenanting technique.

To ensure that the objectives and policies of the Proposed District Plan are achieved, the New Plymouth District Council has implemented a Significant Natural Areas landowner liaison programme and an incentives programme to encourage the formal protection of areas of bush. The incentives programme includes annual funding through the Heritage Protection Fund and rate relief for formally protected areas.

The New Plymouth District Council is also a significant manager of parks and reserves and undertakes pest and weed control and species (indigenous and exotic) in those areas.

5.4.2 South Taranaki District Council

The South Taranaki District Council has identified 35 significant natural areas, which are listed in the Partially Operative South Taranaki District Plan. The significant natural areas are restricted to land, which is wholly, or partly, in private ownership and not legally protected by conservation covenants.

Through its District Plan, the South Taranaki District Council has established the Significant Natural Areas Programme. The District Council's Programme focuses on advice, information and support to promote the voluntary protection of indigenous vegetation in south Taranaki. Financial assistance through the Significant Natural Area's Fund is also available (in 2002/03, \$25,000 was committed to projects that protected or enhanced significant natural areas).

As at February 2004, the South Taranaki District Council has approved financial assistance towards 13 protection or enhancement projects. Five of these projects involved significant natural areas for which the District Council contributed 50% towards the fencing costs. Through the subdivision consent process the District Council has also successfully negotiated the formal protection of three pieces of significant indigenous vegetation.⁴⁸

As a 'back-up' to the above programme the District Plan contains rules that control land use aspects of an activity that may adversely impact upon the 35 significant natural areas. The South Taranaki District Council also acknowledges the importance of coastal herb field sites contained within its Coastal Protection Area. Activities that impact on these sites are addressed by the discretionary rule for the Rural Zone.

The South Taranaki District Council is also a significant manager of parks and reserves and undertakes pest and weed control and species (indigenous and exotic) in those areas.

5.4.3 Stratford District Council

The Stratford District Council, through its District Plan, implements rules to control the harvesting and clearance of indigenous vegetation throughout the district. The

⁴⁸ South Taranaki District Council: 'Significant Natural Areas'. February 2004.

District Council also manages its parks and reserves and undertakes pest and weed control and manages flora species (indigenous and exotic) in those areas.

5.5 Ministry of Agriculture and Forestry

The Ministry of Agriculture and Forestry licenses, administers and enforces compliance with the Forests Act. The Forest Act, as amended in 1993, brings to an end the unsustainable harvesting and clear felling of indigenous forest is prohibited. Indigenous timber may still be milled but only from forests sustainably managed according to sustainable plans or permits.

The Indigenous Forest Unit, located in Christchurch has approved four Sustainable Forestry Plans (covering 1,624 hectares) and 47 registered Sustainable Forestry Permits (covering 8,420 hectares) for the selective logging of indigenous forests in Taranaki.

The Ministry of Agriculture and Forestry also have responsibilities under the Biosecurity Act for border security and, in particular, the enforcement of import rules and border controls, surveillance for new exotic pests and, as necessary, eradication and other control actions in response to incursions of new exotic pests. To date there has been no eradication action by the Ministry in response to incursions of new exotic pests in Taranaki.

5.6 Non government organisations

5.6.1 Queen Elizabeth the Second National Trust

The Queen Elizabeth the Second National Trust (QEII) administers a total of 86 open space covenants in the Taranaki region. An open space covenant is a legally binding agreement between the landholder and the Trust to maintain an area of land or water as open space in perpetuity. The landholder retains ownership and management of the land with the Trust offering management advice and support to protect natural features.

The open space covenants in Taranaki cover approximately 1,442 hectares.⁴⁹ Almost 70% of these covenants are in lowland areas. The remainder are in semi-coastal or coastal areas. The covenants are mainly forest or forest remnant ecosystems. Many of the forests and forest remnants also contain wetland areas.

Monitoring covenants is an important function of QEII. Visits occur regularly, usually once every two years. Reports detail the ecological condition, trends, any threats and ensures covenant objectives are being met. National statistics show that adherence to covenant conditions is high with more than 82% of landholders exceeding the terms and conditions of their covenants. Monitoring statistics show that the decline in indigenous biodiversity has been halted or reversed in 95% of covenanted areas.

⁴⁹ Queen Elizabeth II National Trust. 'Open Space'. December 2003.

5.6.2 Taranaki Tree Trust

The Taranaki Tree Trust is a regional charitable trust (administered by the Taranaki Regional Council) dedicated to the preservation and development of Taranaki's natural ecosystems and landscapes.

The Taranaki Tree Trust was established in 1992 and works with landholders and other agencies to protect (fence, covenant or purchase) forest and wetland remnants, riparian margins and other wildlife habitats. The important thing for Taranaki is that the Trust concentrates solely on projects that do not meet national funding criteria for the protection or enhancement of biodiversity.

In 2002/03, the Taranaki Tree Trust provided financial assistance for the protection of a petrel colony at Rapanui, including the construction of a predator proof fence. Financial assistance was also provided to assist in the protection, restoration and enhancement of six forest remnants or wetlands under QEII covenant. The Trust further organised a public planting day involving the retirement and planting of a small forest remnant at Mangamingi. Since its establishment in 1992 the Trust has spent almost \$500,000 on preserving and developing Taranaki's natural ecosystems and landscapes.⁵⁰

5.6.3 Taranaki Kiwi Trust and the Lake Rotokare Reserve Trust

The Taranaki Kiwi Trust, a registered charitable trust, was established in 2001 following concerns expressed with the decline of the North Island brown kiwi in Taranaki. The mission of the Trust is to promote and facilitate the protection of sustainable populations of kiwi in Taranaki through education and awareness and the direct protection of kiwi populations in Taranaki. The Trust has, amongst other things, assisted the Department of Conservation to undertake mustelid control in the Egmont National Park to protect the North Island brown kiwi.

The Lake Rotokare Reserve Trust is another charitable trust and was established by local land owners and other interested parties to promote the restoration of the natural environment of the Lake Rotokare Scenic Reserve. So far the Trust has participated in pest control operations in the Reserve and is committed to undertaking further control and other measures to establish a 'mainland' island for native plants and animals including the North Island brown kiwi.

5.6.4 Fish and Game Council

The Fish and Game Council is a Crown entity, established under the Conservation Act. The Fish and Game Council has statutory responsibilities for the management of freshwater sport fishing and gamebird hunting. As part of its responsibilities the Fish and Game Council sets fishing and hunting regulations and manages the control of waterfowl and upland gamebirds.

In relation to indigenous biodiversity, the Fish and Game Council regulates the control of some native birds not absolutely protected such as pukeko. The Council is also actively involved in advocating for and promoting the protection of habitats of sports fish and gamebirds such as wetlands.

⁵⁰ Taranaki Tree Trust. 'Annual Report of the Taranaki Tree Trust'. Taranaki Tree Trust, (2002/03), (2001/02), (2000/01), (1999/2000), (1998/99), (1997/98), (1996/97), (1995/96), (1994/95), (1993/94), (1992/93).

5.6.5 Royal Forest and Bird Protection Society of New Zealand

The Royal Forest and Bird Protection Society of New Zealand is New Zealand's largest non-government organisation with local branches in Taranaki. Its mission is to preserve and protect the native plants and animals and natural features of New Zealand.

The Society has a strong advocacy role and helps to raise funds that go directly towards saving chosen threatened birds such as kiwi and kakapo, plants and their habitats.

5.7 Private landholders

Outside public conservation areas, the brunt of the costs associated with protecting natural values is borne by private landholders. Almost half of Taranaki's indigenous vegetation (approximately 143,000 hectares) is privately owned.

As noted in sections 5.6.1 and 5.6.2 above, Much of the work undertaken by landholders is unseen by the wider public. Nevertheless it is considerable. It may range from voluntarily retiring and foregoing opportunities to develop and use natural areas to the creation of wetlands, the planting of riparian margins in native trees and the undertaking of expensive and time consuming pest control on natural areas on their property. It is also demonstrated by the many landholders that have covenanted their land to protect native plants and animals through to their support and participation in initiatives by non-government organisations such as the Taranaki Tree Trust, Taranaki Kiwi Trust and the like. Landholders in Taranaki are spending in excess of \$5 million each year on pest plant and animal control alone.⁵¹

⁵¹ *Business and Economic Research Ltd: 'Community Investment in Environmental Improvements in Taranaki'. 2002.*

6. The Taranaki Regional Council – where to from here?

Many organisations under different statutes have responsibilities for maintaining indigenous biodiversity. This section addresses what contribution the Taranaki Regional Council can make to maintaining indigenous biodiversity having regard to its statutory responsibilities, the issues and how to best integrate its activities with the activities and responsibilities of other key players.

This section outlines the Taranaki Regional Council's preferred management approach, including the principles and proposed management actions to address indigenous biodiversity. Draft objectives, policies and methods of implementation that may be included in the *Regional Policy Statement for Taranaki* are also presented.

6.1 Management principles

To meet its enhanced responsibilities for maintaining indigenous biodiversity, Taranaki Regional Council policies and programmes require further attention. Reversing almost one thousand years of declining indigenous biodiversity will take time and require considerable effort – not just by this Council but all key players.

In terms of the Taranaki Regional Council's contribution to maintaining indigenous biodiversity, a combination of methods and tools are proposed for inclusion in the Council's reviewed *Regional Policy Statement for Taranaki*. In the consideration of the 'appropriateness' of its objectives, policies, methods and management programmes to achieve the Council's responsibilities for indigenous biodiversity, the Council will be guided by the principles set out in Table 6.

Table 6: Principles for managing Taranaki's indigenous biodiversity

Principles	Explanation
Work with land owners	Council will endeavour to obtain & support the goodwill, co-operation and individual commitment of landholders to maintain or enhance indigenous biodiversity on private land. Given the right support and incentives, & the means, landholders make the most effective stewards of land & of the biodiversity associated with it. Unfair or unreasonable impositions on perceived property rights &/or inadequate consultation are not likely to sustain indigenous biodiversity long term.
Lawful	Council objectives, policies & methods will give effect to its statutory responsibilities and will not be inconsistent with the purpose & principles contained in relevant statutes, regulations & national policy statements
Effective & efficient	Council programmes will be implemented in a cost-effective manner that achieves Council objectives & policies, including minimal compliance costs
Equitable	Council programmes will not impose unacceptable costs or benefits on one sector & not others
Strategic	Council programmes will target regionally significant natural areas on private land where the benefits of regional intervention will outweigh the costs

Active management	Because of the high incidence of introduced pests and weeds & the degraded state of much of our remaining habitat, passive management (ie, avoiding actions that are detrimental to biodiversity) will not be enough to halt the decline. Active management (such as pest management, weed control, planting & fencing) is needed to sustain biodiversity
Work with other agencies	Other agencies have statutory responsibilities or role in the management of indigenous biodiversity and contribute to biodiversity goals. The Council actions are in addition to actions that will be undertaken by other agencies and, where appropriate, the Council will endeavour to co-ordinate and collaborate with other management agencies to maximise benefits of respective efforts.

6.2 Management actions

To meet its responsibilities for indigenous biodiversity, and in accordance with the principles set out in section 6.1 above, the Taranaki Regional Council is proposing to undertake, or investigate undertaking, the following priority actions.

6.2.1 Action One: Review the Regional Policy Statement

The Taranaki Regional Council will review the Regional Policy Statement for Taranaki and include the region's agreed objectives, policies and methods for the Council to implement to maintain indigenous biodiversity in the region.

Explanation

The *Regional Policy Statement for Taranaki for Taranaki* has been operative just over nine years. Under section 79 of the Resource Management Act, the Taranaki Regional Council must begin a full review of its Regional Policy Statement no later than ten years after it became operative.

The Taranaki Regional Council is in the process of reviewing the *Regional Policy Statement for Taranaki*. Indigenous biodiversity is currently addressed as a number of issues in the Regional Policy Statement. In the land section of the Regional Policy Statement there are objectives, policies and methods addressing significant areas of indigenous vegetation and habitats of flora and fauna. In the freshwater and marine sections of the Regional Policy Statement there are objectives, policies and methods addressing water levels and flows, water quality, wetlands, fish passage and adverse effects on natural values. However, a review of these provisions is timely – particularly as the Council proposes to adopt a more significant role to reflect its enhanced management responsibilities for maintaining indigenous biodiversity.

National policy statements

Central government is currently in the process of preparing a 'National Policy Statement for Indigenous Biodiversity'.

Of note is that regional policy statements cannot be inconsistent with the national policy statement. Furthermore, local authorities must take such other action as may be necessary to implement the National Policy Statement including (but not limited to) amending their plans or policy statements (section 55(1)(b) of the Resource Management Act).

The identification of indigenous biodiversity as a separate issue in the revised *Regional Policy Statement for Taranaki* and the inclusion of appropriate objectives, policies and methods have five practical effects:

- the process of reviewing the Regional Policy Statement provides an opportunity for the wider public to have input and participate in the development of objectives, policies and methods relating specifically to indigenous biodiversity;
- objectives and policies adopted in regional and district plans cannot be inconsistent with the Regional Policy Statement;
- consenting authorities must have regard to the Regional Policy Statement when considering resource consent applications. This will influence whether activities impacting upon indigenous biodiversity will be consented and the conditions that will be imposed;
- councils, through the Regional Policy Statement provide a commitment as to how objectives and policies will be achieved and provides certainty and clarity to resource users and the wider community; and
- through the Regional Policy Statement, administrative processes and systems can be established to promote more effective integrated management between the various management agencies. To date, the lack of effective integrated management has been one of the factors in the ongoing decline in indigenous biodiversity.

Section 6.3 below presents draft objectives, policies and methods that are proposed for inclusion in the revised *Regional Policy Statement for Taranaki* that address issues relating to indigenous biodiversity.

6.2.2 Action Two: Administer rules and resource consents

The Taranaki Regional Council will:

- *include in regional plans and conditions on resource consents, provisions to maintain and enhance indigenous biodiversity in **fresh water and the coastal marine area** and protect them from inappropriate use and development; and*
- *advocate that territorial authorities include in district plans and conditions on resource consents, provisions to maintain and enhance indigenous biodiversity on **land** and protect them from inappropriate use and development.*

Explanation

Under the Resource Management Act, both the Taranaki Regional Council and the district councils have responsibilities for controlling the adverse effects of inappropriate use and development on indigenous biodiversity. Accordingly there is considerable potential for both parties to duplicate administrative and consenting processes and systems and therefore impose undue costs on not only the resource user but also on the respective councils (and ultimately the ratepayer).

To avoid duplicating administrative responsibilities, both the Taranaki Regional Council and the district councils should confine their rules regime to separate jurisdictional areas that best reflects their statutory duties, experience and expertise. For the Council, this relates to permitting, controlling or prohibiting use and development activities that may impact on indigenous biodiversity values in freshwater and the coastal marine area. For district councils, this relates to permitting, controlling or prohibiting use and development activities that may impact on indigenous biodiversity values on land.

The proposed delineation of management responsibilities for indigenous biodiversity will require discussions with the district councils and should be confirmed through the Regional Policy Statement.

6.2.3 Action Three: Identify regionally significant natural areas

The Taranaki Regional Council will identify and record the nationally and regionally significant natural areas and waterbodies in the Taranaki region.

Explanation

The Taranaki Regional Council proposes to adopt a targeted approach to indigenous biodiversity. A targeted approach recognises that resources are limited and that some areas are more highly valued or at risk than others. A targeted approach allows finite resources to be targeted at the most important areas first. That is not to say that other areas are ignored – policies and methods will promote the maintenance and enhancement of biodiversity values throughout the region, but emphasis will be placed on the most significant or at risk values first.

As a first step in gauging its ecological priorities and where to best direct finite resources, the Council, in consultation with interested and affected parties, proposes to develop inventories that identify the region's most significant assets in terms of indigenous biodiversity. Such areas include critical habitats for acutely threatened species, habitats that are nationally uncommon or significantly reduced, or are particularly valued as being one of the best representative examples of its type. The inventories should address land, freshwater and coastal areas, so that they may be targeted for both passive and active management.

In relation to land, an Inventory would provide baseline data on the location, size and associated values of significant natural areas. It is considered necessary for the purposes of more effective integrated management to identify all regionally significant areas – regardless of whether they are on private land or are a public conservation area. The identification of these areas will involve field surveys to determine their condition and to consult with affected landholders in relation to their proposed status and the implications to the landholder. This exercise has already largely been done by the Taranaki Regional Council (refer section 5.3.2 above) and district councils (refer section 5.4 above). Regular on-going monitoring and liaison with landholders should follow to identify threats and to determine changes in the condition of individual significant natural areas over time.

The preparation of an Inventory that identifies regionally significant freshwater systems or reaches of high conservation or biodiversity value is also proposed. Significant work has already been conducted to date by the Taranaki Regional Council with respect to defining important catchments in the Taranaki region,

Targeted versus comprehensive approach

In considering how it will implement these responsibilities, the Taranaki Regional Council proposes to adopt a targeted rather than a comprehensive approach.

A targeted approach seeks to focus on the 'more important' ecosystems, species and habitats. Implicit in such an approach is the belief that some areas, habitats or populations are more valuable than others. It accepts that some losses may be inevitable and seeks to ensure that any losses are restricted to less valuable ecosystems.

A comprehensive approach makes no distinction between any types of indigenous ecosystems, species and habitats – they all have equal value and the goal is to sustain them all.

which are contained in schedules in the *Regional Freshwater Plan for Taranaki*. However, criteria used to determine these catchments were based on values other than biodiversity and generally focus on ring plain streams and rivers. Accordingly, there is a need to develop criteria and commence an exercise similar to the above for all Taranaki streams and rivers. Such areas would address the presence of rare or endangered species, the importance of the area for fish spawning and so on.

In relation to the coastal marine area, the Taranaki Regional Council has already identified estuarine systems and other coastal areas of regional significance and has a rules regime in place that controls adverse effects from activities in these areas. To support policy decision making in relation to the coast, the Taranaki Regional Council has collated information on land tenure, values and public access in relation to these and other coastal areas or sites of local or regional significance. This information is contained in the *Inventory of Coastal Areas of Local or Regional Significance in the Taranaki Region*. Further investigations are not considered necessary at this stage.

6.2.4 Action Four: Use of financial incentives

The Taranaki Regional Council will, where appropriate, utilise financial incentives to promote the protection of indigenous biodiversity in Taranaki, with a priority on regionally significant natural areas on privately owned land.

Explanation

While many landholders are sympathetic to maintaining or enhancing indigenous biodiversity on their land, providing on-going protection (eg, fencing, planting, pest management and covenanting) can have significant costs. The Taranaki Regional Council is committed to working with landholders to maintain indigenous biodiversity in Taranaki. As part of that commitment the Council proposes the use of financial incentives to support landholder initiatives on a case by case basis – particularly in relation to its regionally significant natural areas.

The Taranaki Regional Council will consider expanding the funding criteria of its Environmental Enhancement Grant Scheme to not only protect wetlands and enhance fish passage, but also protect other areas that are regionally significant for biodiversity reasons. Any funding application for an Environmental Enhancement Grant would be considered on a case by case basis and its application could costs associated with:

- formally protecting land (eg, surveying and covenanting land);
- fencing land or waterways to exclude livestock; and
- removing ‘orphan’ structures that are barriers to fish passage.

To expand the Environmental Enhancement Scheme to include other ecosystems, and therefore potentially increase the cost of the Scheme, is considered to be appropriate given the wider community values associated with the areas being targeted and the significant biodiversity benefits anticipated.

In addition to the Environmental Enhancement Scheme, consideration could be given to rate relief where the landholder has formally protected land for biodiversity purposes. Other forms include the provision of native plants at low cost to landholders to promote the ecological functioning or connectability of

indigenous vegetation, the provision of pest control equipment or the undertaking of pest control (see section 6.2.5 below).

Of note is that the financial incentives would target private land. The Department of Conservation is separately funded and resourced to protect indigenous biodiversity in public conservation areas.

6.2.5 Action Five: Facilitate and undertake pest and weed control

The Taranaki Regional Council will facilitate or undertake pest and weed control on privately owned regionally significant natural areas where the Council is satisfied that:

- *the landholder has demonstrated a commitment to the protection of that area;*
- *the pest and weed control is sustainable in the long term; and*
- *the landholder has complied with relevant provisions set out in the 'Pest Management Strategy for Taranaki: Plants' and the 'Pest Management Strategy for Taranaki: Animals'.*

Explanation

Because of the high incidence of introduced pests and weeds and the degraded nature of much of our remaining habitat, regular and on-going pest and weed control is essential to protect and enhance natural values on regionally significant natural areas.

The Taranaki Regional Council proposes to support landholder efforts to protect regionally significant values on private land from pest and weed threats. In some areas, it would generally be unfair to leave full pest and weed control to the landholder. In recognition of the wider community benefits pertaining to national and regionally significant natural areas, pest and weed control is a community responsibility and community funded pest control based upon biodiversity priorities is appropriate. Assistance depends upon the landholder having complied with relevant rules and obligations contained in the pest management strategies (ie, there should be no assistance in cases where a landholder is failing to comply with the law or Council rules). The Council should also be satisfied that the benefits of pest and weed control are sustainable long term.



Pest control for possums

The Taranaki Regional Council will, in 2005/06 commence a review of its *Pest Management Strategy for Taranaki: Plants* and the *Pest Management Strategy for Taranaki: Animals* under the Biosecurity Act. At that time, the Council will consult with key stakeholders and the wider community about the pest and weeds to be targeted and the education, advisory, inspectorial, enforcement and or service delivery programmes considered necessary to reduce the impact of pest animals and plants on indigenous biodiversity values in Taranaki.

6.2.6 Action Six: Provide advice, information and advocacy

The Taranaki Regional Council will:

- *provide an advisory and planning extension service to promote and facilitate the protection of regionally significant natural areas on privately owned land;*
- *provide an advisory and planning extension service to promote and facilitate the protection of other natural areas on privately owned land;*
- *extend its environmental education programme to include matters relating specifically to indigenous biodiversity; and*
- *provide general advice and information on indigenous biodiversity in the Taranaki region to people and communities to enable them to make informed decisions and take appropriate action.*

Explanation

Advice and information is a necessary tool not just for the purposes of providing technical information to those already committed to maintaining or enhancing indigenous biodiversity but also to motivate and generate the support, participation and compliance of people not already committed to indigenous biodiversity.

The Taranaki Regional Council already provides an advisory and planning extension service targeting riparian planting and retirement and sustainable management in the hill country. The Council proposes to extend this service to promote the protection of indigenous biodiversity in regionally significant natural areas and, upon request, other areas. This service would involve liaising with interested landholders and preparing a conservation plan that sets out site-specific advice and a programme for maintaining and enhancing indigenous biodiversity values on that land. Implementation of the plan is at the discretion of the landholder. The Council would continue to provide regular and on-going advice and other assistance to support implementation of the plan, which includes the consideration of economic instruments (refer section 6.3.4 above) and the co-ordination or undertaking of pest and weed control (refer section 6.3.5 above).



Working with people – Council officers to provide property specific advice on measures that the landholder may take to voluntarily protect indigenous biodiversity on their land

In addition to property-specific advice, the Taranaki Regional Council will provide general advice and information on indigenous biodiversity. This may range from the preparation and distribution of pamphlets and information sheets through to training landholders and other interested parties in pest and weed control techniques. Information and advice is a means for ‘empowering’ and supporting landholder and community initiatives that contribute to indigenous biodiversity

outcomes. Information may also be used to motivate private land holders and the wider community to take action or achieve 'buy-in' to Council programmes and actions. This may be achieved in a number of ways including communicating and consulting on issues through policy documents and by reporting on monitoring outcomes and the effectiveness of Council activities in achieving desired biodiversity outcomes.

As part of its general advice and information the Taranaki Regional Council proposes to extend its environmental education programme, which focuses on the school sector, to include matters relating specifically to indigenous biodiversity. Through the Programme, the Council's Education Officer would provide resources, training and educational material on indigenous biodiversity. Other forms of support for teachers could include the Education Officer teaching to school children and participating on school field trips.



Tree planting by school children at Fitzroy

6.2.7 Action Seven: Undertake monitoring, gather and maintain information
The Taranaki Regional Council will monitor and gather and maintain information on the condition of significant natural areas and habitats on private land in the Taranaki region.

Explanation

Accurate and reliable information, either through research or monitoring, is essential to underpin management policies and actions. To address some of the gaps in information, the Taranaki Regional Council proposes to establish arrangements with relevant national agencies such as the Department of Conservation and Ministry of Fisheries to share information relating to native plant and animal species particularly the presence/absence etc of native plant and animal species. This information is vital for assessing biodiversity values and threats and determining regional priorities and management actions.

It is also proposed to gather information in relation to regionally significant natural areas and maintain and regularly update that information on the Council's databases.

As need be the Taranaki Regional Council will also commission research agencies to gather the information or undertake research on areas where there is a paucity of information and such information is necessary to support its decision making.

6.2.8 Action Eight: Promote integrated management
The Taranaki Regional Council will, where appropriate, liaise, co-ordinate and co-operate with other agencies to promote complementary, efficient and effective management responses to maintain and enhance indigenous biodiversity in the Taranaki region.

Explanation

The aim of integrated management is to minimise the effects of cross boundary issues and promote complementary, efficient and effective management responses.

Many agencies undertake a variety of actions and programmes to maintain or enhance indigenous biodiversity. However, biodiversity management is fragmented and there are significant gaps that need to be addressed if all component parts of indigenous biodiversity are to be maintained. The challenge to maintain and enhance indigenous biodiversity in the Taranaki region is bigger than any one agency. Accordingly, there is a need to marshal the players – ensuring each contributes according to their statutory duties, capacity and expertise.

To promote more effective integrated management in relation to indigenous biodiversity in the Taranaki region, the Taranaki Regional Council proposes to adopt the following measures:

- establish appropriate memorandum of understandings clarifying respective regulatory roles and responsibilities for indigenous biodiversity on land, in freshwater and in the coastal marine environment;
- establish appropriate memorandum of understandings relating to the undertaking of pest and weed control, the sharing of information and other administrative matters;
- advocate and encourage other authorities to adopt policies, practices or measures that will maintain or enhance indigenous biodiversity in the Taranaki region;
- when preparing or reviewing the *Regional Policy Statement for Taranaki*, regional plans or pest management strategies, the Council will have regard to any relevant national policy statement, standards or pest management strategy;
- co-ordinate pest management operations with the Department of Conservation and other agencies, where practicable and there is agreement on the benefits and the apportionment of costs;
- liaise, as appropriate, with district councils, the Department of Conservation over indigenous biodiversity issues that are best dealt with at a national or regional level;
- liaise with and support, as appropriate, the Taranaki Tree Trust and Kiwi Trust and other stakeholders to promote the maintenance and enhancement of values associated with natural areas not identified as nationally or regionally significant;
- make submissions in respect of relevant strategies, plans and other documents prepared by other authorities; and
- undertake ongoing communication, consultation and liaison.

Set out in Figure 13 below is a model for addressing the integrated management of indigenous biodiversity in the future. Appendix II provides further explanation on the respective tasks for managing indigenous biodiversity in the future.

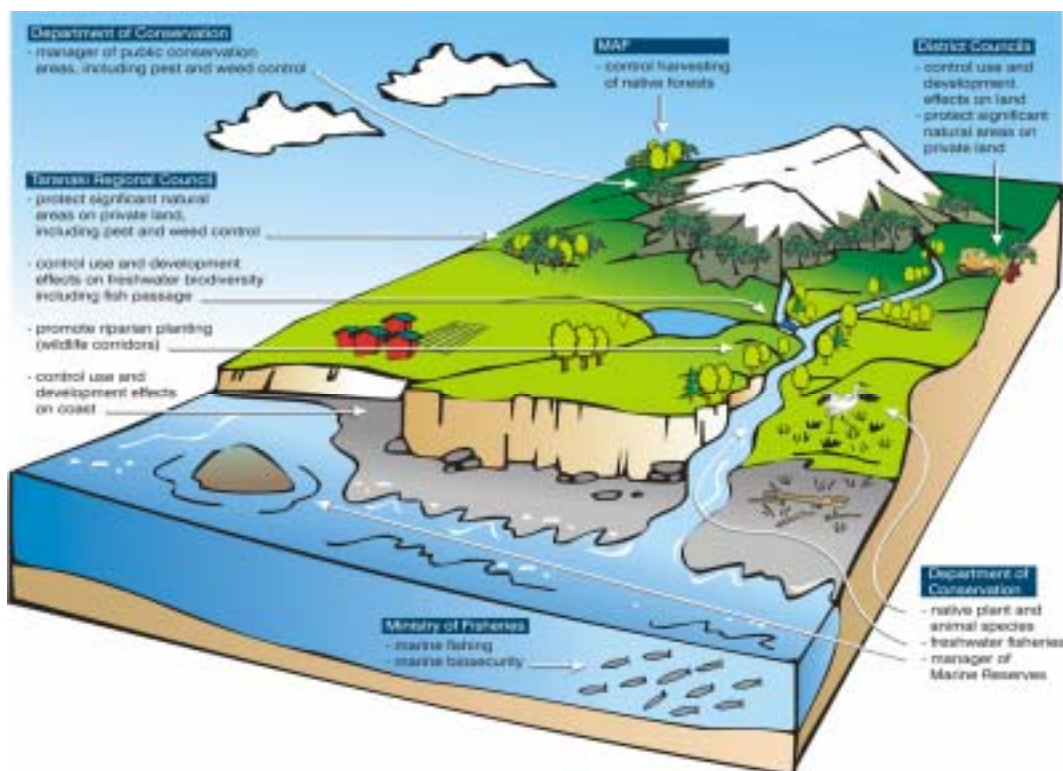


Figure 13: Integrated management of indigenous biodiversity in the Taranaki region

6.3 Draft objectives, policies and methods proposed for inclusion in the Regional Policy Statement

A preliminary review of the *Regional Policy Statement for Taranaki* notes that many of the policies and methods of implementation in the Regional Policy Statement relating to indigenous biodiversity still apply.

However, some changes to the relevant provisions of the Regional Policy Statement are considered appropriate given the Taranaki Regional Council's and district councils' enhanced responsibilities for indigenous biodiversity and the adoption of the New Zealand Biodiversity Strategy. Accordingly, it is proposed to amend the Regional Policy Statement to identify the maintenance of indigenous biodiversity as a 'stand-alone' issue incorporating land, freshwater and coastal ecosystems and to include

Section 32 analysis

There are many options available to the Taranaki Regional Council to implement the objectives and policies it sets in its Regional Policy Statement for Taranaki. These range from 'doing nothing', to the preparation of rules and the consideration of economic instruments.

Before publicly notifying its revised Regional Policy Statement, the Council is required by section 32 of the Resource Management Act to consider the extent to which each objective is the most appropriate way to achieve the purpose of the Act, whether the policies and methods are the most appropriate in terms of their efficiency and effectiveness, the benefits and costs of policies and methods and the risk of acting or not acting if there is uncertain or insufficient information on the subject matter.

Appendix III outlines the section 32 evaluation of the benefits and costs of different methods in relation to indigenous biodiversity.

‘stronger’ methods of implementation policies and methods that give effect to the management principles and approach proposed in sections 6.1 and 6.2 above.

Set out below for your consideration are the draft objective, policies, methods of implementation and environmental results anticipated proposed for inclusion in the *Regional Policy Statement for Taranaki*. Note that other policies and methods, not addressed in this section of the report, may also contribute to biodiversity outcomes. These include policies relating to riparian vegetation, fish passage, public access etc, which are addressed under other issues such as water quality.

Objective

To enhance indigenous biodiversity in habitats that have regionally significant values and maintain indigenous biodiversity values in places where it has been degraded.

Policies

Promotion of indigenous biodiversity

POL 1 *The maintenance, enhancement and restoration of indigenous biodiversity will be promoted throughout the Taranaki region.*

Adverse effects on indigenous biodiversity

POL 2 *Significant adverse effects on indigenous biodiversity in the Taranaki region arising from the use and development of natural and physical resources will be avoided, remedied or mitigated.*

Significant natural areas or habitats

POL 3 *Priority will be given to the protection, enhancement or restoration of natural areas, waterways, wetlands and coastal areas (including aquatic habitats), which are recognised for their regionally significant indigenous biodiversity values.*

POL 4 *When identifying natural areas, waterways, wetlands and coastal areas with regionally significant indigenous biodiversity values, the following matters will be considered:*

- *the areal extent of the indigenous vegetation or of the habitat for indigenous fauna;*
- *the quality of the indigenous vegetation or of the habitat for indigenous fauna species;*
- *the occurrence of threatened and naturally uncommon indigenous flora and fauna;*
- *the importance of the habitat or ecosystem for the continued survival, maintenance or recovery of indigenous flora and fauna that is threatened or naturally uncommon;*
- *the importance of the habitat or ecosystem for the continued functioning of ecological processes including those aspects important to migratory species or species at different stages of their life cycle;*
- *the habitat or ecosystem is exceptional in terms of it being representative of that type of habitat or ecosystem within the ecological region or in terms of the abundance or variety contains particular indigenous species present; and*

- the area contains habitats or ecosystems of a type that are rare or uncommon nationally or within the ecological region.

Other natural areas or habitats

POL 5 Recognition will be given to the maintenance, enhancement or restoration of indigenous biodiversity in Taranaki not covered by Policies 3 and 4 above, but still important to the region for the continuing functioning of ecological processes including those aspects important to the maintenance and enhancement of:

- connections within, or corridors between, indigenous habitats and areas;
- wetlands and riparian margins;
- biological and genetic diversity;
- botanical, wildlife, fishery and amenity values;
- water quality, water levels and flows; and
- soils, minerals, nutrients or other physical factors or processes necessary for the survival of any indigenous flora or fauna species or community.

Eco-sourcing

POL 6 When re-establishment or restoration of indigenous vegetation and habitat is carried out, preference should be given to the use of local genetic stock.

Methods of implementation

The Taranaki Regional Council will:

- METH 1** Prepare and maintain a **schedule of regionally significant natural areas, waterways, wetlands and areas of significant or outstanding coastal value** and promote the protection of areas identified in the schedule.
- METH 2** Maintain a **schedule of potential fish barriers** and promote, facilitate or require measures to address any barriers to indigenous fish passage.
- METH 3** Consider the use of **financial incentives**, such as grants and subsidies, to promote the maintenance and enhancement of indigenous biodiversity including to:
- assist with the protection of natural areas and values on privately owned land with a priority on regionally significant natural areas; and
 - promote the maintenance of freshwater biodiversity including riparian planting and the removal or alteration of structures that are a barrier to indigenous fish passage.
- METH 4** Consider **pest and weed control** to protect indigenous biodiversity values on privately owned land with a priority on regionally significant natural areas.
- METH 5** Maintain a **regional plan or plans** with objectives, policies and methods of implementation addressing accelerated erosion, soil health, discharges to land, air and water, the taking of water, riparian management, use of river and lakebeds, the protection of wetlands and the management of the coastal marine area including estuaries and other areas of significant or outstanding coastal value.
- METH 6** Apply **regional rules** to regulate, mitigate or prohibit resource use and development activities that have potential or actual adverse environmental effects on indigenous flora and fauna in relation to **soil conservation, air quality, freshwater and the coastal marine area**.

- METH 7 Provide **technical advice, information and assistance** through the Taranaki Regional Council's sustainable land management advisory services to promote:
- the voluntary protection and restoration of regionally significant natural areas;
 - the voluntary protection and restoration of other natural areas; and
 - the voluntary retirement and planting of riparian margin.
- METH 8 Provide **information and guidelines** to resource users and the public to generally promote awareness of:
- the principles and practices for protecting indigenous biodiversity;
 - the mechanisms for protecting natural areas;
 - the importance and values of regionally significant natural areas, waterways, wetlands and areas of significant or outstanding coastal value;
 - the benefits of and the techniques for undertaking riparian planting; and
 - techniques for constructing and maintaining in-stream structures in a manner that avoids or reduce adverse effects on instream values, fish passage and other users.
- METH 9 When implementing the Council's Riparian Management Programme and Sustainable Land Management Programme, **promote** the protection, re-establishment or restoration of areas of indigenous vegetation and habitats of indigenous fauna.
- METH 10 **Advocate** to relevant agencies, the use of other legislation or mechanisms (such as the Conservation Act 1987, the National Parks Act 1980, the Reserves Act 1977, the Queen Elizabeth the Second National Trust Act 1977, the Forest Heritage Trust Fund, the Fisheries Act 1983 and the Biosecurity Act 1993) to protect or restore areas of significant indigenous vegetation and habitats of indigenous fauna.
- METH 11 **Advocate** when appropriate, to relevant agencies, for the sustainable use of the marine environment and the establishment of **marine parks, protected areas and reserves** to protect areas with regionally significant indigenous biodiversity values.
- METH 12 Actively participate, as a trustee, in the affairs of the **Taranaki Tree Trust**, and provide servicing support to the Trust.
- METH 13 **Monitor and gather information** on the state of indigenous biodiversity, pressures on it, and responses to management.
- METH 14 **Encourage** central government and other relevant agencies involvement in research or investigations relating to indigenous biodiversity issues and seek the consolidation and sharing of existing and new information about indigenous biodiversity.
- METH 15 Promote **integrated management** of indigenous biodiversity in the Taranaki region by:
- liaising and maintaining linkages with territorial authorities, the Department of Conservation, the Ministry of Fisheries and other relevant agencies regarding indigenous biodiversity issues;
 - encouraging and facilitating, when appropriate, the development of joint databases and information systems and make available and exchange technical information and advice; and
 - undertaking joint initiatives where and when appropriate.

Territorial authorities may wish to consider the following methods:

METH 16 *Include in **district plans** and on **resource consents**, provisions or conditions for the maintenance, enhancement or restoration of indigenous biodiversity on land including methods relating to areas of significant indigenous or other vegetation and habitats of indigenous fauna.*

METH 17 *Provide **information and other assistance** to resource users and the public to generally promote the maintenance, enhancement and restoration of indigenous biodiversity.*

METH 18 ***Advocate**, as appropriate, the protection of areas of significant indigenous vegetation and habitats of indigenous fauna.*

Management responsibilities – indigenous biodiversity on land

*In accordance with section 62(1)(i)(iii) of the Resource Management Act, the three **territorial authorities** of the region will be responsible for developing objectives, policies and rules relating to the control of the use of land to maintain indigenous biodiversity except where control of the use of land relate to the Taranaki Regional Council's functions under the Act regarding:*

- *the coastal marine area; and*
- *the beds of rivers, lakes and other waterbodies.*

Environmental results anticipated

- ER 1** *The areal extent of indigenous ecosystems and habitats in the Taranaki region is maintained.*
- ER 2** *The number of regionally significant natural areas and habitats in the Taranaki region formally protected or covenanted is increased.*
- ER 3** *The ecological condition of regionally significant natural areas and habitats in the Taranaki region is maintained and enhanced.*
- ER 4** *The areal extent of planted riparian margins along Taranaki ring plain waterways is increased.*
- ER 5** *Indigenous fish passage in the Taranaki region is improved.*
- ER 6** *The life-supporting capacity of water, natural ecosystems and habitats of indigenous aquatic flora and fauna is maintained and enhanced.*
- ER 7** *The natural character of wetlands, rivers and lakes and their margins, and the coastal environment is maintained.*

7. Conclusion

Maintaining and enhancing New Zealand's indigenous biodiversity is an important issue. New Zealand boasts many unique and extraordinary species that are a result of New Zealand's isolated evolution and the diversity of its land and seascapes. However, since initial human settlement, New Zealand's indigenous biodiversity has been in a state of decline. Today there is general acceptance that we need to halt that decline.

Much is already being done by central and local government, individuals and the wider community but if we are going to reverse the decline then all parties will have to do more. While there are limits to what the Taranaki Regional Council can lawfully and practically achieve, nevertheless the Council believes it can make a meaningful contribution to maintaining and enhancing indigenous biodiversity in the Taranaki region.

The report before you proposes that the Taranaki Regional Council consider implementing eight key actions. These actions largely 'build' on existing successful programmes, rather than new initiatives. Some of these actions (eg, the review of the *Regional Policy Statement for Taranaki*, the administration of rules controlling adverse effects of use and development on the **coastal marine area and fresh water** or the identification of regionally significant natural areas) require little or no additional work or commitment of resources by the Council. However, three actions are proposed, which represent a major increase in the Council's contribution to maintaining and enhancing indigenous biodiversity in the Taranaki region. It is proposed that the Council:

- extend the Environmental Enhancement Scheme to not only protect wetlands and enhance fish passage but also to protect other types of habitat on private land that are recognised as being regionally significant;
- undertake pest and weed control to protect the values and enhance the condition of regionally significant natural areas on private land; and
- provide an advisory and planning extension service (in addition to the riparian and sustainable land management programmes) that promotes the protection of indigenous biodiversity with a particular focus on regionally significant areas on private land.

In the preparation of this report consideration was given to a variety of management approaches to maintain and enhance indigenous biodiversity. A regulatory approach was one option. The Taranaki Regional Council has largely adopted a regulatory approach for its responsibilities in relation to freshwater and the coastal marine area. However, it is not proposing to introduce objectives, policies or methods (including rules) for controlling land use for biodiversity reasons – this option remains with the region's three district councils with the Taranaki Regional Council taking a supporting role.

Finally, while many of the actions proposed by the Taranaki Regional Council are enhancements of existing programmes, rather than new initiatives. Nevertheless, together they represent a significant increase in biodiversity management effort by the Taranaki Regional Council. They also represent a continuation of the Council's preferred approach of working with and supporting people to effect change.

The Taranaki Regional Council welcomes your feedback on its review of its responsibilities in relation to indigenous biodiversity and its proposed approach. Please forward your comments to:

The Chief Executive
Taranaki Regional Council
Private Bag 713
Stratford

By Friday 27 August 2004.

Definition of terms

This section provides the meaning of words used in this report.

Acutely threatened species means a species facing a very high risk of extinction in the wild and includes nationally critical, nationally endangered and nationally vulnerable species.

Biological diversity means the variability among living organisms, and the ecological complexes of which they are a part, including diversity within species, between species, and of ecosystems.

Biosecurity means the exclusion, eradication or effective management of risks posed by pests and diseases to the economy, environment and human health.

Coastal marine area means the foreshore, seabed, and coastal water, and the air space above the water:

- (a) of which the seaward boundary is the outer limits of the territorial sea;
- (b) of which the landward boundary is the line of mean high water springs, except that where that line crosses a river, the landward boundary at that point shall be whichever is the lesser of:
 - (i) one kilometre upstream from the mouth of the river; or
 - (ii) the point upstream that is calculated by multiplying the width of the river mouth by 5.

Conditions, in relation to plans and resource consents, include terms, standards, restrictions, and prohibitions.

Consent authority means the Minister of Conservation, a regional council, a territorial authority, or a local authority that is both a regional council and a territorial authority, whose permission is required to carry out an activity for which a resource consent is required under the Act.

Ecological functioning means an ecological community together with its environment, functioning as a unit, an interacting system of living parts and non-living parts such as sunlight, air, water, minerals and nutrients.

Ecosystem means an ecological community together with its environment, functioning as a unit, an interacting system of living parts and non-living parts such as sunlight, air, water, minerals and nutrients.

Effect includes:

- (a) any positive or adverse effect; and
- (b) any temporary or permanent effect; and
- (c) any past, present or future effect; and
- (d) any cumulative effect which arises over time or in combination with other effects regardless of the scale, intensity, duration or frequency of the effect; and also includes:
- (e) any potential effect of high probability; and
- (f) any potential effect of low probability which has a high potential impact.

Endangered species means species in danger of extinction and whose survival is unlikely if the causal factors continue operating.

Endemic species means an indigenous species, which breeds only within a specified region or locality and is unique to that area.

Environment includes:

- (a) ecosystems and their constituent parts, including people and communities; and
- (b) all natural and physical resources; and
- (c) amenity values; and
- (d) the social, economic, aesthetic, and cultural conditions which affect the matters stated in (a) to (c) of this definition or which are affected by those matters.

Environmental enhancement grant means the fund established and operated by the Taranaki Regional Council to assist private landholders to manage, maintain and preserve natural values.

Environmental results anticipated means the expected or foreseen result or outcome on the environment as a consequence of implementing the policy or policies and methods of implementation. It provides a means of assessing the success of the objectives, policies and methods, but may not always be measurable or achievable within the operative life of the plan.

Exotic means introduced, not native.

Fauna means all the animal life of a given place or time.

Flora means all the plant life of a given place or time.

Fresh water means all water except coastal water and geothermal water.

Habitat means the place or type of area in which an organism naturally occurs.

Indigenous means native to New Zealand.

Indigenous vegetation means any local indigenous plant community containing throughout its growth the component of native species and habitats normally associated with that vegetation type or having the potential to develop these characteristics. It includes vegetation with these characteristics that has been regenerated with human assistance following disturbance, but excludes plantations and vegetation that has been established for commercial purposes.

Instream values are those uses or values of rivers and streams that are derived from within the river system itself and include amenity values, cultural and spiritual values of Tangata Whenua, and values associated with fresh water ecology and recreational, scenic, aesthetic and educational uses/values.

Integrated management means managing (ie, identifying, prioritising and acting on) the use, development and protection of natural and physical resources as a whole.

Integrated management involves three interrelated parts:

- (a) a recognition by management agencies that natural and physical resources exist as parts of complex and interconnected social and biophysical systems, where

- effects on one part of a system may affect other parts of the system and that these effects may occur immediately, may be delayed or may be cumulative; and
- (b) the integration of management systems between agencies so that the various roles and responsibilities of those agencies are clearly identified and combined or co-ordinated to achieve consistency of purpose; and
 - (c) the integration of management systems within agencies to ensure that other legislative or administrative actions are consistent with promoting sustainable management of natural and physical resources.

Invertebrate means an animal without a backbone or spinal column including insects, spiders, worms, slaters, corals, sponges and jellyfish. *See Vertebrate.*

Issue means a matter of concern to the region's community regarding activities affecting some aspect of natural and physical resources and the environment of the region.

Iwi means tribe or grouping of M•ori people descended from a common ancestor(s).

Lake means a body of fresh water, which is entirely or nearly surrounded by land.

Land includes land covered by water and the air space above land.

Local authority means a regional council or territorial authority.

Method of implementation means a specific action, procedure, programme or technique adopted to carry out a policy.

Natural character includes a range of qualities and features, which have been created and sustained by nature as distinct from those which have been constructed by people. The qualities and features which make up natural character may be ecological, physical, spiritual, cultural and aesthetic in nature and include modified and managed environments.

Naturally uncommon means a pattern of occurrence that is characterised by either a restriction in range or by a scattering of small areas, and is not the result of human activities.

Objective means a statement of a desired and specific environmental outcome.

Pelagic species includes fish, squid and marine mammals and refers to marine species that usually congregate in schools and which live in open water and away from the seabed.

Policy means a specific statement that guides or directs decision making. A policy indicates a commitment to a general course of action in working towards the achievement of an objective.

Public conservation area means areas managed by the Department of Conservation or other person under the Conservation Act 1987, National Parks Act 1980, Reserves Act 1977, or other act in the first schedule to the Conservation Act.

Rare species means a species with a small world population that is not, at present, endangered or vulnerable, but is at risk. These are usually localised within restricted geographical areas or are thinly scattered over a more extensive range.

Regionally significant natural areas means areas identified by the Taranaki Regional Council as having values and attributes of regional significance.

Ring plain means the plain surrounding Mt Taranaki/Egmont.

Riparian margin means a strip of land of varying width adjacent to a waterway and which contributes or may contribute to the maintenance and enhancement of the natural functioning, quality and character of the waterway and its margins.

River means a continually or intermittently flowing body of fresh water and includes a stream and modified watercourse, but does not include any artificial watercourse (including an irrigation canal, water supply race, canal for the supply of water for electricity power generation, and farm drainage canal).

Tangata Whenua in relation to a particular area, means the Iwi, or hapu, that holds mana whenua (customary authority and title) over the area.

Terrestrial means of or on dry land.

Threatened species means a species or community that is vulnerable, endangered or presumed extinct. The Department of Conservation has assessed threatened species in New Zealand (using criteria relating to taxonomic distinctiveness, status of the species, threats facing the species, vulnerability of the species, and human values), and ranked them into three categories (A, B and C) of priority for conservation action.

Vascular plants include ferns, flowering plants and trees, but do not include mosses and liverworts.

Vertebrate means animal with backbone including amphibians, reptiles, birds, mammals and fish. *See Invertebrate.*

Water:

- (a) means water in all its physical forms whether flowing or not and whether over or under the ground;
- (b) includes fresh water, coastal water, and geothermal water; and
- (c) does not include water in any form while in any pipe, tank, or cistern.

Wetland includes permanently or intermittently wet areas, shallow water, and land water margins that support a natural ecosystem of plants and animals that are adapted to wet conditions.

**Appendix I:
Rare and endangered species in the Taranaki region**

Table 7: Threatened and uncommon plants of the Taranaki region

Threatened			Declining	Recovering - conservation dependent	Naturally uncommon	
Critically endangered	Endangered	Vulnerable			Sparse	Range restricted
<p><i>Amphibromus fluitans</i> – a wetland grass (?)</p> <p><i>Limosella "Opunake"</i> – an aquatic herb (?)</p> <p><i>Sebaea ovata</i> – a gentian</p>	<p><i>Craspedia "Otakeho"</i> – a woolly-head daisy</p> <p><i>Crassula peduncularis</i> – a succulent herb</p> <p><i>Hebe speciosa</i> – titirangi (?)</p> <p><i>Lepidium oleraceum</i> – Cook's scurvey grass</p> <p><i>Pterostylis micomega</i>– Swamp hood orchid</p> <p><i>Rorippa divaricata</i> – a cress (?)</p>	<p><i>Gratioal nana</i> – a creeping herb</p> <p><i>Prasophyllum aff. Ranunculus recens var. recens</i> – a dwarf buttercup</p>	<p><i>Brachyglottis kirkii</i> – kohurangi</p> <p><i>Euphorbia glauca</i> – coastal spurge</p> <p><i>Marattia salicina</i> – king fern</p> <p><i>Myosotis petiolata var. pansa</i> – a forget-me-not</p> <p><i>Myriophyllum robustum</i> – giant milfoil</p> <p><i>Peraxilla coplensoi</i> – scarlet mistletoe</p> <p><i>Peraxilla tetrapetala</i> – red mistletoe</p> <p><i>Pimelea arenaria</i> "southern" – sand daphne (?)</p> <p><i>Sonchus kirkii</i> – native sowthistle</p>	<p><i>Dactylanthus taylorii</i> – wood rose or pua o te reinga</p> <p><i>Pomaderris apetala subsp. Maritima</i> – tainui</p>	<p><i>Olearia capillari</i> – a shrub daisy</p> <p><i>Oreomyrrhis "minutiflora"</i> – a turf 'carrot'</p>	<p><i>Crassula manaia</i> – a minute succulent</p> <p><i>Limosella "Manutahi"</i> – a succulent cliff-top herb</p>

Source: Department of Conservation, 2001. 'Conservation Management Strategy – Wanganui Conservancy'. 1997.

(?) = Presumed extinct in the Taranaki region

Table 8: Threatened animal species of the Taranaki region

Species		Threat category	Distribution in Taranaki	Key threats	Ongoing projects
Invertebrates	Black katipo spider <i>Latrodectus atritus</i>	Serious decline	Poorly known – probably reaches northern Taranaki	Habitat loss	<ul style="list-style-type: none"> National conservation requirements published.
	Katipo spider <i>Latrodectus katipo</i>	Serious decline	Southern coast of Taranaki – Waitotara area – occurs in sand dunes	Habitat loss – dune destruction, loss of mobile dune systems, invasion of dunes by weeds such as marram grass	<ul style="list-style-type: none"> National conservation requirements published.
	Moth – <i>Notoreas</i> 'Taranaki Coast'	Serious decline	South Taranaki coast in Manaia area – feeds on Pimelea in small, isolated coastal herbfields along south Taranaki cliffs	Habitat loss as coastal herbfields have been lost to agriculture & weed infestations	<ul style="list-style-type: none"> National conservation requirements published. Habitat containing foodplant maintained in patches on the coast – requires intensive hand weeding. Monitoring of moth occurrence at foodplant. Rearing of foodplant in nurseries to provide additional resource. Advocacy fact sheet completed.
	Forest ringlet <i>Dodonidia helmsii</i>	Gradual decline	Unknown	Unknown	No projects
Birds	Australasian bittern <i>Botarus poiciloptilus</i>	Nationally endangered (also threatened overseas)	Sparsely distributed in wetlands with large beds of raupo	Drainage of wetlands	No projects
	Blue duck, <i>Hymenolaimus malcorhychos</i>	Nationally endangered	Reintroduced population in Egmont National Park & surrounds	Introduced predators – primarily mustelids	<ul style="list-style-type: none"> Ongoing programme to re-establish a population in Egmont National Park. Programme involves annual transfer of captive-bred & wild-bred birds to the Park. Supported by mustelid trapping inside the Park (programme to run until 2007 and then to be reviewed). Recovery plan & strategy for central North Island in place.
	North Island kokako <i>Callaeas cinerera wilsoni</i>	Nationally endangered	Tiny remnant of former population remains. Probably less than 5 birds & almost certainly all old males. Remaining sites in the Waitaanga & possibly Moki-Makino	Introduced predators – primarily ship rats & possums	<ul style="list-style-type: none"> Long-term plan to reintroduce to Taranaki. Short-term issue is to remove any remaining birds to captivity to maintain Taranaki genetic stock. Study on reintroduction has been completed. Would require control of possums & ship rats to low levels. Recovery plan in place.
	North Island kaka <i>Nestor meridionalis septentrionalis</i>	Nationally endangered	Remnant population of birds scattered through large forest blocks of northern and eastern Taranaki. Also visiting birds from other parts of North Island outside the breeding season.	Introduced predators – primarily mustelids	<ul style="list-style-type: none"> No active management – conservation would require control of introduced predators over a large area. Research plan in place.
	Wrybill <i>Anarhynchus frontalis</i>	Nationally vulnerable	Occasional visitor to estuaries in spring & autumn	Introduced predators on South Island breeding grounds	No projects

	New Zealand falcon <i>Falco novaseelandiae</i>	Nationally vulnerable	Widely but sparsely distributed across Taranaki. Population declining	Not clearly understood – habitat loss & alteration and possible impacts of introduced predators.	No projects
	North Island brown kiwi <i>Apteryx mantelli</i>	Serious decline	Widely distributed through forested hill country of Taranaki also Egmont National Park. Population declining at an average rate of 5.8% per annum.	Introduced predators – primarily mustelids. Dogs are also a major threat in some areas. Habitat loss.	<ul style="list-style-type: none"> • Programme of mustelid control and Operation Nest Egg has started in Egmont National Park in collaboration with the Taranaki Kiwi Trust. Aims to halt decline in the Park and in the longer-term to increase the kiwi population. • Recovery plan in place.
	Yellow-crowned kakariki <i>Cyanorhamphus auriceps</i>	Gradual decline	Sparsely distributed through large forest blocks of central, eastern & northern Taranaki	Introduced predators – primarily ship rats & mustelids	No projects
	Long-tailed cuckoo <i>Eudynamys taitensis</i>	Gradual decline	Occurs in forested areas throughout Taranaki during breeding season	Decline of key host whitehead has resulted in decline of this species also habitat loss	No projects
	Kereru <i>Hemiphaga novaseelandiae</i>	Gradual decline	Occurs in forest and smaller habitat patches (incl. in urban areas) across Taranaki	Introduced predators – primarily ship rats, mustelids & possums. Habitat loss & illegal hunting may have local effects	<ul style="list-style-type: none"> • Research programme looking at movement, phenology of fruit trees, & the birds' use of habitat patches of various size and composition underway – based in New Plymouth.
	Sooty shearwater <i>Puffinus griseus</i>	Gradual decline	Breeds Sugar Loaf Islands	Introduced predators, long-line fishing	<ul style="list-style-type: none"> • Quarantine restrictions to prevent introduced predators colonising breeding island.
	Banded dotterel <i>Charadrius bicinctus bicinctus</i>	Gradual decline	Scattered along sandy coastline, estuaries. May be small influx of birds in winter from inland breeding sites	Introduced predators, habitat loss, disturbance	No projects
	Northern little blue penguin <i>Eudyptula minor irredalei</i>	Gradual decline	Breeds along suitable areas of coastline. Populations subject to severe fluctuations.	Introduced predators, habitat loss, disturbance	<ul style="list-style-type: none"> • Quarantine restrictions to prevent introduced predators colonising breeding islands in Sugar Loaf group.
	White-fronted tern <i>Sterna striata</i>	Gradual decline	Occurs along coast breeds Sugar Loaf islands	Introduced predators, habitat loss, disturbance	<ul style="list-style-type: none"> • Quarantine restrictions to prevent introduced predators colonising breeding islands in Sugar Loaf group.
Mammals	North Island long-tailed bat <i>Chalinolobus tuberculata</i>	Nationally vulnerable	Distribution poorly known but probably occurs through eastern & northern Taranaki	Habitat loss, predation	<ul style="list-style-type: none"> • Recovery plan in place.
Reptiles	Pacific gecko <i>Hoplodactylus pacificus</i>	Gradual decline	Distribution poorly known but probably occurs across much of Taranaki	Poorly known. Introduced predators?	No projects
	Speckled skink <i>Oligosoma infrapunctatum</i>	Gradual decline	Known from coastal area from Patea to Waverley	Poorly known. Introduced predators?	<ul style="list-style-type: none"> • DNA testing in progress as Taranaki/Wanganui animals appear to have different characteristics to other North Island populations. • Recovery plan in place.

Table 9: Species secure overseas but with threatened subspecies/populations in New Zealand

Species	Threat category	Distribution and status in Taranaki	Key threats	Ongoing projects
White heron <i>Egretta alba modesta</i>	National critical	Occasional visitor outside the breeding season	n/a	None – not required
Caspain tern <i>Sterna caspida</i>	Nationally vulnerable	Regular along coasts	n/a	None – not required
Grey duck <i>anas supercilliosa</i>	Nationally vulnerable	Small numbers on remote hill country lakes	Hybridisation with introduced mallard	None
Flesh-footed shearwater <i>Puffinus carneipes</i>	Gradual decline	Breeds in Sugar Loaf Islands	Introduced predators, long-line fishing	Quarantine restrictions to prevent introduced predators colonising breeding island
Killer whale <i>Orcinus orca</i>	Nationally critical	Occasional visitor	n/a	n/a

Source: Department of Conservation correspondence to the Taranaki Regional Council 1 April 2004.

At risk species occurring in Taranaki

The following indigenous fauna species occur in Taranaki and are regarded as at risk (sparse or range restricted). These are taxa not currently thought to be in decline but which are at risk of rapid declines should a new threat arise. Also on this list are data deficient species. These are taxa about which so little is known that it is difficult to assign it a threat category.

Table 10: At risk species in Taranaki

Sparse	Range restricted	Data deficient
Little black shag – secure overseas New Zealand dabchick North Island fernbird Northern New Zealand dotterel – recent breeding species on the coast near New Plymouth – active monitoring of productivity and predator control close to nest sites Banded rail Black shag Pied shag Marsh crake Spotless crake Goldstripe gecko	Central short-tailed bat – roost site in Waitaanga monitored annually Land amphipod <i>Tara</i> 'Taranaki' – occurs in Egmont National Park Powelliphanta 'Egmont' – occurs only in Egmont National Park – following evidence of predation by mustelids, mustelid control programme put in place	Striped skink <i>Oligosoma striatum</i> – poorly known – recent records inland from Stratford

**Appendix II:
Proposed model for integrated management of
indigenous biodiversity**

Table 11: Proposed model for integrated management of indigenous biodiversity

Functions & responsibilities		Lead agencies					Comments
		DoC	TRC	DCs	MoF	MAF	
Land (extent)	Manage public conservation areas	√					Comprises 20% of the region
	Formal protect privately owned significant natural areas		√	√			TRC target regionally significant natural areas District councils & others (eg, QUE II) target other natural areas
	Rules & regulations (private land)			√		√	DCs control use & development effects on land MAF controls harvesting of native forests
	Biodiversity advice, advocacy & information	√	√				DoC lead agency particularly for species management TRC to provide planning extension service promoting protection of regionally significant natural areas
Land (condition)	Pest & weed control	√	√				DoC on public conservation estate & species recovery work TRC for regionally significant natural areas
	Fencing, enhancement & assistance of privately owned significant natural areas		√	√			TRC & DCs for regionally significant natural areas
	Species recovery work	√					
Freshwater	Aquatic pest & weed control	√					
	Rules & regulations	√	√				DoC control freshwater fisheries TRC control use & development effects on freshwater
	Riparian management		√				TRC to provide planning extension service promoting protection of riparian planting to improve water quality & freshwater biodiversity & to provide wildlife corridors
	Improving fish passage		√				TRC to avoid, remedy or mitigate barriers to fish passage
	Advice, advocacy & information	√	√				DoC in relation to freshwater fisheries TRC in relation to freshwater habitats & riparian management
Marine	Biosecurity surveillance & response				√	√	
	Fishery management				√		
	Manager of marine parks & reserves	√					Only relates to Sugar Loaf Islands Marine Park at present. Proposal to establish a marine park off north Taranaki
	Rules & regulations	√	√		√		TRC & DoC are consenting authorities for use & development activities on the coast MoF control marine fishing
	Advice, advocacy & information	√	√		√		MoF in relation to marine biodiversity & biosecurity DoC in relation to coastal birds, plants animals & their habitats TRC in relation to coastal use & development activities

DoC = Department of Conservation
DCs = District councils
MoF = Ministry of Agriculture & Forestry

TRC = Taranaki Regional Council
MOF = Ministry of Fisheries

**Appendix III:
Section 32 evaluation of
proposed methods of implementation**

Section 32 evaluation of proposed methods

In preparing objectives, policies and methods for indigenous biodiversity for inclusion in the *Regional Policy Statement for Taranaki*, the Taranaki Regional Council is required by section 32 of the Resource Management Act to consider the extent to which any objective is the most appropriate way to achieve the purpose of the Act and whether the policies and methods are the most appropriate for achieving the objectives having regard to their efficiency and effectiveness and their benefits and costs.

Provision of general advice and information

The provision of general advice and information is a necessary tool not just for the purposes of providing technical information to those already committed to maintaining or enhancing indigenous biodiversity. It is also necessary to generate the support and increase the base of landholders that have an interest in, and a commitment to indigenous biodiversity.

Advice and promotional activities that may be adopted by the Taranaki Regional Council to promote the maintenance of indigenous biodiversity include:

- recognising and acknowledging the many good examples, achievements and contributions made by individuals to protect and enhance indigenous biodiversity;
- preparing property plans or providing information to landholders in response to individual enquiries on measures available to protect indigenous biodiversity;
- undertaking publicity and education programmes (in the form of media releases, newsletters, pamphlets and information sheets) promoting the maintenance and enhancement of indigenous biodiversity; and
- organising and participating in public walks, school visits and Coastcare groups to enhance public awareness and appreciation of the region's natural values.

Outlined in Table 12 below are the benefits and costs associated with the provision of advice and information.

Table 12: Benefits and costs of information provision

Benefits	Costs
<ul style="list-style-type: none"> • Recognises that the main issue associated with maintaining small remnant areas and protecting rare & endangered native plant & animal species is lack of public knowledge or appreciation • Encourages people to take responsibility for their actions • Useful method when solutions overlap or fall outside the jurisdiction of different statutory authorities, or require action by individuals • Assists the effectiveness & acceptability of other methods (such as regulation) • People respond better to being persuaded & encouraged to do what is right, than they do to compulsion • Reaches a large number of people in a short time & at a relatively low cost • Cheaper than other options such as works & services & economic instruments 	<ul style="list-style-type: none"> • Effectiveness dependent on the interpretation of the information by the target audience. If the information provided is unclear, incorrect or overly complicated, the efficacy of the method maybe decreased or nullified • Increased public awareness may result in unsuitable pressure on areas • Advice is neither compulsory nor enforceable – no action can be taken against those who choose not to accept it • Outcomes sought might take a while

Advocacy and sponsorship

Advocacy and sponsorship is the encouragement of, or request for, action on the part of other agencies or groups. Advocacy and sponsorship can be viewed as a stronger version of information provision or as information provision backed up by persuasion.

Advocacy and sponsorship involves the encouragement of industries, community groups and other organisations to undertake or fund works for a specific purpose. It may involve the development of partnerships between local authorities, central government, private landowners and the general public to protect or enhance indigenous biodiversity. Examples include covenanting privately owned land, sponsoring the erection of signs or construction of walkways, or the fencing and planting of natural areas.

Advocacy and sponsorship is most effective when the person or industry to which it is directed, is inclined towards, or not averse to, taking action anyway. As noted in Table 13 below it essentially has the same benefits and costs as information and promotion activities.

Table 13: Benefits and costs of advocacy and sponsorship

Benefits	Costs
<ul style="list-style-type: none"> • Encourages wider community participation • Is very targeted • Useful method when solutions overlap or fall outside the jurisdiction of different statutory authorities, or require action by individuals • Assists the effectiveness & acceptability of other methods (such as regulation) • People respond better to being persuaded & encouraged to do what is right, than they do to compulsion • Cheaper than other options such as works & services and economic instruments 	<ul style="list-style-type: none"> • Willingness of other parties to participate needs to be determined • Outcomes sought are dependent upon the interest of other – no guarantees that outcomes sought will be achieved • Outcomes sought might take a while

Provision of works and services

Indigenous biodiversity could be promoted through the provision of works and services. ‘Works’ are actual physical developments. ‘Services’ include such things as making staff available to provide planning or technical assistance or labour.

The Taranaki Regional Council already provides works and services that benefit indigenous biodiversity in Taranaki. For example, the Council provides comprehensive planning and technical assistance to landholders in its riparian management programme, sustainable hill country programme and its self-help possum control programme. In relation to the self-help possum control programme, the Council also undertakes the initial possum control. However, these works and services are primarily undertaken for reasons other than biodiversity, eg. soil conservation. Future options could include undertaking pest or weed control in regionally significant natural areas.

Outlined in Table 14 below are the benefits and costs associated with the provision of works and services.

Table 14: Benefits and costs of works and services

Benefits	Costs
<ul style="list-style-type: none"> • Actions are targeted • Useful method when solutions cannot depend upon individual action • Outcomes sought are quickly achieved 	<ul style="list-style-type: none"> • Imposes direct costs on the providing agency • More expensive than other options such as advice & information • Discourages those who benefit from the works & services, or who contribute to the problem, from assuming responsibility (including the costs). The imposition of direct user charges when there is a specific group that benefits can address these concerns simply & equitably. • Public funding benefits one sector of the community • There are already many demands for public spending on other areas of interest

Financial incentives

Financial incentives are given by the Taranaki Regional Council to individuals or companies to undertake some kind of desired action. Financial incentives include not just property purchase or monetary assistance but also the provision of materials at low or no cost to landowners.

It is recognised that in some circumstances significant environmental benefits can result if financial incentives are offered to assist in protecting natural habitats and associated flora and fauna. While financial incentives may take a number of forms, they are most appropriate in circumstances where solutions to promote the maintenance of indigenous biodiversity cannot rely on individual action and the wider community is a significant beneficiary.

Financial incentives that can be provided to promote the maintenance and enhancement of indigenous biodiversity include:

- funding, in part or in whole, good, works or services that would mutually benefit both the landholder and the public. For example, this might be the covenanting and/or fencing of regionally significant natural areas or pest plant and animal management;
- rate relief;
- through leases, management agreements, covenants or access rights securing the protection of natural values on privately owned or managed property;
- purchasing land through active acquisition or via properties containing regionally significant natural values becoming available on the open market; and
- the provision of native plant material.

Outlined in Table 15 below are the benefits and costs associated with property purchase and other financial incentives.

Table 15: Benefits and costs of financial incentives

Benefits	Costs
<ul style="list-style-type: none"> • Actions are targeted • Useful method when solutions cannot depend upon individual action • Creates a partnership approach between the funding provider & individuals to protect indigenous biodiversity • Outcomes sought are quickly achieved 	<ul style="list-style-type: none"> • Imposes direct costs on the providing agency • Benefactors & the community's willingness to pay needs to be determined • More expensive than other options such as advice & information • Discourages those who benefit from the works & services, or who contribute to the problem, from assuming responsibility (including the costs). The imposition of direct user charges when there is a specific group that benefits can address these concerns simply & equitably. • Public funding may benefit one sector of the community

Rules, regulation and enforcement

To date regional plans and rules relate to the Council's resource management functions relating to air, land, freshwater and the coastal environment. With the enactment of the Resource Management Amendment Act and the Council's and district councils' enhanced responsibilities to maintain and enhance indigenous biodiversity, regional and district rules solely addressing indigenous biodiversity values are options. Both regional and district councils have responsibility for indigenous biodiversity. Consequently there is potential for duplication of rules and administrative responsibilities.

Outlined in Table 16 below are the benefits and costs associated with rules and enforcement.

Table 16: Benefits and costs of rules and enforcement

Benefits	Costs
<ul style="list-style-type: none"> • The rights and responsibilities of landholders & other resource users are transparent • Provides certainty and clarity • Power to intervene on a case-by-case basis • Can be a simple & efficient tool • Avoids considerable administration costs associated with non-regulatory methods 	<ul style="list-style-type: none"> • Care must be taken to ensure that rules correctly target specific activities & associated effects to avoid unnecessary costs to society & resource users • Relies on agencies to enforce • Rules can be overly bureaucratic, especially in situations where participants have already indicated a propensity to act in accordance with a policy direction