



*Ministry for the*  
**Environment**  
*Manatū Mō Te Taiao*



**Department of Conservation**  
*Te Papa Atawhai*

# **Protecting our Places**

**Information about the Statement of National  
Priorities for Protecting Rare and Threatened  
Biodiversity on Private Land**

Published in April 2007 by the  
Ministry for the Environment  
Manatū Mō Te Taiao  
PO Box 10362, Wellington, New Zealand

ISBN: 0-478-30135-9  
Publication number: ME 805

This document is available on the Biodiversity website: [www.biodiversity.govt.nz](http://www.biodiversity.govt.nz)



*Ministry for the*  
**Environment**  
*Manatū Mō Te Taiao*

# Message from the Ministers

Private landowners have a crucial role to play in saving New Zealand's at-risk native plants and animals. Some of our most rare and threatened ecosystems and species are now found only on private land; their long term survival will depend largely on the stewardship (kaitiakitanga) of landowners.

We are fortunate in New Zealand because many of our landowners are already showing a growing interest in, and commitment to, conservation. To build on this, and stimulate new thinking, the government has been exploring ways of supporting and encouraging private landowners in their endeavours.

We have already established a fund to provide financial assistance for conservation work on private land, and over \$10 million has been given in grants. Another \$40.6 million has also been provided through agencies like the the QE II Trust and Ngā Whenua Rahui, to help people covenant private land.

Nevertheless, there remains a need to provide a better framework for decision-making about biodiversity on private land, particularly for regional and district councils who work directly with landowners in local areas.

To this end, we have developed a statement of national priorities to focus conservation efforts on private land where the need is greatest. We have sought to do so while providing the flexibility for local decision-making.

Our expectation is that the priorities in this statement will be used to support and inform councils' biodiversity responsibilities under the Resource Management Act. We believe this can be best achieved within a co-operative rather than a legislative framework.

It is important to remember that many of the species and environments encompassed in this statement are crucial to our national identity. They are part of what makes our country such a spectacular place to live, and they play a larger part than just scenery.

Our biodiversity provides important resources and services, such as clean air and water, fertile soils, pollution and flood control. As we adapt to the fluctuations and disturbances of climate change, we must remember that biodiversity helps provide stability and resilience, allowing ecosystems and species to cope with and adapt to change.

This statement of national priorities for protecting rare and threatened species on private land recognises these needs, and seeks to help landowners, councils, central government, the public and others play their part in preserving our heritage for us all.



Chris Carter  
Minister of Conservation



David Benson-Pope  
Minister for the Environment

# Contents

Message from the Ministers	iii
<b>1 Introduction to the Statement of National Priorities</b>	<b>1</b>
1.1 New and emerging information	1
<b>2 Context for the Statement of National Priorities</b>	<b>3</b>
2.1 Why we need to protect biodiversity on private land	3
2.2 Why a national perspective is important	3
2.3 Achieving the goals of the New Zealand Biodiversity Strategy	4
<b>3 National Priority One</b>	<b>5</b>
3.1 Scientific basis for National Priority One	5
3.1.1 Introducing the databases	5
3.1.2 The case for the 20% threshold	5
3.1.3 Recent changes in indigenous vegetation cover	6
3.2 Important tools and references	11
3.2.1 Land Environments of New Zealand (LENZ) classification system	11
3.2.2 Limitations associated with LENZ	11
3.2.3 Land cover database (LCDB)	12
3.2.4 Limitations of the LCDB	12
3.2.5 Integration tool: Threatened Environment Classification	13
3.2.6 Key references	13
<b>4 National Priority Two</b>	<b>14</b>
4.1 Scientific basis for National Priority Two	14
4.1.1 Sand dunes	14
4.1.2 Wetlands	15
4.2 Important tools and references	16
4.2.1 Inventories of sand dune systems in New Zealand	16
4.2.2 Key references for sand dunes	16
4.2.3 Key references for wetlands	16
<b>5 National Priority Three</b>	<b>17</b>
5.1 Scientific basis for National Priority Three	17
5.1.1 What are originally rare terrestrial ecosystems?	17
5.1.2 Why are originally rare terrestrial ecosystems important?	18
5.2 Important tools and references	18
5.2.1 List of originally rare ecosystems	18
5.2.2 Key references	19

<b>6</b>	<b>National Priority Four</b>	<b>23</b>
6.1	Scientific basis for National Priority Four	23
6.1.1	How do species qualify as acutely or chronically threatened?	23
6.2	Important tools and references	24
6.2.1	The New Zealand Threat Classification System	24
6.2.3	Threatened plant lists for local authorities – New Zealand Plant Conservation Network	44
6.2.4	Key references	44
<b>7</b>	<b>Legislative Provisions for Protecting Indigenous Biodiversity</b>	<b>45</b>
7.1	Legislation	45
7.1.1	Resource Management Act 1991	45
7.1.2	Biosecurity Act 1993	46
7.1.3	Conservation Act 1987	46
7.1.4	Forests Act 1949, Forests Amendment Act 1993	46
7.1.5	National Parks Act 1980	46
7.1.6	Reserves Act 1977	47
7.1.7	Wildlife Act 1953	47
7.2	Biodiversity Convention and Strategy	47
7.2.1	Convention on Biological Diversity	47
7.2.2	New Zealand Biodiversity Strategy	48
<b>8</b>	<b>Glossary of Terms</b>	<b>49</b>
<b>9</b>	<b>References</b>	<b>50</b>

# Tables

Table 1:	The four priorities in the Statement of National Priorities for Protecting Rare and Threatened Indigenous Biodiversity on Private Land	2
Table 2:	New Zealand's at-risk land environments, based on classification at Level IV of Land Environments of New Zealand (LENZ)	7
Table 3:	Indigenous cover loss (1996/97–2001/02) for land environment with less than 20% indigenous cover remaining	9
Table 4:	National level analysis of land environments with less than 20% indigenous cover remaining that is not formally protected, determined at Level IV LENZ in 2001/02 and split into the 73 district council areas	10
Table 5:	Physical environments and vegetation structure of New Zealand's originally rare ecosystems	20
Table 6:	Acutely threatened species list 2005	25
Table 7:	Chronically threatened species 2005	39

# Figures

Figure 1:	The 'slippery slope'	6
Figure 2:	LENZ maps	8
Figure 3:	The classification categories used in the 'New Zealand Threat Classification System lists – 2002 and 2005'	25

# 1 Introduction to the Statement of National Priorities

On 26 April 2007, the Minister of Conservation and the Minister for the Environment issued a Statement of National Priorities for the protection of rare and threatened biodiversity on private land. Section 1 introduces the four national priorities. These are listed in Table 1.

The statement is part of a wider work programme by the Ministry for the Environment and the Department of Conservation to strengthen biodiversity work on private land. The progress of this work programme, including this statement, will be monitored over the coming five years, and the whole programme will be re-evaluated at the end of this period.

This document provides technical information about each of the national priorities, and is particularly aimed at supporting staff in local authorities.

Section 2 provides the policy context, and background to why the statement of national priorities is needed to help achieve objectives in the New Zealand Biodiversity Strategy (2000).

Sections 3–6 describe each of the priorities in turn, specifically:

- the scientific basis for each of them
- important tools and references for each.

Section 7 summarises New Zealand's legislative provisions for protecting native biodiversity, which provide the statutory context for the national priorities.

Sections 8 and 9 contain a glossary of terms used, and a list of references.

## 1.1 New and emerging information

The information provided in this document reflects our current knowledge of the state of biodiversity in New Zealand. As we learn more, this information, along with the tools used to support the national priorities, is likely to be refined and improved, and the terminology updated.

Any relevant new information or research will be available electronically on the New Zealand Biodiversity Strategy website: [www.biodiversity.govt.nz](http://www.biodiversity.govt.nz) – it will pay to check for updates from time to time.

Links to any new information will also be available on:

- the Department of Conservation website: [www.doc.govt.nz](http://www.doc.govt.nz)
- the Ministry for the Environment website: [www.mfe.govt.nz](http://www.mfe.govt.nz).

Note that a brochure is also available that provides a summary overview of the national priorities and their general policy context. Called *Protecting our Places – Introducing the National Priorities for Protecting Rare and Threatened Native Biodiversity on Private Land*, it

is available from local government offices and at [www.biodiversity.govt.nz](http://www.biodiversity.govt.nz) or by emailing [publications@mfe.govt.nz](mailto:publications@mfe.govt.nz).

**Table 1: The four priorities in the Statement of National Priorities for Protecting Rare and Threatened Indigenous Biodiversity on Private Land**

**Statement of National Priorities for Protecting Rare and Threatened Indigenous biodiversity on private land**

**National Priority 1:**

To protect indigenous vegetation associated with land environments (defined by Land Environments of New Zealand at Level IV), that have 20% or less remaining in indigenous cover.

**National Priority 2:**

To protect indigenous vegetation associated with sand dunes and wetlands; ecosystem types that have become uncommon due to human activity.

**National Priority 3:**

To protect indigenous vegetation associated with 'originally rare' terrestrial ecosystem types not already covered by priorities 1 and 2.

**National Priority 4:**

To protect habitats of acutely and chronically threatened indigenous species.



## **2 Context for the Statement of National Priorities**

### **2.1 Why we need to protect biodiversity on private land**

New Zealand's unique indigenous biodiversity has been shaped by more than 80 million years of isolation, followed by comparatively recent human settlement. Many of our species of plants and animals are endemic, but human impacts mean many have already been lost. Recent estimates suggest that in the past 700-800 years, human activity has caused the extinction of one-third of indigenous land and freshwater birds, 18% of sea birds, three of seven frog species, at least 12 invertebrates (such as snails and insects), one fish, one bat, perhaps three reptiles and possibly 11 plants.

The degree of human impacts and the loss or removal of indigenous biodiversity varies greatly across the country. For example, environments in alpine and upper montane zones are generally still dominated by native cover, while more intensive land use in the warmer lower montane and lowland zones means they now contain only traces of their original communities.

Although New Zealand's public conservation lands cover 30% of our total land area, most is in higher (and usually less productive) country. Productive and biodiversity-rich lowland areas are poorly represented, and lowland forests, sand dunes, streams, wetlands and sub-alpine tussock grasslands are all under-represented on public lands (Ministry for the Environment, 1997). Most are in private management.

Because so much of our remaining native biodiversity is in the stewardship of private landholders (including rare and threatened ecosystems and habitats), its survival depends on their day-to-day management decisions.

### **2.2 Why a national perspective is important**

The statement of national priorities for protecting biodiversity on private land identifies rare and threatened environments and ecosystems at a national level – that is, it looks at the full range of our remaining natural habitats and ecosystems and pinpoints which are the most vulnerable across the whole of New Zealand.

If you are working in regional and local government, this national perspective will expand your view beyond looking at representativeness from a purely regional and/or local focus. This is important, as the significance of the native biodiversity present in your region or district may not be apparent until it is considered against the full range of New Zealand's biodiversity.

However, it is also important to recognise that focusing entirely at a national level may not identify indigenous biodiversity that should be protected at a regional or local scale because it is locally or regionally rare, threatened or valued by that community.

For these reasons, the statement of national priorities does not aim to identify all native biodiversity that is to be maintained by councils under sections 30 and 31 or identified as significant under section 6(c) of the Resource Management Act. (Note that the role of the Resource Management Act in protecting native biodiversity is further discussed in Section 7.1: Legislation.)

## 2.3 Achieving the goals of the New Zealand Biodiversity Strategy

The New Zealand Biodiversity Strategy released in 2000 sets out the visionary goal of halting the decline in New Zealand's indigenous biodiversity by 2020 which is expressed in the following way:

*Maintain and restore a full range of remaining natural habitats and ecosystems to a healthy functioning state, enhance critically scarce habitats, and sustain the more modified ecosystems in production and urban environments and do what else is necessary to maintain and restore viable populations of all indigenous species and subspecies across their natural range and maintain their genetic diversity.* (Department of Conservation and Ministry for the Environment, 2000, p.18)

In 2005, the five-year review of the New Zealand Biodiversity Strategy (Green and Clarkson, 2005) identified progress in a number of areas, including the restoration of offshore and mainland islands, and pest eradication. The review also identified significant challenges that still need to be addressed, including (page 2):

- *Ongoing loss of rare and threatened biodiversity from private lands*
- *Dominance of economic drivers that favour the degradation of ecosystems (such as wetlands), rather than their active maintenance*
- *Adverse impacts of animal pests on threatened species and forest ecosystems*
- *Serious declines in the status of many acutely or chronically threatened species.*

The review can be found at <http://www.doc.govt.nz/upload/documents/conservation/nzbs-report.pdf>.

Green and Clarkson (2005) also highlighted the priorities for future protection as, to continue:

*... to identify and protect representative habitats and ecosystems that are poorly represented in the present network of protected areas. This approach will require a focus on coastal, lowland and montane habitats. Most of the threatened plant species are also at lower elevations and will therefore benefit from this approach to habitat protection.* (Green and Clarkson, 2005, p 20)

The statement of national priorities for protecting rare and threatened biodiversity on private land is an important part of the government's response to the review's findings. By identifying specific vulnerable ecosystems and habitats, and providing this information to regional and local government, this statement is an important tool to help deliver the New Zealand Biodiversity Strategy goal – 'to halt the decline in New Zealand's indigenous biodiversity'.

# 3 National Priority One

## **National Priority One:**

To protect indigenous vegetation associated with land environments (defined by Land Environments of New Zealand at Level IV), that have 20% or less remaining in indigenous cover.

## 3.1 Scientific basis for National Priority One

### 3.1.1 Introducing the databases

National Priority One uses Land Environments of New Zealand (LENZ), a national environment-based classification of ecosystems mapped across New Zealand's landscape. LENZ uses information likely to influence the distribution of species and ecosystems (including climate, landform and soils) to classify and map areas that have similar environmental or ecosystem character. These are called 'land environments'. LENZ is a surrogate for the likely past (prehuman) pattern of terrestrial ecosystems and their associated biodiversity. It is discussed in greater detail in section 3.2.1.

Changes over time in the indigenous vegetation cover of different land environments (between prehuman and today) can be estimated by using LENZ in conjunction with another spatial database – the Land Cover Database. The Land Cover Database uses satellite imagery to classify and map New Zealand's land cover (such as, urban areas, mines, wetlands and native forest). It is more fully described in section 3.2.3.

When LENZ is combined with the Land Cover Database and a national database of the protective status of land we can identify what type of vegetation occurs in each land environment and the broad pattern of protection. The Threatened Environment Classification tool integrates all three national databases. This tool allows us to identify environments in which remaining native cover is substantially reduced or poorly protected. The Threatened Environment Classification tool is described in section 3.2.5.

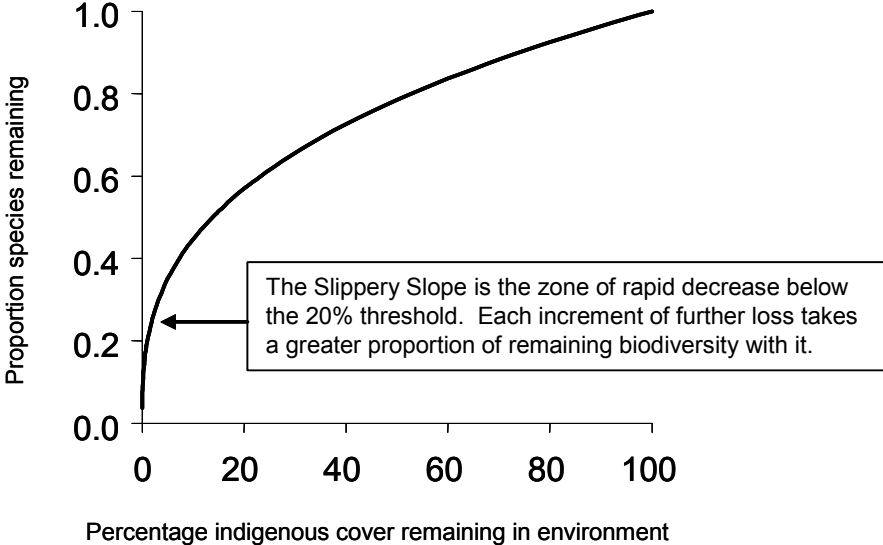
### 3.1.2 The case for the 20% threshold

Ecological theory helps us estimate the risk of loss to remaining indigenous biodiversity, which can be assessed by looking at species-area relationships. The generalised species-area curve describes the relationship between area and species number (Rosenweig, 1995). Figure 1 shows that as the amount of habitat reduces, the susceptibility to loss of species increases exponentially.

With initial decreases in area (upper right curve in Figure 1), the rate of loss of species is relatively small. The first to go are the most vulnerable species, typically the large-bodied, space demanding, host-dependent, narrow-range and/or habitat-specialist biota.

As habitat area is progressively reduced, the rate of species loss increases and biota in smaller size ranges, as well as more generalist species, also become affected. The rate of biodiversity loss increases dramatically when the amount of available habitat drops below 20% of its original extent.

**Figure 1: The ‘slippery slope’**



Source: Adapted from Rosenweig (1995).

### 3.1.3 Recent changes in indigenous vegetation cover

A paper by Walker et al (2006) uses the Threatened Environments Classification tool to summarise recent changes in New Zealand’s indigenous vegetation cover. More detailed analysis of recent change will be published in late 2007 on the Department of Conservation website.

The research focused on changes in vegetation cover between 1996/97–2001/02. It showed that, over this five-year period, almost half of New Zealand’s land environments (46%) had only 20% or less remaining in indigenous vegetation cover (Table 2). This amounts to just 565,751 hectares of indigenous vegetation remaining in these land environments – and 83% of it is not formally protected.

**Table 2: New Zealand’s at-risk land environments, based on classification at Level IV of Land Environments of New Zealand (LENZ)**

	LENZ level	Total	Land environments with 0–20% of total area remaining in indigenous vegetation
<b>Number of land environments</b>			
Number of land environments	IV	500	232 or 46%
<b>Full extent of land environments</b>			
Area (ha)	IV	26,000,680	8,211,366
<b>Indigenous cover remaining in land environments</b>			
Area (ha)	IV	12,632,214	565,751
<b>Indigenous cover not protected in land environments</b>			
Area (ha)	IV	4,795,569	474,019

Source: Walker, Price et al (2006).

The maps in Figure 2 show the distribution of New Zealand land environments under the threat categories used in the Threatened Environments Classification tool (see section 3.2.5). Most land environments with 20% or less indigenous vegetation remaining (acutely and chronically threatened) occur in lowland and coastal areas, with the most extensive occurring in Northern Otago and Canterbury (South Island) and the lower west coast and east coast of the North Island (Map 2A).

Note that this national priority focuses on the red acutely (<10% remaining in indigenous vegetation) and orange chronically threatened (10%–20% indigenous vegetation remaining) land environments.

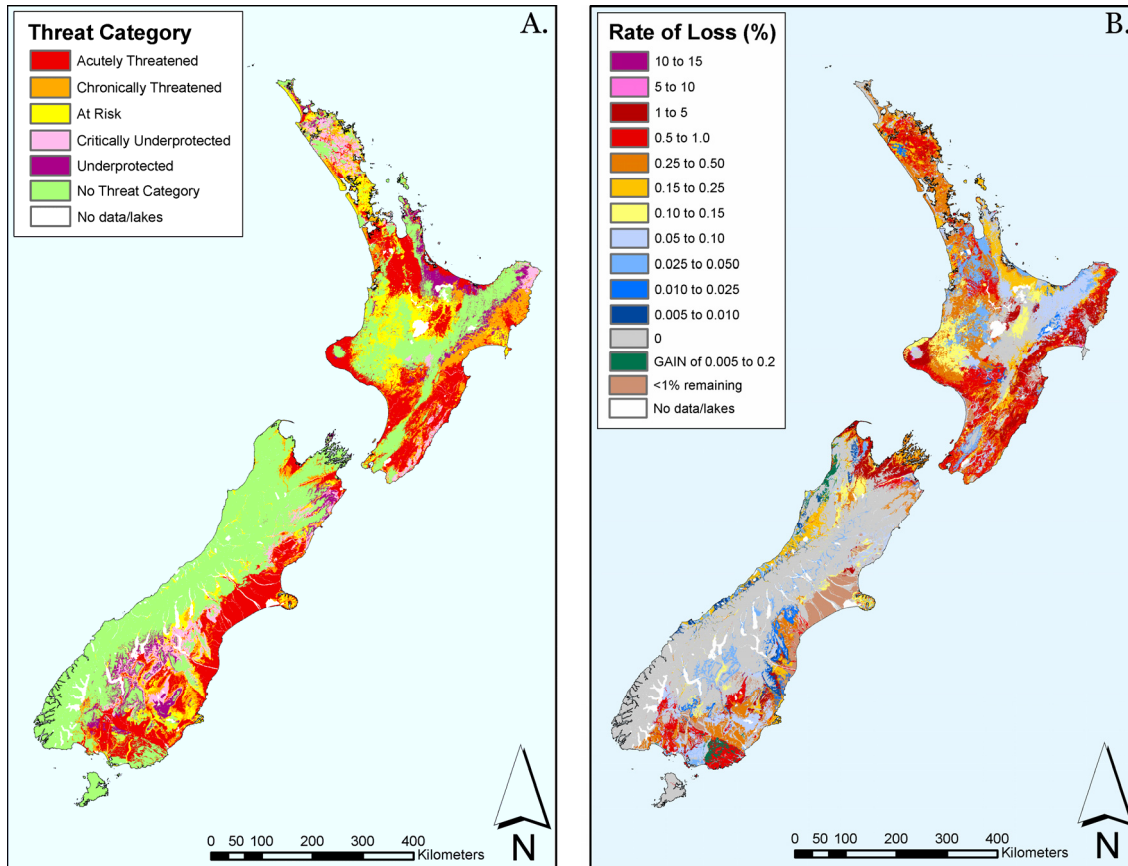
The highest rates of net loss in indigenous vegetation over the five year time of this study also occurred in these lowland and coastal land environments (Map 2B). Walker et al (2006), noted that these lowland and coastal zones are more accessible and have higher value for agriculture and settlement, and this has resulted in the considerable loss of their native vegetation.

The net loss of indigenous cover from 1996/97 to 2001/02 is estimated to be 17,204 hectares, of which 3656 hectares was from land environments with less than 20% indigenous cover left. We do not have accurate information about the quality of the indigenous biodiversity that has been lost. Most of the loss pre-dates the implementation of the New Zealand Biodiversity Strategy and the announcement of the Biodiversity Package in December 2000. However, anecdotal evidence suggests that clearance of indigenous biodiversity is still occurring in some districts.

**Figure 2: LENZ maps**

**Map 2A:** Environment threat categories based on % loss and % protection in May 2005

**Map 2B:** The rate of recent net loss (% loss of indigenous cover in the five year period 1996/97 to 2001/02), across New Zealand's 500 Level IV land environments



Source: Taken from Walker et al (2006).

Manuka and/or kanuka (1525 hectares), broad-leaved indigenous hardwoods (1187 hectares), tall-tussock grassland (509 hectares) and indigenous forest (394 hectares) experienced the biggest losses between 1996/97 and 2001/02 for the land environments with less than 20% of indigenous vegetation cover remaining (Table 3). However, the extent of conversion to non-indigenous cover is likely to be higher because the figures do not include drainage, conversion of wetlands or conversion of short-tussock grasslands.

Walker et al (2006), noted that in New Zealand the clearance of indigenous cover was historically largely in areas of highest agricultural value. This study has indicated that recent indigenous vegetation clearance has extended to more “marginal land”.

**Table 3: Indigenous cover loss (1996/97–2001/02) for land environment with less than 20% indigenous cover remaining**

Cover class	Change from indigenous cover to non-indigenous cover (ha)	
	Total	Land environments with 20% or less of total area remaining in indigenous vegetation
Rock	234	1
Fernland	90	0
Tall-tussock grassland	2,482	509
Wetland/water	105	52
Manuka and/or kanuka	5,609	1,525
Matagouri	6	6
Broad-leaved indigenous hardwoods	6,745	1,187
Subalpine shrubland	46	9*
Indigenous forest	2,232	394
<b>Total change</b>	<b>17,550</b>	<b>3,682</b>
	Change from non-indigenous cover to indigenous cover (ha)	
All non-indigenous cover classes	346	28
	Net loss of indigenous cover from 1996/97 to 2000/01 (ha)	
Net loss of indigenous cover	17,204	3,656
Net loss of indigenous cover that is not protected	16,271	3,609

Source: Walker, Price, et al (2006).

Table 4 presents unpublished data from the same research reported in Walker et al 2006 which shows considerable variability between the 73 district councils in the amount of indigenous vegetation cover that is not formally protected, in land environments with 20% or less remaining vegetation at the national level. The figures are from 2001/02. ‘Not formally protected’ generally means areas not held as public conservation land or in Queen Elizabeth II National Trust covenants. Land protected through other means, such as regional and local council initiatives, and later than 2001/02, is not included.

The same analysis, to show the amount of indigenous vegetation cover that is not formally protected, in land environments with 20% or less remaining vegetation, can also be done within regional and district/city council boundaries. This analysis would indicate representativeness at these finer scales, and is likely to show a different pattern than at a national level. Comparing the patterns of similarity and difference at national, regional and local levels provides us with information about representativeness within the full range of New Zealand’s biodiversity.

**Table 4: National level analysis of land environments with less than 20% indigenous cover remaining that is not formally protected, determined at Level IV LENZ in 2001/02 and split into the 73 district council areas**

Council (district or city)	< 20% indigenous vegetation remaining	Council (district or city)	< 20% indigenous vegetation remaining
Ashburton	2,736	Otorohanga	1,517
Auckland	926	Palmerston North	1,502
Banks Peninsula	7,704	Papakura	118
Buller	711	Porirua	630
Carterton	3,896	Queenstown Lakes	4,384
Central Hawke's Bay	10,719	Rangitikei	16,057
Central Otago	33,288	Rodney	3,117
Christchurch	638	Rotorua	2,809
Clutha	15,010	Ruapehu	3,452
Dunedin	10,984	Selwyn	2,686
Far North	12,204	South Taranaki	6,149
Franklin	10,337	South Waikato	1,013
Gisborne	51,416	South Wairarapa	12,171
Gore	826	Southland	21,278
Grey	0	Stratford	1,222
Hamilton	292	Tararua	19,426
Hastings	20,558	Tasman	9,059
Hauraki	1,782	Taupo	3,999
Horowhenua	2,722	Tauranga	629
Hurunui	17,815	Thames–Coromandel	2,641
Invercargill	400	Timaru	3,395
Kaikoura	2,764	Upper Hutt	1,033
Kaipara	6,072	Waikato	11,045
Kapiti Coast	1,570	Waimakariri	1,966
Kawerau	136	Waimate	5,033
Lower Hutt	906	Waipa	2,723
Mackenzie	11,274	Wairoa	21,257
Manawatu	10,005	Waitakere	461
Manukau	566	Waitaki	18,890
Marlborough	12,363	Waitomo	1,629
Masterton	9,429	Wanganui	4,609
Matamata–Piako	1,506	Wellington	461
Napier	216	Western Bay of Plenty	2,194
Nelson	611	Westland	0
New Plymouth	4,107	Whakatane	4,023
North Shore	114	Whangarei	4,926
Opotiki	3,324	<b>Total</b>	<b>467,989</b>

Source: Walker, Price et al (unpublished report).

Note that a more detailed report on this analysis will be published in late 2007 by the Department of Conservation.



## 3.2 Important tools and references

### 3.2.1 Land Environments of New Zealand (LENZ) classification system

LENZ is a national environment-based classification of ecosystems mapped across New Zealand's landscape. LENZ uses 15 climate, landform and soil variables likely to influence the distribution of species to classify and map areas that have similar environmental or ecosystem character. The classification is used to identify areas that are similar regardless of where they occur – sites not necessarily the same in all respects, but likely to have similar groups of species and similar biological interactions and processes (that is, similar ecosystems). For example, swampy areas on poorly drained recent soils on coastal plains and in river valleys in eastern New Zealand occur from Gisborne to mid-Canterbury. Although geographically separated from each other, these areas are environmentally similar and form one type of LENZ environment (Environment I: Central poorly drained recent soils).

LENZ can be used at four national levels of detail:

- Level I (20 land environments nationally, A to T)
- Level II (100 land environments nationally, A1 to T1)
- Level III (200 land environments nationally, A1.1 to T.1.1)
- Level IV (500 land environments nationally, A1.1a to T1.1a).

Working up from level IV, each level is nested within higher levels.

The different levels of LENZ simply reflect greater detail and hence an increase in the number of land environments. Which level is appropriate to use depends on how much detail is needed to address a particular question. Level II is considered appropriate for national- to regional-scale assessments. LENZ Levels III and IV would be appropriate for local-scale assessments. Level IV distinguishes environmental variation down to about a 1:50,000 scale.

### 3.2.2 Limitations associated with LENZ

LENZ was not designed to identify uncommon ecosystems with limited distributions, such as those listed as 'originally rare' in National Priority Three. These ecosystems may be linked to particular localised geological or physical conditions, and often support high levels of indigenous biodiversity of which the majority are rare or threatened.

LENZ does not depict current land cover; rather it indicates the likely past (prehuman) pattern of terrestrial ecosystems and their associated biodiversity. Therefore, it will not identify some ecosystem types that occur across large numbers of land environments, which have significantly reduced in their extent. Examples include riparian floodplain vegetation (forest and shrubland), wetlands and dunelands.

With any classification system, the underlying data are critical. The original scale, level of generalisation and possible imperfections in the underlying data can result in some classification error. This possibility should be considered and ground checks made before decisions are taken.

### 3.2.3 Land cover database (LCDB)

The Land Cover Database 1 (LCDB1) is a digital theme-based map of land cover for mainland New Zealand. The first database was completed in June 2000, and based on satellite images taken over the summer of 1996/97 by the Spot II satellite. The second database (LCDB2) was released in July 2004, based on satellite imagery gathered between September 2001 and March 2002.

Sixteen land cover classes are used for most regions, with a 17th class (riparian willows) added in some regions. The land cover classes address cultural landscapes (modified by people) and natural landscapes (such as, indigenous forest). The 17 classes were classified manually by superimposing boundaries onto satellite images, and then field checked. The satellite images have a 20-metre spatial resolution. The overall classification accuracy was independently assessed at 93% at  $\pm 25$  metres. The minimum mapping unit used was one hectare, and the data is suitable for application at the 1:50,000 mapping scale, or coarser.

To identify areas of indigenous vegetation, eight land cover classes from the Land Cover Database are combined into one indigenous vegetation class. They are: indigenous forest, inland water, coastal wetlands, inland wetlands, coastal sands, scrub, tussock and bare ground.

Overlaying information from the Land Cover Database with areas of public conservation land and private land, shows that about 14,033,769 hectares of indigenous vegetation remain in New Zealand, with about 8,210,570 hectares legally protected.

Of the balance – about 5,823,199 hectares – some will be protected by council covenant schemes on private land or in council reserves. Some remnants in plantation forests will be protected under the Forest Accord, a scheme run with the Forest Stewardship Council (the Ministry of Agriculture and Forestry estimate there is about 1,000,000 hectares of indigenous vegetation scattered through production forests). Some areas will be managed outside legal protection schemes for conservation and, although not legally protected, will still contribute to indigenous biodiversity outcomes. For example, community or non-government organisation (NGO) pest and weed control activities and restoration programmes may be carried out.

### 3.2.4 Limitations of the LCDB

Both LCDB 1 and 2 were the first nationally comprehensive vegetation monitoring programmes undertaken in New Zealand. Limitations to be aware of when using the LCDB are:

1. They provide only a coarse assessment of changes in indigenous habitats and ecosystems.
2. Incremental losses of habitat and gradual trends, such as succession and habitat deterioration, are unable to be detected.
3. There are errors around the mapping and classification of some habitats and ecosystem types, particularly grassland types.

In the context of making decisions about discrete areas, the classification of very small or fragmented remnants should be verified using independent field survey information to check the accuracy of the LCDB land cover classification.

### 3.2.5 Integration tool: Threatened Environment Classification

The Threatened Environments Classification tool integrates LENZ, LCDB and data about land protection status to overcome the complexity of trying to juggle 500 Level IV land environments, 64 land cover classes and several types of land protection status.

The classification tool enables us to focus on the land environments where remaining biodiversity is in most need of protection and conservation. You can access it as a digital map, or as a query tool for use in an ESRI GIS platform. The latter is more up-to-date, as it updates of underlying databases are immediately reflected.

The two highest threat categories (Acutely Threatened and Chronically Threatened) correspond to the Level IV land environments included in National Priority One.

### 3.2.6 Key references

Walker S, Price R, Rutledge D, Stephens TTR, Lee WG. 2006. Recent loss of indigenous cover in New Zealand. *New Zealand Journal of Ecology* 30(2): 169–177.

#### LENZ references

Landcare Research website: <http://www.landcareresearch.co.nz/databases/lenz/>

Leathwick J, Wilson G, Rutledge D, Wardle P, Morgan F, Johnston K, McLeod M, Kirkpatrick R. 2003. *Land Environments of New Zealand*. Auckland: David Bateman Ltd.

Leathwick J, Morgan F, Wilson G, Rutledge D, McLeod M, Johnston K. 2002. *Land Environments of New Zealand: Technical Guide*. Wellington: Ministry for the Environment.

#### Land cover database references

Ministry for the Environment website:

<http://www.mfe.govt.nz/issues/land/land-cover-dbase/>

Terralink website:

[www.terralink.co.nz](http://www.terralink.co.nz)

[http://www.terralink.co.nz/products\\_services/satellite/land\\_cover\\_database\\_of\\_new\\_zealand/index.htm](http://www.terralink.co.nz/products_services/satellite/land_cover_database_of_new_zealand/index.htm)

## 4 National Priority Two

### **National Priority Two:**

To protect indigenous vegetation associated with sand dunes and wetlands; ecosystem types that have become uncommon due to human activity.

### 4.1 Scientific basis for National Priority Two

The statement of national priorities gives specific reference to the importance of protecting native vegetation associated with sand dunes and wetlands, as these ecosystems have become uncommon due to human activities. They are also a specific priority because our ability to assess changes in these ecosystems using LENZ and the landcover database is poor, which means not all of these systems will be identified under Priority One.

#### 4.1.1 Sand dunes

Sand dunes occur where sea and land meet, and are formed from sand derived from both terrestrial and marine sources. The formation of dune systems is influenced by a number of factors, including the shape of the coastline and beach, currents and the ocean swell, prevailing wind, frequency of storms and the sand's particle size.

Sand dune systems are widespread around the New Zealand coast, with the largest areas occurring along the Manawatu, Auckland and Northland coasts (Hilton et al (2000)). Their paper also reports significant impacts on the natural character of our dunelands since humans arrived in New Zealand.

Recent estimates suggest 21,300 hectares of sand dunes remain (Leathwick et al, unpublished report) – just 11.6% of the original extent. Widespread disturbance of sand dunes to varying degrees by fire, grazing and the introduction of exotic species (particularly marram grass *Ammophila arenaria*), has also impacted on our sand dune systems (Hilton et al (2000)).

These systems are identified by the New Zealand Coastal Policy Statement as a national priority ecosystem, which recognises that sand dunes are an integral part of the natural character of our coasts.

## 4.1.2 Wetlands

Wetlands are areas where water is the primary factor controlling the environment and associated plant and animal life. They occur where the water table is at, or near, the land's surface, or where the land is covered by water, either permanently or temporarily. There are numerous definitions for wetlands, but the two most common definitions we use in the New Zealand context are:

1. The Resource Management Act 1991 – this defines wetlands as: ‘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’.
2. The RAMSAR Convention on Wetlands – this provides a broader definition: ‘For the purpose of this convention, wetlands are areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres’.

Wetlands represent some of our most diverse ecosystems and have many different guises, including swamps, bogs, lagoons, estuaries, mudflats and flood plains. These areas are known for their high biodiversity values, including specially adapted plants and animals which rely upon the wetland's existence to survive.

However, it is estimated that there are just 45,600 hectares of indigenous wetlands remaining (Leathwick et al, unpublished report), which represents only 9.4% of their original extent. The exact proportion in private ownership is not known, but we assume that most wetlands in lowland environments are in private hands.

Many of New Zealand's remaining wetland areas have become degraded to varying degrees by factors such as stock access, weed invasions, changes to hydrological regimes and barriers to fish migration (Department of Conservation and Ministry for the Environment, 2000). However, some are internationally recognised for their significant biodiversity values, as reflected in the Convention on Wetlands.

The **Convention** (known as the RAMSAR Convention because it was signed at Ramsar, Iran) is an intergovernmental treaty adopted on 2 February 1971, and New Zealand is a signatory. Its scope encompasses wetland conservation and wise use, and recognises wetland ecosystems are extremely important for biodiversity conservation in general, and for the well being of human communities ([www.ramsar.org/](http://www.ramsar.org/)).

Steps are being taken towards furthering our understanding of New Zealand's wetland systems. Two opportunities are:

- *Wetland types of New Zealand* (Johnson and Gerbaux, 2004), which sets out a national classification framework
- a GIS database being prepared by the Department of Conservation to identify and classify wetlands (and other waterbodies). This information will be combined with a range of pressure variables to identify and prioritise the most representative and distinctive wetlands. This project is expected to be completed in the second half of 2007.

## 4.2 Important tools and references

### 4.2.1 Inventories of sand dune systems in New Zealand

Two major surveys have been carried out of active and stabilised dune systems, both in 1992. *The sand dune and beach inventory of New Zealand* (Johnson, 1992 – South Island and Stewart Island; Partridge, 1992 – North Island) provides the most consistent nationwide assessment of the conservation status of sand dunes, although there are some limitations with the methodology used.

A more recent inventory by Hilton et al (2000), provides an analysis of regional trends in the rate of loss of active duneland.

### 4.2.2 Key references for sand dunes

Hilton, et al. 2000. Inventory of New Zealand's active dunelands. *Science for Conservation* 157. Wellington: Department of Conservation.

Johnson P. 1992. *The Sand Dune and Beach Vegetation Inventory of New Zealand. II. South Island and Stewart Island*. DSIR Land Resources Scientific Report Number 16. Christchurch: DSIR Land Resources.

Partridge T. 1992. *The Sand Dune and Beach Vegetation Inventory of New Zealand. II. North Island*. DSIR Land Resources Scientific Report Number 16. Christchurch: DSIR Land Resources.

Hesp P. 2000. *Coastal Sand Dunes: Form and function*. Rotorua: Coastal Dune Vegetation Network, Forest Research.

### 4.2.3 Key references for wetlands

Johnson PJ, Gerbeaux P. 2004. *Wetland Types in New Zealand*. Wellington: Department of Conservation.

Department of Conservation and Ministry for the Environment. 2000. *New Zealand Biodiversity Strategy*. Wellington: Department of Conservation and Ministry for the Environment.

Ministry for the Environment. 1997. *The State of New Zealand's Environment*. Wellington: Ministry for the Environment.

Cromarty P. 1996. *A Directory of Wetlands in New Zealand*. Scott DA (ed). Wellington: Department of Conservation.

New Zealand Hydrological Society and New Zealand Limnological Society. 2004. *Freshwaters of New Zealand*. Harding J, Mosley P, Pearson C, Sorrell B (eds). Wellington: New Zealand Hydrological Society, New Zealand Limnological Society.

# 5 National Priority Three

## National Priority Three:

To protect indigenous vegetation associated with 'originally rare' terrestrial ecosystem types not already covered by priorities 1 and 2.

## 5.1 Scientific basis for National Priority Three

National Priority Three recognises the importance of protecting indigenous vegetation associated with ecosystems that were rare before Māori arrived in New Zealand, and still exist today. Landcare Research is undertaking new research into these 'originally rare' ecosystems. As further information becomes available, you can access it via a link on the New Zealand Biodiversity Strategy website – [www.biodiversity.govt.nz](http://www.biodiversity.govt.nz).

### 5.1.1 What are originally rare terrestrial ecosystems?

The list of originally rare terrestrial ecosystems contained in the statement of national priorities is based on the list contained in Williams et al (2006). They define 'originally rare' as follows:

*“Originally we take to mean the ecosystem type was present when Māori arrived and still exists today (although we acknowledge our ignorance of pre-Māori ecosystems).*

*Rare can encompass ecosystem types that are small in size (for example, 25 m<sup>2</sup> to 100s of hectares), but geographically widespread (for example, dune deflation hollows along the New Zealand coast) to those that are larger (for example, 1000s of hectares), but geographically restricted (such as, frost flats on the volcanic plateau) (cf. Rabinowitz, 1981). Total extent would be <0.5% (that is, <134,000 hectares) of New Zealand's total area (of 268,680 km<sup>2</sup>).*”

Note that the statement excludes originally rare ecosystems identified in Williams et al (2006) where rarity at a national scale may be questionable (indicated with an asterisk \* in their original paper). The statement also excludes non-terrestrial ecosystems and those that don't support indigenous vegetation. Geothermal systems have been generalised into one category, and wetlands have been excluded because they are covered in Priority Two. Some of the 'common names' originally suggested for the ecosystems by Williams et al have also been changed in the list contained in the statement.

## 5.1.2 Why are originally rare terrestrial ecosystems important?

In New Zealand, indigenous biodiversity is concentrated in rare ecosystems, such as, ephemeral wetlands, bluffs, kaarst and geothermal vents, and coastal turfs. Collectively, naturally rare plant community types hold about half of our nationally threatened plant species (PA Williams, unpublished, based on data of de Lange et al (2004)), which is vastly disproportionate to their total area. This increases both their intrinsic interest and their importance for biodiversity conservation initiatives.

## 5.2 Important tools and references

### 5.2.1 List of originally rare ecosystems

The following list has been compiled from scientific research being undertaken by Landcare Research, and our knowledge of these ecosystems will evolve as the research progresses. The ecosystem types listed are not necessarily found in all regions or districts, and some will be protected on public conservation land.

Coastal systems	Inland and alpine systems with raw or recent soils
Dune deflation hollows	Volcanic dunes
Shell barrier beaches (= "Chenier plain")	Calcareous screes
Coastal turf	Ultramafic screes
Stony beach ridges	Young tephra (<500 years) plains and hillslopes
Shingle beaches	Recent lava flows (<1000 years)
Coastal rock stacks	Old tephra (>500 years) plains (= "frost flats")
Coastal cliffs on silicic bedrock	Frost hollows
Coastal cliffs on silicic-intermediate rock	Boulderfields of silicic-rocks
Mafic coastal cliffs	Boulderfields of silicic-intermediate rocks (non-volcanic)
Calcareous coastal cliffs	Volcanic boulderfields
Ultramafic sea cliffs	Debris flow or lahar
Marine mammal influenced sites	Boulderfields of calcareous rocks
<b>Other inland systems</b>	Ultramafic boulderfields
Inland saline (= "salt pans")	Cliffs, scarps and tors of silicic rocks
Strongly leached terraces and plains (= "Wilderness" vegetation)	Mafic cliffs, scarps and tors
Cloud forest	Calcareous cliffs, scarps and tors
Geothermal systems	Ultramafic cliffs, scarps and tors
<b>Semi-subterranean</b>	Ultramafic hills
Sinkholes	Inland sand dunes
Cave entrances	Inland outwash gravels
	Braided riverbeds
	Granitic sand plains
	Granitic gravel fields
	Sandstone erosion pavements
	Limestone erosion pavements



## Terminology

The terminology used for bedrock types is taken from Table 1 in Williams et al.

- a) *Silicic bedrock* = rhyolite, granite and related gneiss, quartzose sandstone.
- b) *Silicic-intermediate bedrock* = ignimbrite, andesite, greywacke, sedimentary rocks not otherwise specified, schist.
- c) *Mafic bedrock* = basalt, meta-basalt, gneiss, gabbro.
- d) *Calcareous bedrock* = limestone, marble, dolomite, calcareous mudstone.

Table 5 on the following page has been adapted from Williams et al (2006). It describes the physical environments and vegetation structure of the originally rare ecosystems that are identified as national priorities. Williams et al explain the columns as follows:

- The ‘common name’ and ‘definition’ describe the environment of the ecosystem type.
- ‘Vegetation structure’ lists the main vegetation units across all occurrences of that ecosystem, and use the categories adapted from Atkinson (1985) – forest, treeland, scrub, shrubland, tussockland, fernland, grassland, sedgeland, rushland, reedland, cushionfield, herbfield, mossfield, lichenfield and open land (this includes, rockland, boulderfield, stonefield/gravelfield, sandfield and loamfield/peatfield).
- Information in parentheses is not part of the formal description, but is important to further characterise the ecosystem type.

### 5.2.2 Key references

Williams PA, Wiser S, Clarkson B, Stanley M. *A physical and physiognomic framework for defining and naming originally rare terrestrial ecosystems: First approximation*. Landcare Research Internal Report: LC0506/185:

[http://www.landcareresearch.co.nz/research/biocons/rare\\_ecosystems/documents/framework\\_rare\\_ecosystems.pdf#search="originally rare"](http://www.landcareresearch.co.nz/research/biocons/rare_ecosystems/documents/framework_rare_ecosystems.pdf#search=)

Landcare research website for up-to-date information: [www.landcareresearch.co.nz](http://www.landcareresearch.co.nz)  
[http://www.landcareresearch.co.nz/research/obi.asp?Proj\\_Collab\\_ID=2](http://www.landcareresearch.co.nz/research/obi.asp?Proj_Collab_ID=2)

**Table 5: Physical environments and vegetation structure of New Zealand's originally rare ecosystems**

Tentative 'common' name	Definition (ie, diagnostic classifiers) and notes	Vegetation structure	Example locality
<b>Coastal systems</b>			
Dune deflation hollow	Raw/sand/depression/excessive drainage/coastal	Open land	Kaitorete Spit, Canterbury
Shell barrier beaches	Raw/shells/plain/coastal	Grassland, herbfield	Miranda Chenier Plain, Firth of Thames
Coastal turf	Raw/atmospheric salinity/coastal, extreme exposure	Open land, herbfield	Westhaven Inlet, northwest Nelson
Stony beach ridges	Raw-recent/gravel-cobbles/beach ridge/coastal	Scrub, shrubland, open land	Rarangi, Marlborough
Shingle beaches	Raw-recent/gravel-cobbles/beach/coastal	Open land	Rarangi, Marlborough
Coastal rock stacks	Raw/silicic-intermediate and mafic bedrock/tor/coastal	Open land, herbfield, lichenfield, shrubland	Cape Kidnappers, Hawke's Bay
Coastal cliffs on silicic bedrock	Raw/silicic/cliffs/coastal	Open land, lichenfield, herbfield, scrub, shrubland tussockland	Along Fiordland Coast
Coastal cliffs on silicic-intermediate rock	Raw/silicic-intermediate/cliffs/coastal	Open land, lichenfield, herbfield, scrub, shrubland tussockland	Cape Turnagain, Wairarapa
Coastal cliffs on mafic rock	Raw/mafic/cliffs/coastal	Open land, lichenfield, herbfield, scrub, shrubland tussockland	Coastal areas of Banks Peninsula
Coastal cliffs on calcareous rock	Raw/calcareous rock/cliffs/coastal	Open land, lichenfield, herbfield, scrub, shrubland tussockland	Punakaiki, North Westland
Ultramafic sea cliffs	Raw/ultramafic/cliffs/coastal	Scrub, herbfield, lichenfield, open land	Western cliffs, D'Urville Island; Surville cliffs, Northland
Marine mammal influenced sites	Seabirds and marine mammals-trampling and grazing/coastal	Open land – forest	Seal colonies, Westport
<b>Inland and alpine systems with raw or recent soils</b>			
Volcanic dunes	Raw/silicic-intermediate, volcanics/sand/dune	Open land	Rangipo Desert, Central North Island
Screes of calcareous rock	Raw/calcareous/gravel-cobbles/talus/ (excessive drainage–near permanently saturated; inland-alpine)	Open land	Mt Arthur, Nelson
Screes of ultramafic rock	Raw/ultramafics/gravel-cobbles/talus/ (excessive drainage–near permanently saturated)	Open land, lichenfield, shrubland	Olivine Range, Southland
Young tephra (<500 years) plains and hillslopes	Raw/silic-intermediate (volcanic)/ sand-gravel/plains and hillslope	Open land	Mt Tarawera, Rotorua
Recent lava flows (<1000 years)	Raw/silicic-intermediate (volcanic)/ boulders-bedrock (numerous landforms)	Scrub, shrubland, treeland, forest, herbfield, mossfield, open land	Rangitoto Island, Auckland
Old tephra (>500 years) plains (= frost flats)	Silicic-intermediate (volcanic)/ depression/seasonally fluctuating water table/inland, >200 frost days year	Shrubland, scrub, tussockland	Kaingaroa, Central North Island
Frost hollows	Terrace/>200 frosts per annum	Shrubland, scrub	Buller River, Nelson
Boulderfields of silicic-rocks	Raw/silicic/boulders/talus	Open land, lichenfield, shrubland	Glasgow Range, North Westland
Boulderfields of silicic-intermediate rocks (non-volcanic)	Raw/silicic-intermediate (non-volcanic)/boulders/talus	Open land, lichenfield, shrubland	Iron Hill, Western Nelson

Tentative 'common' name	Definition (ie, diagnostic classifiers) and notes	Vegetation structure	Example locality
Volcanic boulderfields	Recent/silicic-intermediate (volcanic)/ boulders/talus/ excessive drainage	Forest, scrub	Mt Eden, Auckland
Debris flow or lahar	Recent/silicic-intermediate (volcanic)/ silt-cobbles	Forest, scrub, mossfield	Maeroa debris flow, Mt Taranaki
Boulderfields of calcareous rocks	Raw/calcareous/boulders/talus	Open land, lichenfield, shrubland	Iron Hill, Western Nelson
Ultramafic boulderfields	Raw/ultramafic/boulders/talus	Open land, lichenfield, shrubland	Red Hills, Southland
Cliffs, scarps and tors of silicic rocks	Raw/silicic/bedrock/cliff, scarp and tor/ inland-alpine	Open land, herbfield, tussockland, shrubland	West Cape District, Fiordland
Cliffs, scarps and tors of mafic rock	Raw/mafic/cliff, scarp and tor/inland-alpine	Open land, herbfield, tussockland, shrubland	Mt Herbert, Banks Peninsula, Canterbury
Calcareous cliffs, scarps and tors	Raw/calcareous/cliff, scarp and tor/ inland-alpine	Open land, herbfield, tussockland, shrubland	Mt Owen, Nelson
Ultramafic cliffs, scarps and tors	Raw/ultramafic/cliff, scarp and tor/ coastal-alpine	Open land, herbfield, tussockland, shrubland	Olivine Range, Southland
Ultramafic hills	Ultramafic/hillslope, hillcrest/(raw-mature)	Open land, herbfield scrub, shrubland, tussockland, forest (very limited extent)	Red Hills, Marlborough
Inland sand dunes	Raw-recent/sand/dune/inland	Open land, scrub, tussockland, herbfield	Clutha Valley, Otago
Inland outwash gravels	Raw-recent/silicic/sand-boulders/ plain/inland	Open land, herbfield, treeland	Pisa Flats, Clutha Valley
Braided riverbeds	Raw-recent/ sand-boulders/plain/ periodically flooded (see Johnson and Gerbeaux, 2004, p.56)	Open land, herbfield	Waimakariri River
Granitic sand plains	Raw/granite/sand-gravel/hillslope, hillcrest	Open land	Lookout Range, Nelson
Granitic gravel fields	Raw/granite/gravel/hillslope, hillcrest	Open land	Mt Titiroa, Manapouri
Sandstone erosion pavement	Raw/quartzose sandstone/bedrock/ hillslope, hillcrest	Open land	Mt Augustus, WestCoast
Limestone erosion pavements	Raw/limestone/bedrock/hillslope, hillcrest/(alpine)	Open land	Matiri Tops, Western Nelson
<b>Other inland systems</b>			
Inland saline (salt pans)	Groundwater salinity/semi arid/ depression (see also Johnson and Gerbeaux, 2004, pp.20, 22)	Herbfield, grassland	Maniototo Valley, Central Otago
Leached terraces	Overmature/sand-gravel/terrace-plain/inland	Open land, herbfield, shrubland	Wilderness, Southland
Cloud forest	High cloud cover (<1500 sunshine hours and >200 rain days per annum)/inland	Forest	Mt Manuoha, Urewera National Park; Waima Forest, western Northland
<b>Geothermal systems</b>			
Heated ground (dry)	Geothermal-excessive heat	Open land, mossfield, shrubland, scrub	Whakarewarewa, Rotorua
Hydrothermally altered ground (now cool)	Geothermal-acid soils, toxic elements	Open land, shrubland, scrub	Whakarewarewa, Rotorua
Acid rain systems	Geothermal-acid rain	Open land, scrub, treeland, forest	White Island, Bay of Plenty
Fumeroles	Geothermal-superheated steam/acid rain/depression	Open land, shrubland	Waimangu, Rotorua
Geothermal streamsides	Geothermal-excessive heat/near permanently saturated (but water table not high)		Waimangu, Rotorua

Tentative 'common' name	Definition (ie, diagnostic classifiers) and notes	Vegetation structure	Example locality
<b>Subterranean or semi-subterranean</b> Sinkholes Cave entrances	Raw/limestone, marble, dolomite/ doline Raw/limestone, marble, dolomite/ cave entrance	Open land, shrubland, tussockland, flaxland Open land, herbfield	Thousand Acre Plateau, Western Nelson Mangapu cave

# 6 National Priority Four

## **National Priority Four:**

To protect habitats of acutely and chronically threatened indigenous species.

## 6.1 Scientific basis for National Priority Four

Much of New Zealand's native flora and fauna, particularly our endemic species, are under threat from a range of factors that include habitat depletion, human exploitation and disturbance, isolation or fragmentation of populations, predation, competition and hybridisation.

To date, about 2,788 of our native species are identified as threatened and, according to the latest threatened species classification lists (2005), 668 are acutely threatened and 257 chronically threatened.

The Department of Conservation has the direct responsibility for the protection of threatened species and carries out habitat protection work on public conservation land. But many threatened species exist on private land as well as public conservation lands, and some occur exclusively on private land. Protecting the habitats of species on private land will help towards protecting the species themselves.

### 6.1.1 How do species qualify as acutely or chronically threatened?

The terms 'acutely' and 'chronically' threatened species used in this statement are derived from the New Zealand Threat Classification system developed by the Department of Conservation (Molloy et al (2002)).

This classification system lists species according to the level of threat they face, and is useful for a range of different users, including the department, government, universities, local authorities and non-government organisations.

#### **Acutely threatened**

The 'acutely threatened' division has three sub-categories – 'nationally critical', 'nationally endangered' and 'nationally vulnerable'. (These equal the IUCN categories of 'critically endangered', 'endangered' and 'vulnerable'). Taxa listed as 'acutely threatened' face a very high risk of extinction in the wild and are defined by criteria that quantify:

- total population size
- area of occupancy
- fragmentation of populations

- declines in total population
- declines in habitat area
- predicted declines due to existing threats.

### **Chronically threatened**

There are two sub-categories for ‘chronically threatened’ taxa – ‘serious decline’ and ‘gradual decline’. Taxa listed in either sub-category also face extinction, but are buffered slightly by either a large total population or a slow decline rate.

## **6.2 Important tools and references**

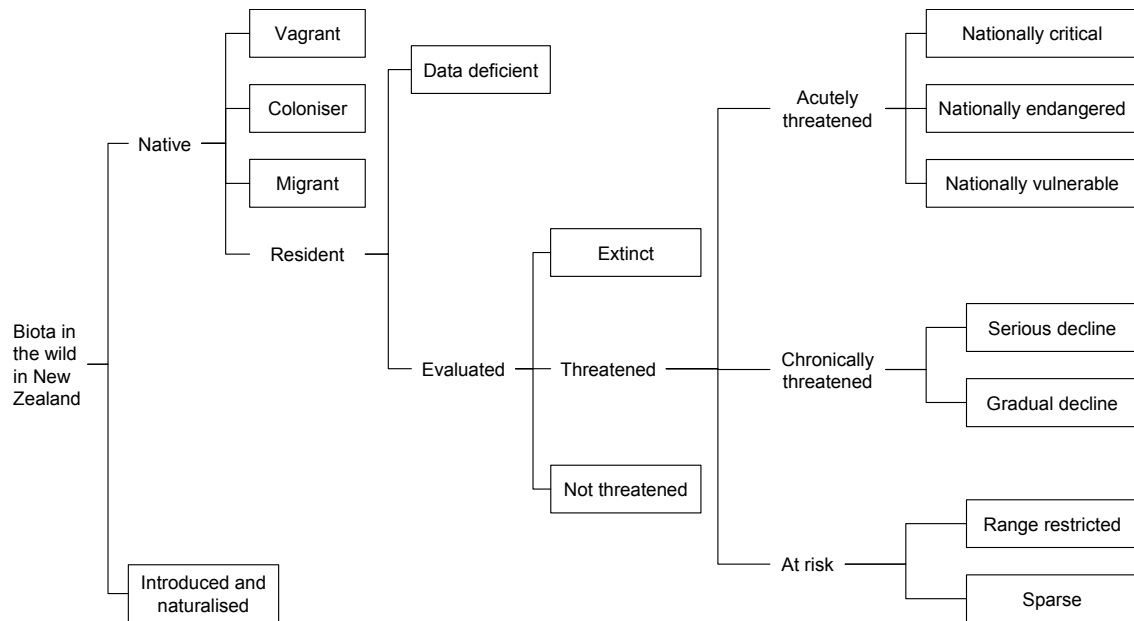
### **6.2.1 The New Zealand Threat Classification System**

As discussed in section 6.1, the New Zealand Threat Classification System places taxa in particular categories that indicate their level of threat of extinction. Figure 3 shows the classification system’s structure. It was designed to assess any taxon found in New Zealand, and applies to marine, terrestrial and freshwater biota.

A series of assessment criteria are used to assign taxa to their relevant threat category. Details of the classification process are outlined in detail in Molloy et al (2002).

The outcome of the classification process is a series of lists which outline the threat status of our native taxa. These lists are now reviewed every three years, and any major changes in the risk of extinction are recorded as they occur. The classification system is also reviewed from time to time, so, for the most up-to-date information on our Threat Classification System, refer to the Department of Conservation website – [www.doc.govt.nz](http://www.doc.govt.nz).

**Figure 3: The classification categories used in the ‘New Zealand Threat Classification System lists – 2002 and 2005’**



Source: Molloy et al (2002).  
Note: Box denotes a category.

The lists provided in Tables 6 and 7 (below) are the 2005 threatened species lists, published in January 2007.

Note that not all of these species occur exclusively on private land. In fact, some only occur on public conservation land. Compiling lists that just cover private land is difficult because there is no full distributional data for these species.

**Table 6: Acutely threatened species list 2005**

Common name	Taxonomic name	Threat category
<b>Bat</b>		
Southern North Island southern short-tailed bat	<i>Mystacina tuberculata tuberculata</i> (southern North Island)	NC
Long-tailed bat (South Island)	<i>Chalinolobus tuberculata</i> (South Island)	NE
Northern short-tailed bat	<i>Mystacina tuberculata aupourica</i>	NE
South Island southern short-tailed bat	<i>Mystacina tuberculata tuberculata</i> (South Island)	NE
Long-tailed bat (North Island)	<i>Chalinolobus tuberculata</i> (North Island)	NV
<b>Bird</b>		
Campbell Island teal	<i>Anas nesiotis</i>	NC
Okarito brown kiwi	<i>Apteryx rowi</i>	NC
Orange-fronted parakeet	<i>Cyanoramphus malherbi</i>	NC
Chatham Island oystercatcher	<i>Haematopus chathamensis</i>	NC
Chatham Island pigeon, Parea	<i>Hemiphaga chathamensis</i>	NC
Black stilt	<i>Himantopus novaezelandiae</i>	NC
Bounty Island shag	<i>Leucocarbo ranfurlyi</i>	NC
Black robin	<i>Petroica traversi</i>	NC
Takahe	<i>Porphyrio hochstetteri</i>	NC
Taiko	<i>Pterodroma magentae</i>	NC
Kakapo	<i>Strigops habroptilus</i>	NC

Common name	Taxonomic name	Threat category
New Zealand shore plover, tuturuatu	<i>Thinornis novaeseelandiae</i>	NC
Southern New Zealand dotterel	<i>Charadrius obscurus obscurus</i>	NC
White heron	<i>Egretta alba modesta</i>	NC
White tern	<i>Gygus alba royana</i>	NC
Kermadec white-faced storm petrel	<i>Pelagodroma marina albiclunis</i>	NC
New Zealand fairy tern	<i>Sterna nereis davisae</i>	NC
Haast tokoeka	<i>Apteryx</i> (Haast)	NC
Campbell Island snipe	<i>Coenocorypha</i> "Campbell"	NC
South Island brown teal	<i>Anas chlorotis</i> "South Island"	NC
Codfish Island South Georgian diving petrel	<i>Pelecanoides georgicus</i> "Codfish Island"	NC
Fiordland crested penguin	<i>Eudyptes pachyrhynchus</i>	NE
Chatham Island shag	<i>Leucocarbo onslowi</i>	NE
Stitchbird, hihi	<i>Notiomystis cincta</i>	NE
Black-fronted tern	<i>Sterna albobristata</i>	NE
Grey-headed mollymawk	<i>Thalassarche chrysostoma</i>	NE
Eastern rockhopper penguin	<i>Eudyptes chrysocome filholi</i>	NE
Crested grebe	<i>Podiceps cristatus australis</i>	NE
Australasian bittern	<i>Botaurus poiciloptilus</i>	NE
Forbes' parakeet	<i>Cyanoramphus forbesi</i>	NE
Erect-crested penguin	<i>Eudyptes sclateri</i>	NE
Blue duck, whio	<i>Hymenolaimus malachorhynchus</i>	NE
Yellowhead, mohua	<i>Mohoua ochrocephala</i>	NE
Kea	<i>Nestor notabilis</i>	NE
Chatham petrel	<i>Pterodroma axillaris</i>	NE
Kermadec petrel	<i>Pterodroma neglecta</i>	NE
Hutton's shearwater	<i>Puffinus huttoni</i>	NE
Grey Duck	<i>Anas superciliosa superciliosa</i>	NE
Stewart Island fernbird, Matata	<i>Bowdleria punctata stewartiana</i>	NE
North Island kokako	<i>Callaeas cinerea wilsoni</i>	NE
North Island weka	<i>Gallirallus australis greyi</i>	NE
Stewart Island weka	<i>Gallirallus australis scotti</i>	NE
South Island kaka	<i>Nestor meridionalis meridionalis</i>	NE
North Island kaka	<i>Nestor meridionalis septentrionalis</i>	NE
Stewart Island robin	<i>Petroica australis rakiura</i>	NE
Chatham Island tit	<i>Petroica macrocephala chathamensis</i>	NE
South Island saddleback, tieke	<i>Philesturnus carunculatus carunculatus</i>	NE
Chatham Island tui	<i>Prothemadera novaeseelandiae chathamensis</i>	NE
Brown teal	<i>Anas chlorotis</i> "North Island"	NE
Southern falcon	<i>Falco novaeseelandiae</i> "southern"	NE
Wrybill, ngutu-pare	<i>Anarhynchus frontalis</i>	NV
Northern royal albatross, toroa	<i>Diomedea sanfordi</i>	NV
Stewart Island shag	<i>Leucocarbo chalconotus</i>	NV
Yellow-eyed penguin	<i>Megadyptes antipodes</i>	NV
Caspian tern	<i>Sterna caspia</i>	NV
Pitt Island shag	<i>Stictocarbo featherstoni</i>	NV
Salvin's mollymawk	<i>Thalassarche salvini</i>	NV
Rock wren	<i>Xenicus gilviventris</i>	NV
Northern New Zealand dotterel	<i>Charadrius obscurus aquilonius</i>	NV
Reef heron	<i>Egretta sacra sacra</i>	NV
White-flipped penguin	<i>Eudyptula minor albosignata</i>	NV
Bush falcon	<i>Falco novaeseelandiae</i> "bush"	NV



Common name	Taxonomic name	Threat category
<b>Bryophyte</b>		
Liverwort	<i>Acromastigum brachyphyllum</i>	NC
Liverwort	<i>Acromastigum verticale</i>	NC
Liverwort	<i>Allisoniella recurva</i>	NC
Liverwort	<i>Allisoniella scottii</i>	NC
Liverwort	<i>Anastrophyllum papillosum</i>	NC
Liverwort	<i>Andrewsianthus hodgsonae</i>	NC
Liverwort	<i>Austroscyphus nitidissimus</i>	NC
Moss	<i>Bartramia alaris</i> (Dixon and Sainsbury)	NC
Liverwort	<i>Bragginsella anomala</i>	NC
Moss	<i>Bryum tenuidens</i> (Dixon and Sainsbury)	NC
Moss	<i>Calliergidium austro-stramineum</i> (Mull Hal ) EB Bartram	NC
Liverwort	<i>Cheilolejeunea tenella</i>	NC
Liverwort	<i>Cololejeunea cardiocarpa</i>	NC
Liverwort	<i>Cololejeunea ellipsoidea</i>	NC
Liverwort	<i>Cololejeunea falcidentata</i>	NC
Liverwort	<i>Cololejeunea pulchella</i> var <i>stylifera</i>	NC
Moss	<i>Crossidium davidai</i> Catcheside	NC
Moss	<i>Crossidium geheebii</i> (Broth) Broth	NC
Moss	<i>Cyclodictyon blumeum</i> (Mull Hal) O Kuntze	NC
Moss	<i>Dicranoweisia spenceri</i> (Dixon and Sainsbury)	NC
Moss	<i>Didymodon calycinus</i> (Dixon)	NC
Moss	<i>Ditrichum brachycarpum</i> (Hampe)	NC
Moss	<i>Ditrichum rufo-aureum</i> (Hampe) Willis	NC
Liverwort	<i>Dumortiera hirsuta</i>	NC
Moss	<i>Epipterygium opararensense</i> (Fife and AJ Shaw)	NC
Moss	<i>Erpodium glaucum</i> (Wilson) IG Stone	NC
Moss	<i>Goniomitrium acuminatum</i> Hook and Wilson	NC
Moss	<i>Grimmia plagiopoda</i>	NC
Moss	<i>Hampeella pallens</i> (Sande Lac) M Fleisch	NC
Liverwort	<i>Herzobryum atrocapillum</i>	NC
Liverwort	<i>Herzogobryum filiforme</i>	NC
Liverwort	<i>Herzogobryum vermiculare</i>	NC
Liverwort	<i>Isolembidium anomalum</i> var <i>anomalum</i>	NC
Liverwort	<i>Isotachis westlandica</i>	NC
Liverwort	<i>Leiomitra julacea</i>	NC
Liverwort	<i>Lejeunea cyanophora</i>	NC
Moss	<i>Lindbergia maritima</i> Lewinsky	NC
Liverwort	<i>Lophozia autoica</i>	NC
Liverwort	<i>Lophozia nivicola</i>	NC
Liverwort	<i>Lophozia pumicola</i>	NC
Liverwort	<i>Lophozia subalpina</i>	NC
Moss	<i>Macromitrium angulatum</i> Mitt	NC
Liverwort	<i>Nephelolejeunea talinayi</i> (S Arnell) Grolle	NC
Liverwort	<i>Pachyschistochila papillifera</i>	NC
Liverwort	<i>Paracromastigum fiordlandiae</i>	NC
Liverwort	<i>Petalophyllum hodgsoniae</i>	NC
Liverwort	<i>Phaeoceros hirticalyx</i>	NC
Moss	<i>Physcomitrella patens</i> subsp <i>readeri</i> (Mull Hal) BC Tan	NC
Moss	<i>Physcomitrium pusillum</i> Hook F and Wilson	NC
Liverwort	<i>Plagiochila baylisii</i>	NC
Liverwort	<i>Plagiochila fragmentisima</i>	NC

Common name	Taxonomic name	Threat category
Moss	<i>Plagiopus oederiana</i> (Sw) HA Crum and LE Anderson	NC
Liverwort	<i>Ptychanthus stephensoniana</i>	NC
Liverwort	<i>Riccardia intercellula</i>	NC
Liverwort	<i>Riccardia pseudodendroceros</i>	NC
Liverwort	<i>Riccardia umida</i>	NC
Liverwort	<i>Schistochila pellucida</i>	NC
Liverwort	<i>Schistochila pluriciliata</i>	NC
Moss	<i>Scorpiurium cucullatum</i> (Mitt) Hedenäs	NC
Liverwort	<i>Seppeltia succuba</i>	NC
Liverwort	<i>Telaranea plumulosa</i>	NC
Liverwort	<i>Temnoma angustifolium</i>	NC
Liverwort	<i>Xenothallus vulcanicus</i>	NC
Liverwort	<i>Brevianthus</i> sp	NC
Liverwort	<i>Frullania</i> "Radar Bush"	NC
Liverwort	<i>Plagiochila hatcheri</i>	NC
Liverwort	<i>Plagiochila kermadecensis</i>	NC
Liverwort	<i>Riccardia aff pallidevirens</i>	NC
Liverwort	<i>Telaranea exigua</i>	NC
Moss	<i>Archidium elatum</i> Dixon and Sainsbury	NE
Liverwort	<i>Brevianthus flavus</i>	NE
Liverwort	<i>Cephalolobus squarrosus</i>	NE
Liverwort	<i>Chaetophyllopsis whiteleggei</i>	NE
Moss	<i>Chorisodontium aciphyllum</i> (Hook F and Wilson) Broth	NE
Moss	<i>Fissidens berteroi</i> (Mont) Mull Hal	NE
Moss	<i>Fissidens integerrimus</i> Mitt	NE
Moss	<i>Fissidens strictus</i> Hook F and Wilson	NE
Liverwort	<i>Goebelobryum unguiculatum</i>	NE
Liverwort	<i>Neogrollea notabilis</i>	NE
Liverwort	<i>Petalophyllum australe</i>	NE
Liverwort	<i>Petalophyllum preissei</i>	NE
Liverwort	<i>Radula papulosa</i>	NE
Liverwort	<i>Ricciocarpos natans</i>	NE
Moss	<i>Seligeria diminuta</i> (R Br bis) Dixon	NE
Liverwort	<i>Stenolejeunea acuminata</i>	NE
Liverwort	<i>Cololejeunea</i> sp 1	NE
Liverwort	<i>Siphonolejeunea</i> "rock"	NE
Liverwort	<i>Zoopsis nitida</i>	NV
<b>Freshwater fish</b>		
Lowland longjaw galaxias	<i>Galaxias cobitinis</i> =	NC
Canterbury mudfish	<i>Neochanna burrowsius</i>	NE
Northland mudfish	<i>Neochanna heleioides</i>	NE
Possible new non-diadromous galaxias	<i>Galaxias</i> "Teviot"	NV
Eldon's galaxias	<i>Galaxias eldoni</i>	NV
Dune lakes galaxias	<i>Galaxias</i> sp	NV
<b>Freshwater Invertebrate</b>		
Snail	<i>Lymnaea tomentosa</i> Pfeiffer, 1855	NC
Caddisfly	<i>Oeconesus angustus</i> Ward, 1997	NC
Caddisfly	<i>Pseudoeconesus haasti</i> Ward, 1997	NC
Caddisfly	<i>Psilochorema spiniharpax</i> Ward, 1996	NC
Diving beetle	<i>Rhantus plantaris</i> Sharp	NC
Diving beetle	<i>Rhantus schauinslandi</i> Ordish, 1989	NC

Common name	Taxonomic name	Threat category
Caddisfly	<i>Tiphobiosis hinewai</i> Ward, 1995	NC
Caddisfly	<i>Tiphobiosis kuscheli</i> Wise, 1972	NC
Caddisfly	<i>Tiphobiosis quadrifurca</i> Ward, 1997	NC
Caddisfly	<i>Tiphobiosis schmidi</i> Ward, 1998	NC
Caddisfly	<i>Tiphobiosis trifurca</i> McFarlane, 1981	NC
Caddisfly	<i>Edpercivalia banksiensis</i> McFarlane, 1939	NE
Caddisfly	<i>Hydrobiosis styx</i> McFarlane, 1951	NE
Caddisfly	<i>Kokiria miharo</i> McFarlane, 1964	NV
<b>Frog</b>		
Archev's frog	<i>Leiopelma archevi</i>	NC
Hamilton's frog	<i>Leiopelma hamiltoni</i>	NC
Maud Island frog	<i>Leiopelma pakeka</i>	NE
<b>Fungus</b>		
	<i>Austrogaster novaezelandiae</i>	NC
	<i>Berggrenia cyclospora</i>	NC
	<i>Cantharellus elsae</i>	NC
	<i>Chalciporus aurantiacus</i>	NC
	<i>Chlorovibrissea bicolor</i>	NC
	<i>Chlorovibrissea melanochlora</i>	NC
	<i>Chlorovibrissea tasmanica</i>	NC
Fischer's egg	<i>Claustula fischeri</i> KM Curtis 1926	NC
	<i>Colpoma nothofagi</i>	NC
	<i>Cordierites acanthophora</i>	NC
	<i>Dichomitus newhookii</i>	NC
Pukatea bracket	<i>Ganoderma</i> sp. "Awaroa"	NC
	<i>Gomphus dingleyae</i>	NC
	<i>Gomphus novaezelandiae</i>	NC
	<i>Gyroporus castaneus</i>	NC
	<i>Hysterangium youngii</i>	NC
	<i>Inonotus chondromyelus</i>	NC
	<i>Lactarius maruiaensis</i>	NC
	<i>Phallobata alba</i>	NC
	<i>Phanerochaete citrina</i>	NC
	<i>Phanerochaete corymbata</i>	NC
	<i>Phanerochaete luteoaurantiaca</i>	NC
Septate-spored polypore	<i>Polyporus septosporus</i> PK Buchanan and Ryvarden 1998	NC
Chatham Island sow thistle rust	<i>Puccinia embergeriae</i> McKenzie and PR Johnst ined	NC
	<i>Puccinia freycinetiae</i>	NC
	<i>Ramaria aureorhiza</i>	NC
	<i>Ramaria avellaneovortex</i>	NC
	<i>Ramaria basirobusta</i>	NC
	<i>Ramaria junquilleovortex</i>	NC
	<i>Ramaria piedmontiana</i>	NC
	<i>Ramariopsis avellanea</i>	NC
	<i>Ramariopsis avellaneoinversa</i>	NC
	<i>Ramariopsis tortuosa</i>	NC
	<i>Russula inquinata</i>	NC
	<i>Russula littoralis</i>	NC
	<i>Russula miniata</i>	NC
	<i>Russula papakaiensis</i>	NC

Common name	Taxonomic name	Threat category
Russula	<i>Russula pleurogena</i>	NC
	<i>Russula solitaria</i>	NC
	<i>Russula vivida</i> McNabb 1973	NC
	<i>Sarcosoma orientale</i>	NC
	<i>Squamanita squarrolosa</i>	NC
	<i>Thaxterogaster cartilagineus</i>	NC
	Undescribed genus ( <i>Trichocomaceae</i> )	NC
	<i>Uredo chathamica</i>	NC
	<i>Uredo salicorniae</i>	NC
	<i>Volvariella surrecta</i>	NC
	<i>Xylaria wellingtonensis</i>	NC
<i>Xylaria zealandica</i>	NC	
<b>Reptile</b>		
Coromandel striped gecko	<i>Hoplodactylus stephensi</i> Coromandel populations	NC
Grand skink	<i>Oligosoma grande</i>	NC
Open Bay Islands gecko	<i>Hoplodactylus</i> sp "Open Bay Islands gecko"	NC
Open Bay Island skink	<i>Oligosoma</i> "Open Bay Island skink"	NC
Otago skink	<i>Oligosoma otagense</i>	NC
Southern North Island speckled skink	<i>Oligosoma</i> aff <i>infrapunctatum</i> "Southern North Island"	NE
Spotted skink "Central Canterbury"	<i>Oligosoma</i> aff <i>lineocellatum</i> "Central Canterbury"	NE
Chevron skink	<i>Oligosoma homalonotum</i>	NE
Brothers Island tuatara	<i>Sphenodon guntheri</i>	NE
Whitaker's skink	<i>Cyclodina whitakeri</i>	NV
<b>Terrestrial invertebrate</b>		
Moth	<i>Aletia cyanopetra</i> (Meyrick, 1927)	NC
Snail	<i>Alsolemia cresswelli</i> (Climo, 1978)	NC
Nemertine worm	<i>Antiponemertes allisonae</i> (Moore, 1973)	NC
Aphid	<i>Aphis coprosmae</i> Laing ex Tilyard	NC
Bird louse	<i>Apterygon okarito</i> Palma and Price, 2004	NC
Moth	<i>Archyala culta</i> Philpott, 1931	NC
Moth	<i>Archyala opulenta</i> Philpott, 1926	NC
Moth	<i>Arctesthes</i> sp "Von"	NC
Moth	<i>Asaphodes imperfecta</i> (Philpott, 1905)	NC
Moth	<i>Asaphodes obarata</i> F and R, 1875	NC
Stick insect	<i>Asteliaphasma naomi</i> (Salmon)	NC
Leaf-vein slug	Athoracophorid "Mt Hikurangi"	NC
Slug	<i>Athoracophorus</i> sp 3 (NMNZ M 151429) "Waiare"	NC
Moth	<i>Australothis volatilis</i> Matthews and Patrick, 1998	NC
Moth	<i>Bityla pallida</i> (Hudson, 1905)	NC
Snail	<i>Cavellia</i> "Kohaihai" (NMNZ M 36649)	NC
Snail	Charopidae sp 164 (NMNZ M 88458)	NC
Snail	Charopidae sp 46 (NMNZ M 87828)	NC
Snail	<i>Chaureopa roscoei</i> Climo, 1985	NC
Moth	<i>Chersadula ochrogaster</i> Meyrick, 1923	NC
Snail	<i>Climocella pukanui</i> Goulstone and Brook, 1999	NC
Bird louse	<i>Coloceras harrisoni</i> (Tendeiro, 1972)	NC
Moth	<i>Coridomorpha stella</i> Meyrick, 1914	NC
A pleasing fungus beetle	<i>Cryptodacne</i> sp "Chathams"	NC
Snail	<i>Cytora hirsutissima</i> (Powell, 1951)	NC
Snail	<i>Cytora</i> sp 11 (NMNZ M 87893)	NC
Snail	<i>Delos</i> sp 1 (NMNZ M 29346)	NC

Common name	Taxonomic name	Threat category
Snail	Delos sp 13 (NMNZ M 29345)	NC
Snail	<i>Delouagapia tasmani</i>	NC
Snail	<i>Egestula</i> "broomfieldi" (NMNZ M 78965)	NC
Moth	<i>Elachista eurychora</i> (Meyrick, 1919)	NC
Moth	<i>Erechthias lychnopa</i> Meyrick, 1927	NC
Moth	<i>Euxoa cerapachodes</i> Guenée, 1868	NC
Snail	<i>Fectola melchior</i> Goustone and Brook, 1999	NC
Snail	<i>Flammoconcha</i> "marstoni" (NMNZ M 22464)	NC
Snail	<i>Flammoconcha cumberi</i> (Powell, 1941)	NC
Mokohinau stag beetle	<i>Geodorcus ithaginis</i> (Broun, 1893)	NC
Stag beetle	<i>Geodorcus</i> sp "Sisters"	NC
Moth	Gracillariidae n sp "Teucriidium"	NC
Spider – Cyatholipidae	<i>Hanea paturau</i> Forster, 1988	NC
Ground weta	<i>Hemiandrus</i> "Cape Campbell"	NC
Moth	<i>Heterocrossa maculata</i> (Philpott, 1927)	NC
Open Bay Island leech	<i>Hirudobdella antipodum</i> (Benham 1904)	NC
Ground beetle	<i>Holcaspis abdita</i> Johns, 2004	NC
Ground beetle	<i>Holcaspis bidentella</i> Johns, 2004	NC
Ground beetle	<i>Holcaspis brevicula</i> Butcher, 1984	NC
Ground beetle	<i>Holcaspis</i> n sp	NC
Moth	<i>Izatha psychra</i> (Meyrick, 1883)	NC
Moth	<i>Izatha rigescens</i> Meyrick, 1929	NC
Moth	<i>Kiwaia</i> sp "Cloudy Bay"	NC
Native bee	<i>Leioproctus</i> "nunui"	NC
Nematode	<i>Longidorus waikouaitii</i> Yeates, Boag and Brown, 1997	NC
Bird louse	<i>Longimenopon</i> sp	NC
Weevil	<i>Lyperobius nesidiotes</i> Kuschel	NC
Ida Valley carabid	<i>Mecodema laeviceps</i> Broun, 1904	NC
Ground beetle	<i>Mecodema</i> sp "Te Paki"	NC
Ground beetle	<i>Megadromus</i> sp 8 "Omeo Hut"	NC
Darkling beetle	<i>Menimus sinuatus</i> Broun, 1886	NC
Moth	<i>Meterana</i> "Foveaux Strait"	NC
Mercury Islands tusked weta	<i>Motuweta isolata</i> Johns, 1997	NC
Moth	<i>Notoreas</i> "Castlepoint"	NC
Moth	<i>Notoreas</i> "Cape Turnagain"	NC
Moth	<i>Notoreas</i> "Mason Bay"	NC
Moth	<i>Notoreas</i> "Rahu Saddle"	NC
Moth	<i>Notoreas</i> "South Shag River"	NC
Moth	<i>Notoreas</i> "Waiho Flats"	NC
Moth	<i>Orocrambus fugitivellus</i> (Hudson, 1950)	NC
Moth	<i>Orthoclydon pseudostinaria</i> (Hudson, 1918)	NC
Aphid	<i>Paradoxaphis aristoteliae</i> Sunde, 1987	NC
Bird louse	<i>Penenirmus</i> sp	NC
Snail	<i>Phrixgnathus</i> "wallacei" (NMNZ M 88229)	NC
Snail	<i>Phrixgnathus transitans</i> Suter, 1892	NC
King Island turrett snail	<i>Placostylus (Basileostylus) bollonsi</i> "West"	NC
King Island turrett snail	<i>Placostylus (Basileostylus) bollonsi caperatus</i> Powell, 1948	NC
Flax snail (Pupuharakeke)	<i>Placostylus (Maoristylus) ambagiosus</i> "Haupatoto"	NC
Flax snail (Pupuharakeke)	<i>Placostylus (Maoristylus) ambagiosus</i> "Kauaetewhakapeke Stream"	NC
Flax snail (Pupuharakeke)	<i>Placostylus (Maoristylus) ambagiosus</i> "Poroiki"	NC

Common name	Taxonomic name	Threat category
Flax snail (Pupuharakeke)	<i>Placostylus (Maoristylus) ambagiosus</i> "Rangiora"	NC
Flax snail (Pupuharakeke)	<i>Placostylus (Maoristylus) ambagiosus</i> "Tapotupotu"	NC
Flax snail (Pupuharakeke)	<i>Placostylus (Maoristylus) ambagiosus</i> "Te Paki"	NC
Flax snail (Pupuharakeke)	<i>Placostylus (Maoristylus) ambagiosus</i> "Tirikawa Coast"	NC
Flax snail (Pupuharakeke)	<i>Placostylus (Maoristylus) ambagiosus</i> "Tirikawa Trig"	NC
Flax snail (Pupuharakeke)	<i>Placostylus (Maoristylus) ambagiosus ambagiosus</i> Suter, 1906	NC
Flax snail (Pupuharakeke)	<i>Placostylus (Maoristylus) ambagiosus consobrinus</i> Powell, 1938	NC
Flax snail (Pupuharakeke)	<i>Placostylus (Maoristylus) ambagiosus keenorum</i> Powell, 1947	NC
Flax snail (Pupuharakeke)	<i>Placostylus (Maoristylus) ambagiosus pandora</i> Powell, 1951	NC
Flax snail (Pupuharakeke)	<i>Placostylus (Maoristylus) ambagiosus wattii</i> Powell, 1947	NC
Flax snail (Pupuharakeke)	<i>Placostylus (Maoristylus) ambagiosus whareana</i> Powell, 1951	NC
Large land snail	<i>Powelliphanta</i> "Anatoki Range"	NC
Large land snail	<i>Powelliphanta</i> "Baton"	NC
Large land snail	<i>Powelliphanta</i> "Mt Augustus"	NC
Large land snail	<i>Powelliphanta gagei</i> (Powell, 1938)	NC
Large land snail	<i>Powelliphanta gilliesi</i> "Haidinger"	NC
Large land snail	<i>Powelliphanta gilliesi brunnea</i> (Powell, 1938)	NC
Large land snail	<i>Powelliphanta lignaria</i> "millertoni"	NC
Large land snail	<i>Powelliphanta traversi otakia</i> (Powell, 1946)	NC
Harvestman	<i>Prasmiola unica</i> Forster, 1954	NC
Slug	<i>Pseudaneitea ramsayi</i> Climo, 1973	NC
Darkling beetle	<i>Pseudhelops antipodensis</i>	NC
Snail	<i>Punctidae</i> sp 226 (NMNZ M 154908)	NC
Snail	<i>Punctidae</i> sp 27 (NMNZ M 79798)	NC
Snail	<i>Punctidae</i> sp 6 (NMNZ M 151458)	NC
Bird louse	<i>Quadriceps dominella</i> Timmermann, 1953	NC
Bird louse	<i>Quadriceps novaeseelandiae</i> Timmermann, 1953	NC
Nematode	<i>Radopholus cavenessi</i> Egunjobi, 1968	NC
Bird louse	<i>Rallicola (Apterocola) rodericki</i> Palma, 1991	NC
Bird louse	<i>Rallicola (Rallicola) takahe</i> Holloway, 1956	NC
Snail	<i>Rhytida oconnori</i> Powell, 1946	NC
Snail	<i>Rhytidarex buddlei</i> (Powell, 1948)	NC
Moth	<i>Sabatina</i> sp "Secretary Island"	NC
Bird louse	<i>Saemundssonina (Puffinoecus)</i> sp	NC
Bird louse	<i>Saemundssonina (Saemundssonina) chathamensis</i> Timmermann, 1977	NC
Paua slug	<i>Schizoglossa gigantea</i> Powell, 1930	NC
Moth	<i>Scythris</i> sp "stripe"	NC
Alpine grasshopper	<i>Sigaus homerensis</i> Morris, 2003	NC
Moth	<i>Stathmopoda campylocha</i> Meyrick, 1889	NC
Moth	<i>Stigmella</i> sp "Olearia"	NC
Moth	<i>Titanomis sisyrota</i> Meyrick, 1888	NC
Moth	<i>Trachypepla roseata</i> Philpott, 1923	NC
Snail	<i>Wainuia</i> "Mount Tuhua"	NC
Moth	<i>Xanthorhoe bulbulata</i> (Guenée, 1868)	NC
Pitt Island longhorn	<i>Xylotoles costatus</i> Pascoe, 1875	NC
Spider – Miturgidae	<i>Zealocetus cardronaensis</i> Forster and Wilton, 1974	NC
Back Beach beetle	<i>Zecillenus tillyardi</i> (Brookes, 1927)	NC

Common name	Taxonomic name	Threat category
Pimelea bug	<i>Pimeleocoris viridis</i> Eyles and Schuh, 2003	NC
Bird louse	<i>Acidoproctus gottwaldhirschi</i> (Eichler, 1958)	NE
Snail	<i>Allodiscus fallax</i> Powell, 1952	NE
Cook Strait click beetle	<i>Amychus granulatus</i> (Broun, 1886)	NE
Stephens Island weevil	<i>Anagotus stephenensis</i> Kuschel, 1982	NE
Bird louse	<i>Anaticola</i> sp	NE
Aphid	<i>Aphis healyi</i> Cottier, 1953	NE
Moth	<i>Asaphodes frivola</i> (Meyrick, 1913)	NE
Moth	<i>Asaphodes stinaria</i> (Guenee, 1868)	NE
Bird louse	<i>Austrogoniodes strutheus</i> Harrison, 1915	NE
Grasshopper	<i>Brachaspis</i> "lowland"	NE
Robust grasshopper	<i>Brachaspis robustus</i> Bigelow, 1967 ss	NE
Bird louse	<i>Brueelia</i> sp (kokako)	NE
Bird louse	<i>Brueelia</i> sp (SI saddleback)	NE
Moth	<i>Cephalissa siria</i> Meyrick, 1884	NE
Snail	Charopidae sp 165 (NMNZ M 99147)	NE
Snail	Charopidae sp 166 (NMNZ M 79360)	NE
Snail	Charopidae sp 27 (NMNZ M 58110)	NE
Bird louse	<i>Colpocephalum pilgrimi</i> Price, 1967	NE
Snail	<i>Cytora</i> sp 14 (NMNZ M 151437)	NE
Moth	<i>Declana</i> sp "grey toreuta"	NE
Herekopare weta	<i>Deinacrida carinata</i> Salmon, 1950	NE
Little Barrier giant weta	<i>Deinacrida heteracantha</i> White, 1842	NE
Mahoenui giant weta	<i>Deinacrida mahoenui</i> Gibbs, 1999	NE
Moth	<i>Dichromodes</i> "Cloudy Bay"	NE
Spider – Pisauridae	<i>Dolomedes schauinslandi</i> Simon, 1899	NE
Moth	<i>Ericodesma aerodana</i> (Meyrick, 1881)	NE
Snail	<i>Flammulina tepakiensis</i> Gardner, 1977	NE
Bird louse	<i>Forficuloecus meinertzhageni</i> Guimarães, 1974	NE
Bird louse	<i>Forficuloecus pilgrimi</i> Guimarães, 1985	NE
Moth	<i>Gingidiobora subobscurata</i> (Walker, 1862) species complex "eastern Otago"	NE
Moth	<i>Graphania</i> cf <i>tetrachroa</i> "Olearia"	NE
Canterbury knobbed weevil	<i>Hadramphus tuberculatus</i> (Pascoe, 1877)	NE
Bird louse	<i>Heteromenopon (Keamenopon) kea</i> (Kellogg, 1907)	NE
Moth	<i>Kiwaia</i> "plains jumper"	NE
Moth	<i>Kiwaia jeanae</i> Philpott, 1930	NE
Moth	<i>Kupea electilis</i> Philpott, 1930	NE
Carabid	<i>Loxomerus</i> sp "Bollons Island"	NE
Moth	<i>Maoritenes</i> sp "Olearia"	NE
Stephens Island ground beetle	<i>Mecodema costellum costellum</i> Broun, 1903	NE
Ground beetle	<i>Megadromus</i> "Omarama"	NE
Metallic green ground beetle	<i>Megadromus antarcticus</i> subsp 1	NE
Darkling beetle	<i>Mimopeus parallelus</i> Watt, 1988	NE
Bird louse	<i>Neopsittaconirmus kea</i> (Kellogg, 1907)	NE
Moth	<i>Notoreas</i> "Cape Campbell"	NE
Moth	<i>Notoreas</i> "northern"	NE
Moth	<i>Orocrambus</i> "Mackenzie Basin"	NE
Moth	<i>Orocrambus jansoni</i> Gaskin, 1975	NE
Moth	<i>Orocrambus sophistes</i> (Meyrick, 1905)	NE
Moth	<i>Pasiphila</i> sp "Olearia"	NE
Bird louse	<i>Philopterus novaezealandiae</i> Palma and Price, 2000	NE

Common name	Taxonomic name	Threat category
Snail	<i>Phrixgnathus murdochi</i> Suter, 1894	NE
King Island turrett snail	<i>Placostylus (Basileostylus) bollonsi arbutus</i> Powell, 1948	NE
King Island turrett snail	<i>Placostylus (Basileostylus) bollonsi bollonsi</i> Suter, 1908	NE
Flax snail (Pupuharakeke)	<i>Placostylus (Maoristylus) ambagiosus</i> "Ngaupoko"	NE
Flax snail (Pupuharakeke)	<i>Placostylus (Maoristylus) ambagiosus annectens</i> Powell, 1938	NE
Flax snail (Pupuharakeke)	<i>Placostylus (Maoristylus) ambagiosus michiei</i> Powell, 1951	NE
Flax snail (Pupuharakeke)	<i>Placostylus (Maoristylus) ambagiosus paraspiritus</i> Powell, 1951	NE
Large land snail	<i>Powelliphanta</i> "Buller River"	NE
Large land snail	<i>Powelliphanta</i> "Gunner River"	NE
Large land snail	<i>Powelliphanta</i> "Maungaharuru"	NE
Large land snail	<i>Powelliphanta</i> "Owen"	NE
Large land snail	<i>Powelliphanta</i> "Parapara"	NE
Large land snail	<i>Powelliphanta</i> "patrickensis" ( <i>sensu</i> Powell, 1949)	NE
Large land snail	<i>Powelliphanta gilliesi</i> "Heaphy"	NE
Large land snail	<i>Powelliphanta gilliesi aurea</i> (Powell, 1946)	NE
Large land snail	<i>Powelliphanta gilliesi gilliesi</i> (Smith, 1880)	NE
Large land snail	<i>Powelliphanta gilliesi jamesoni</i> (Powell, 1936)	NE
Large land snail	<i>Powelliphanta gilliesi kahurangica</i> (Powell, 1936)	NE
Large land snail	<i>Powelliphanta gilliesi montana</i> (Powell, 1936)	NE
Large land snail	<i>Powelliphanta hochstetteri anatokiensis</i> (Powell, 1938) red form	NE
Large land snail	<i>Powelliphanta hochstetteri anatokiensis</i> (Powell, 1938) yellow form	NE
Large land snail	<i>Powelliphanta lignaria johnstoni</i> (Powell, 1946)	NE
Large land snail	<i>Powelliphanta lignaria rotella</i> (Powell, 1938)	NE
Large land snail	<i>Powelliphanta lignaria ruforadiata</i> (Powell, 1949)	NE
Large land snail	<i>Powelliphanta rossiana rossiana</i> (Powell, 1930)	NE
Large land snail	<i>Powelliphanta superba</i> "Gouland Range"	NE
Large land snail	<i>Powelliphanta superba harveyi</i> (Powell, 1946)	NE
Large land snail	<i>Powelliphanta superba mouatae</i> (Powell, 1946)	NE
Large land snail	<i>Powelliphanta superba prouseorum</i> (Powell, 1946)	NE
Large land snail	<i>Powelliphanta superba richardsoni</i> (Powell, 1946)	NE
Large land snail	<i>Powelliphanta traversi florida</i> (Powell, 1946)	NE
Large land snail	<i>Powelliphanta traversi koputaroa</i> (Powell, 1946)	NE
Large land snail	<i>Powelliphanta traversi latizona</i> (Powell, 1949)	NE
Large land snail	<i>Powelliphanta traversi tararuaensis</i> (Powell, 1938)	NE
Large land snail	<i>Powelliphanta traversi traversi</i> (Powell, 1930)	NE
Scarab/chafer Beetle	<i>Prodontria bicolorata</i> Given, 1964	NE
Cromwell chafer beetle	<i>Prodontria lewisii</i> Broun, 1904	NE
Moth	<i>Protosynaema</i> sp "olearia"	NE
Darkling beetle	<i>Pseudhelops clandestinus</i> Watt, 1971	NE
Moth	<i>Pseudocoremia</i> sp "knobby"	NE
Snail	<i>Punctidae</i> sp 12 (NMNZ M 87990)	NE
Snail	<i>Punctidae</i> sp 20 (NMNZ M 116650), "Microlaoma" "unicolorata")	NE
Snail	<i>Punctidae</i> sp 64 (NMNZ M 68410)	NE
Moth	<i>Schiffermuelleria orthophanes</i> (Meyrick, 1905)	NE
Alpine grasshopper	<i>Sigauss childi</i> Jamieson, 1999	NE
Moth	<i>Stathmopoda albimaculata</i> Philpott, 1931	NE
Weevil	<i>Stephanorhynchus insolitus</i> Broun, 1893	NE



Common name	Taxonomic name	Threat category
Moth	<i>Theoxena scissaria</i> (Guenée, 1868)	NE
Bird louse	<i>Trabeculus flemingi</i> Timmermann, 1959	NE
Snail	<i>Wainuia clarki</i> Powell, 1936	NE
Moth	<i>Xanthorhoe frigida</i> Howes, 1946	NE
Snail	<i>Amborhytida tarangensis</i> (Powell, 1930)	NV
Bird louse	<i>Austrogoniodes vanalphenae</i> Banks and Palma, 2003	NV
Coxella weevil	<i>Hadramphus spinipennis</i> Broun, 1911	NV
Large land snail	<i>Powelliphanta fiordlandica</i> (Climo, 1971)	NV
Large land snail	<i>Powelliphanta gilliesi compta</i> (Powell, 1930)	NV
Large land snail	<i>Powelliphanta lignaria lignaria</i> (Hutton, 1888)	NV
Large land snail	<i>Powelliphanta lignaria lusca</i> (Powell, 1949)	NV
Large land snail	<i>Powelliphanta lignaria oconnori</i> (Powell, 1938)	NV
Large land snail	<i>Powelliphanta lignaria unicolorata</i> (Powell, 1930)	NV
Moth	<i>Pyrgotis</i> sp "olearia"	NV
Snail	<i>Rhytida greenwoodi webbi</i> Powell, 1949	NV
<b>Vascular plants</b>		
	<i>Acaena rorida</i> BH Macmill	NC
	<i>Alectryon excelsus</i> subsp <i>grandis</i> (Cheeseman) de Lange et EK Cameron	NC
	<i>Anzybas carsei</i> (Cheeseman) DL Jones et MA Clem	NC
	<i>Atriplex hollowayi</i> de Lange et DA Norton	NC
	<i>Botrychium</i> aff <i>lunaria</i> (CHR 289336; NW Nelson)	NC
	<i>Brachyscome pinnata</i> Hook F	NC
	<i>Calochilus</i> aff <i>herbaceus</i> (CHR 65825; Kaimaumuau)	NC
	<i>Cardamine</i> (a) (CHR 500569; Awahokomo)	NC
	<i>Cardamine</i> (c) (CHR 65058; Reporoa Bog)	NC
	<i>Carex dolomitica</i> Heenan et de Lange	NC
	<i>Carmichaelia hollowayi</i> G Simpson	NC
	<i>Carmichaelia muritai</i> (AW Purdie) Heenan	NC
	<i>Celmisia</i> aff <i>gracilentia</i> (b) (CHR 469722; Mangaweka)	NC
	<i>Celmisia macmahonii</i> Kirk var <i>macmahonii</i>	NC
	<i>Centipeda minima</i> (L) A Braun et Asch subsp <i>minima</i>	NC
	<i>Ceratocephala pungens</i> Garn Jones	NC
	<i>Christella dentata</i> (Forssk) Brownsey et Jermy sens str	NC
	<i>Clianthus puniceus</i> (G Don) Sol ex Lindl	NC
	<i>Coprosma spathulata</i> subsp <i>hikuruana</i> de Lange et Heenan	NC
	<i>Cortaderia turbaria</i> Connor	NC
	<i>Craspedia</i> (a) (CHR 511522; Clutha River)	NC
	<i>Craspedia</i> (b) (CHR 516324; Leatham)	NC
	<i>Craspedia</i> (i) (CHR 395643; Fyfe River)	NC
	<i>Craspedia</i> (j) (CHR 516302; Lake Heron)	NC
	<i>Crassula hunua</i> AP Druce	NC
	<i>Davallia tasmanii</i> subsp <i>cristata</i> von Konrat, Braggins et de Lange	NC
	<i>Euphrasia</i> (a) (CHR 471903; "white")	NC
	<i>Festuca</i> aff <i>novae-zelandiae</i> (AK 252541; Awahokomo)	NC
	<i>Gentiana</i> aff <i>astonii</i> (a) (CHR 529112; Mt Brown)	NC
	<i>Gentiana</i> aff <i>astonii</i> (b) (CHR 529111; Pareora River)	NC
	<i>Gentiana</i> aff <i>astonii</i> (e) (CHR 542276; Manahune)	NC
	<i>Gentiana</i> aff <i>saxosa</i> (AK 7316; Charleston)	NC
	<i>Gunnera hamiltonii</i> Kirk	NC

Common name	Taxonomic name	Threat category
	<i>Hebe aff bishopiana</i> (AK 202263; Hikurangi Swamp)	NC
	<i>Hebe breviracemosa</i> (WRB Oliv) Cockayne et Allan	NC
	<i>Hebe societatis</i> Bayly et Kellow	NC
	<i>Hypsela aff rivalis</i> (CHR 369981; Burgoo Stream)	NC
	<i>Isoetes aff kirkii</i> (CHR 247118A; Lake Omapere)	NC
	<i>Koeleria aff novozelandica</i> (AK 252546; Awahokomo)	NC
	<i>Lepidium aff oleraceum</i> (a) (AK 230459; Chatham Islands)	NC
	<i>Lepidium aff oleraceum</i> (d) (AK 255607; Mangere)	NC
	<i>Lepidium banksii</i> Kirk	NC
	<i>Lepidium sisymbrioides</i> subsp <i>matau</i> (Petrie) Thell	NC
	<i>Leptinella</i> (a) (CHR 515297; Clutha River)	NC
	<i>Leptinella filiformis</i> (Hook F) DG Lloyd et C Webb	NC
	<i>Limosella</i> (b) (CHR 515038; Manutahi)	NC
	<i>Linguella puberula</i> Hook F	NC
	<i>Linum monogynum</i> var <i>chathamicum</i> Cockayne (CHR 417633)	NC
	<i>Mazus novaezeelandiae</i> subsp <i>impolitus</i> f <i>hirta</i> Heenan	NC
	<i>Melicytus aff obovatus</i> (b) (AK 235617; Mt Burnett)	NC
	<i>Metrosideros bartlettii</i> JW Dawson	NC
	<i>Microtis aff unifolia</i> (CHR 532775; Fox)	NC
	<i>Myosotis</i> (b) (CHR 386966; Mt Tapuae-O-Uenuku)	NC
	<i>Myosotis albosericea</i> Hook F	NC
	<i>Myosotis angustata</i> Cheeseman	NC
	<i>Myosotis australis</i> var <i>lytteltonensis</i> Laing et A Wall	NC
	<i>Myosotis cheesemanii</i> Petrie	NC
	<i>Myosotis petiolata</i> Hook F var <i>petiolata</i>	NC
	<i>Neopaxia drucei</i> Heenan	NC
	<i>Olearia aff odorata</i> (CHR 386084; Canterbury Plains)	NC
	<i>Olearia gardneri</i> Heads	NC
	<i>Pachycladon aff fastigiata</i> (CHR 279206; Chalk Range)	NC
	<i>Pachycladon exilis</i> (Heenan) Heenan et A Mitch	NC
	<i>Pennantia baylisiana</i> (WRB Oliv) GTS Baylis	NC
	<i>Pimelea</i> (a) (CHR 495025; Turakina)	NC
	<i>Pimelea aff aridula</i> (a) (CHR 282959; Te Mata Peak)	NC
	<i>Pittosporum turneri</i> Petrie	NC
	<i>Poa spania</i> Edgar et Molloy	NC
	<i>Poa sudicola</i> Edgar	NC
	<i>Pomaderris apetala</i> subsp <i>maritima</i> NG Walsh et F Coates	NC
	<i>Pratia aff angulata</i> (AK 212143; Woodhill)	NC
	<i>Pterostylis micromega</i> Hook F	NC
	<i>Puccinellia raroflorens</i> Edgar	NC
	<i>Puccinellia walkeri</i> subsp <i>chathamica</i> (Cheeseman) Edgar	NC
	<i>Ranunculus</i> (a) (AKU 19876; Hope)	NC
	<i>Ranunculus aff royi</i> (CHR 513327; Waihao)	NC
	<i>Sebaea ovata</i> (Labill) R Br	NC
	<i>Sicyos australis</i> Endl	NC
	<i>Tecomanthe speciosa</i> WRB Oliv	NC
	<i>Thelymitra</i> (a) (WELT 79140; Ahipara)	NC
	<i>Thelymitra sanscilia</i> Hatch	NC
	<i>Tmesipteris aff tannensis</i> (CHR 496779; Banks Peninsula)	NC
	<i>Trichomanes</i> (AK 252983; Kerikeri)	NC

Common name	Taxonomic name	Threat category
	<i>Trisetum aff lepidum</i> (AK 251835; Awahokomo)	NC
	<i>Uncinia perplexa</i> Heenan et de Lange	NC
	<i>Wahlenbergia pygmaea</i> subsp <i>tararua</i> JA Petterson	NC
	<i>Aciphylla traversii</i> (F Muell) Hook F	NE
	<i>Ackama nubicola</i> de Lange	NE
	<i>Amphibromus fluitans</i> Kirk	NE
	<i>Asplenium pauperequitum</i> Brownsey et P Jackson	NE
	<i>Astelia chathamica</i> (Skotts) LB Moore	NE
	<i>Australopyrum calcis</i> Connor et Molloy subsp <i>calcis</i>	NE
	<i>Boehmeria australis</i> var <i>dealbata</i> (Cheeseman) Sykes	NE
	<i>Brachyglottis huntii</i> (F Muell) B Nord	NE
	<i>Brachyscome</i> (a) (WELT 10278; Ward)	NE
	<i>Cardamine</i> (b) (CHR 312947; "tarn")	NE
	<i>Cardamine</i> (d) (CHR 511706; Pisa Range)	NE
	<i>Carex inopinata</i> Cook	NE
	<i>Carmichaelia curta</i> Petrie	NE
	<i>Carmichaelia juncea</i> Hook F	NE
	<i>Carmichaelia kirkii</i> Hook F	NE
	<i>Carmichaelia williamsii</i> Kirk	NE
	<i>Clianthus maximus</i> Colenso	NE
	<i>Coprosma waima</i> AP Druce	NE
	<i>Craspedia</i> (e) (CHR 514391; "tarn")	NE
	<i>Crassula peduncularis</i> (Smith) F Meigen	NE
	<i>Embergeria grandifolia</i> (Kirk) Boulos	NE
	<i>Epacris sinclairii</i> Hook F	NE
	<i>Gingidia aff montana</i> (a) (CHR 510570; Mt Burnett)	NE
	<i>Hebe aff albicans</i> (AK 252966; Mt Burnett)	NE
	<i>Hebe armstrongii</i> (JB Armstr) Cockayne et Allan	NE
	<i>Hebe salicornioides</i> (Hook F) Cockayne et Allan	NE
	<i>Hebe speciosa</i> (A Cunn) Cockayne et Allan	NE
	<i>Helichrysum dimorphum</i> Cockayne	NE
	<i>Heliohebe raoulii</i> subsp <i>maccaskillii</i> (Allan) Garn Jones	NE
	<i>Hibiscus aff trionum</i> (AK 218967; North Island)	NE
	<i>Juncus holoschoenus</i> R Br var <i>holoschoenus</i>	NE
	<i>Lepidium aff oleraceum</i> (b) (AK 208579; Antipodes)	NE
	<i>Lepidium aff oleraceum</i> (c) (CANU 5995; Snares)	NE
	<i>Lepidium kirkii</i> Petrie	NE
	<i>Lepidium oleraceum</i> Sparrman sens str	NE
	<i>Lepidium sisymbrioides</i> subsp <i>kawarau</i> (Petrie) Thell	NE
	<i>Leptinella nana</i> (DG Lloyd) DG Lloyd et C Webb	NE
	<i>Melicytus</i> (a) (CHR 355077; Matiri Range)	NE
	<i>Myosotidium hortensia</i> (Decne) Baill	NE
	<i>Myosotis aff pygmaea</i> (CHR 244566; Volcanic Plateau)	NE
	<i>Myosotis colensoi</i> (Kirk) Macbride	NE
	<i>Myosotis petiolata</i> var <i>pansa</i> LB Moore	NE
	<i>Myosotis pygmaea</i> var <i>glauca</i> G Simpson et JS Thomson	NE
	<i>Myosurus minimus</i> subsp <i>novae-zelandiae</i> (WRB Oliv) Garn Jones	NE
	<i>Myrsine argentea</i> Heenan et de Lange	NE
	<i>Olearia crebra</i> EK Cameron et Heenan	NE
	<i>Olearia pachyphylla</i> Cheeseman	NE
	<i>Olearia polita</i> HD Wilson et Garn Jones	NE

Common name	Taxonomic name	Threat category
	<i>Ophioglossum petiolatum</i> Hook	NE
	<i>Oreomyrrhis colensoi</i> var <i>delicatula</i> Allan	NE
	<i>Phylloglossum drummondii</i> Kunze	NE
	<i>Picris burbridgei</i> S Holzapfel	NE
	<i>Pimelea</i> aff <i>aridula</i> (b) (AK 230900; Cook Strait)	NE
	<i>Pittosporum obcordatum</i> Raoul	NE
	<i>Pittosporum patulum</i> Hook F	NE
	<i>Pittosporum serpentinum</i> (de Lange) de Lange	NE
	<i>Pomaderris phyllicifolia</i> Lodd	NE
	<i>Ranunculus</i> aff <i>stylosus</i> (CHR 515131; Manuhune)	NE
	<i>Rhopalostylis</i> aff <i>sapida</i> (AK 227148; Chatham Islands)	NE
	<i>Rorippa divaricata</i> (Hook F) Garn Jones et Jonsell	NE
	<i>Senecio kermadecensis</i> Belcher	NE
	<i>Senecio scaberulus</i> (Hook F) DG Drury	NE
	<i>Simplicia laxa</i> Kirk	NE
	<i>Todea barbara</i> (L) Moore	NE
	<i>Triglochin palustris</i> L	NE
	<i>Uncinia strictissima</i> Petrie	NE
	<i>Bulbinella modesta</i> LB Moore	NE
	<i>Aciphylla dieffenbachii</i> Kirk	NV
	<i>Australopyrum calcis</i> subsp <i>optatum</i> Connor et Molloy	NV
	<i>Carmichaelia carmichaeliae</i> (Hook F) Heenan	NV
	<i>Dracophyllum longifolium</i> var <i>septentrionale</i> WRB Oliv	NV
	<i>Dracophyllum urvilleanum</i> A Rich	NV
	<i>Hebe barkeri</i> (Cockayne) Cockayne	NV
	<i>Hebe bishopiana</i> (Petrie) Hatch	NV
	<i>Hebe cupressoides</i> (Hook F) Cockayne et Allan	NV
	<i>Hebe perbella</i> de Lange	NV
	<i>Hebe scopulorum</i> Bayly, de Lange et Garn Jones	NV
	<i>Hibiscus diversifolius</i> Jacq	NV
	<i>Kunzea</i> aff <i>ericoides</i> (a) (AK 255350; Thornton)	NV
	<i>Lepidium flexicaule</i> Kirk	NV
	<i>Leptinella featherstonii</i> F Muell	NV
	<i>Leptinella rotundata</i> (Cheeseman) DG Lloyd et C Webb	NV
	<i>Lycopodiella serpentina</i> (Kunze) B Øllg	NV
	<i>Muehlenbeckia astonii</i> Petrie	NV
	<i>Myosotis pygmaea</i> var <i>minutiflora</i> G.Simpson et JS Thomson	NV
	<i>Olearia hectorii</i> Hook F	NV
	<i>Pittosporum dallii</i> Cheeseman	NV
	<i>Prasophyllum</i> aff <i>patens</i> (AK 236408; New Zealand)	NV
	<i>Ranunculus ternatifolius</i> Kirk	NV
	<i>Scutellaria novae-zelandiae</i> Hook F	NV

Source: Extract from the New Zealand Threat Classification Lists for 2005. Department of Conservation, published January 2007.

**Key:** NE = nationally endangered, NC = nationally critical, NV = nationally vulnerable.

**Table 7: Chronically threatened species 2005**

Common name	Taxonomic name	Threat category
<b>Bird</b>		
North Island brown kiwi	<i>Apteryx mantelli</i>	SD
Chatham Island mollymawk	<i>Thalassarche eremita</i>	SD
Western weka	<i>Gallirallus australis australis</i>	SD
Black-billed gull	<i>Larus bulleri</i>	SD
Great spotted kiwi	<i>Apteryx "haastii"</i>	GD
Southern tokoeka	<i>Apteryx australis</i>	GD
Yellow-crowned kakariki	<i>Cyanoramphus auriceps</i>	GD
Long-tailed cuckoo	<i>Eudynamis taitensis</i>	GD
New Zealand pigeon, kereru, kukupa	<i>Hemiphaga novaeseelandiae</i>	GD
Antarctic prion	<i>Pachyptila desolata</i>	GD
Light-mantled sooty albatross	<i>Phoebastria palpebrata</i>	GD
Grey petrel	<i>Procellaria cinerea</i>	GD
Flesh-footed shearwater	<i>Puffinus carneipes</i>	GD
Sooty shearwater	<i>Puffinus griseus</i>	GD
South Island rifleman	<i>Acanthisitta chloris chloris</i>	GD
North Island rifleman	<i>Acanthisitta chloris granti</i>	GD
Banded dotterel	<i>Charadrius bicinctus bicinctus</i>	GD
Northern little blue penguin	<i>Eudyptula minor iredalei</i>	GD
Southern little blue penguin	<i>Eudyptula minor minor</i>	GD
Red-billed gull	<i>Larus novaehollandiae scopulinus</i>	GD
New Zealand sooty tern	<i>Sterna fuscata kermadeci</i>	GD
Southern white-fronted tern	<i>Sterna striata aucklandornata</i>	GD
White-fronted tern	<i>Sterna striata striata</i>	GD
Eastern falcon	<i>Falco novaeseelandiae "eastern"</i>	GD
Cook's petrel, titi	<i>Pterodroma cookii</i>	GD
<b>Freshwater fish</b>		
Dwarf inanga	<i>Galaxias gracilis</i>	SD
Longfin eel	<i>Anguilla dieffenbachii</i>	GD
Possible new non-diadromous galaxias	<i>Galaxias "Southern sp."</i>	GD
Roundhead galaxias	<i>Galaxias anomalus</i>	GD
Giant kokopu	<i>Galaxias argenteus</i>	GD
Flathead galaxias	<i>Galaxias depressiceps</i>	GD
Dwarf galaxias	<i>Galaxias divergens</i>	GD
Gollum galaxias	<i>Galaxias gollumoides</i>	GD
Bignose galaxias	<i>Galaxias macronasus</i>	GD
Upland longjaw galaxias	<i>Galaxias prognathus</i>	GD
Dusky galaxias	<i>Galaxias pullus</i>	GD
Possible new non-diadromous galaxias	<i>Galaxias sp D</i>	GD
Brown mudfish	<i>Neochanna apoda</i>	GD
Black mudfish	<i>Neochanna diversus</i>	GD
<b>Freshwater invertebrate</b>		
Freshwater mussel	<i>Hyridella menziesii</i> (Gray, 1843)	GD
Koura	<i>Paranephrops planifrons</i> White	GD
Koura	<i>Paranephrops zealandicus</i> White	GD

Common name	Taxonomic name	Threat category
<b>Fungus</b>		
	<i>Melampsora novaezelandiae</i>	SD
	<i>Diaporthe</i> sp 1	GD
	<i>Diaporthe</i> sp 2	GD
	<i>Glonium</i> sp	GD
	<i>Leucostoma</i> sp 1	GD
	<i>Leucostoma</i> sp 2	GD
	<i>Pestalotiopsis</i> sp	GD
	<i>Phomopsis</i> sp	GD
	<i>Propolis desmoschoeni</i>	GD
	<i>Seimatosporium</i> sp	GD
	<i>Truncatella</i> sp	GD
<b>Reptile</b>		
Small-scaled skink	<i>Oligosoma microlepis</i>	SD
Ornate skink	<i>Cyclodina ornata</i>	GD
Canterbury gecko	<i>Hoplodactylus</i> "Canterbury"	GD
Matapia gecko	<i>Hoplodactylus</i> "Matapia Island"	GD
Large Otago gecko	<i>Hoplodactylus</i> "Otago large"	GD
Southern forest gecko	<i>Hoplodactylus</i> "Southern forest gecko"	GD
Goldstripe gecko	<i>Hoplodactylus chrysosireticus</i>	GD
Pacific gecko	<i>Hoplodactylus pacificus</i>	GD
Harlequin gecko	<i>Hoplodactylus rakiurae</i>	GD
Auckland green gecko	<i>Naultinus e elegans</i>	GD
Wellington green gecko	<i>Naultinus e punctatus</i>	GD
Jewelled gecko	<i>Naultinus gemmeus</i>	GD
Northland green gecko	<i>Naultinus grayii</i>	GD
Rough gecko	<i>Naultinus rudis</i>	GD
Nelson green gecko	<i>Naultinus stellatus</i>	GD
Green skink "West Otago"	<i>Oligosoma</i> aff <i>chloronoton</i> "West Otago"	GD
Spotted skink "Mackenzie Basin"	<i>Oligosoma</i> aff <i>lineoocellatum</i> "Mackenzie Basin"	GD
Spotted skink "South Marlborough"	<i>Oligosoma</i> aff <i>lineoocellatum</i> "South Marlborough"	GD
Green skink	<i>Oligosoma chloronoton</i>	GD
Cryptic skink	<i>Oligosoma inconspicuum</i>	GD
Speckled skink	<i>Oligosoma infrapunctatum</i>	GD
Spotted skink	<i>Oligosoma lineoocellatum</i>	GD
Scree skink	<i>Oligosoma waimatense</i>	GD
<b>Terrestrial invertebrate</b>		
Bird louse	<i>Apterygon mirum</i> Clay, 1961	SD
Forest ringlet	<i>Dodonidia helmsii</i>	SD
Spider – Theridiidae – black katipo spider	<i>Latrodectus atritus</i> Urquhart, 1890	SD
Spider – Theridiidae – red katipo	<i>Latrodectus katipo</i> Powell, 1871	SD
Ground beetle	<i>Mecodema costellum obesum</i> Townsend, 1965	SD
Moth	<i>Notoreas</i> "Taranaki Coast"	SD
Moth	<i>Notoreas</i> "Wellington"	SD
Large land snail	<i>Powelliphanta</i> "Urewera"	SD
Large land snail	<i>Powelliphanta annectens</i> (Powell, 1936)	SD
Large land snail	<i>Powelliphanta marchanti</i> (Powell, 1932)	SD
Large land snail	<i>Powelliphanta spedeni spedeni</i> (Powell, 1932)	SD
Large land snail	<i>Powelliphanta superba superba</i> (Powell, 1930)	SD
Alpine grasshopper	<i>Sigauss</i> sp A	SD
Snail	<i>Succinea archeyi</i> Powell, 1933	SD

Common name	Taxonomic name	Threat category
Moth	"Pseudocoremia" <i>cineracia</i> (Howes, 1942)	GD
Snail	<i>Amborhytida</i> aff <i>Forsythi</i> (NMNZ M 173834)	GD
Snail	<i>Amborhytida dunni</i> ae (Gray, 1840)	GD
Snail	<i>Amborhytida duplicata</i> (Suter, 1904)	GD
Snail	<i>Amborhytida forsythi</i> (Powell, 1952)	GD
Bird louse	<i>Apterygon dumosum</i> Tandan, 1972	GD
Bird louse	<i>Apterygon hintoni</i> Clay, 1966	GD
Slug	<i>Athoracophorus</i> sp 4 (NMNZ M 151430) "northern NZ"	GD
Kaikoura giant weta	<i>Deinacrida parva</i> Buller, 1895	GD
Moth	<i>Gingidiobora nebulosa</i> (Philpott, 1917)	GD
Moth	<i>Gingidiobora subobscurata</i> (Walker, 1862) species complex	GD
Sphagnum porina	<i>Heloxycanus patricki</i> Dugdale, 1994	GD
Karikari tree weta	<i>Hemideina thoracica</i> 2n=23,24	GD
Moth	<i>Hydriomena canescens</i> Philpott, 1918	GD
Moth	<i>Hydriomena clarkei</i> (Howes, 1917)	GD
Moth	<i>Loxostege</i> sp "salt pan"	GD
Ground beetle	<i>Mecodema howitti</i> Castelnau, 1867	GD
Moth	<i>Meterana exquisita</i> (Philpott, 1903)	GD
Moth	<i>Meterana grandiosa</i> (Philpott, 1903)	GD
Moth	<i>Paranotoreas fulva</i> (Hudson, 1905)	GD
Kauri snail, pupurangi	<i>Paryphanta busbyi busbyi</i> (Gray, 1840)	GD
Kauri snail, pupurangi	<i>Paryphanta busbyi wattii</i> Powell, 1946	GD
Large land snail	<i>Powelliphanta</i> "Haast"	GD
Large land snail	<i>Powelliphanta gilliesi fallax</i> (Powell, 1930)	GD
Large land snail	<i>Powelliphanta gilliesi subfusca</i> (Powell, 1930)	GD
Large land snail	<i>Powelliphanta hochstetteri anatokiensis</i> (Powell, 1938)	GD
Large land snail	<i>Powelliphanta hochstetteri bicolor</i> (Powell, 1930)	GD
Large land snail	<i>Powelliphanta hochstetteri consobrina</i> (Powell, 1936)	GD
Large land snail	<i>Powelliphanta hochstetteri hochstetteri</i> (Pfeiffer, 1862) brown based	GD
Large land snail	<i>Powelliphanta hochstetteri hochstetteri</i> (Pfeiffer, 1862) yellow based	GD
Large land snail	<i>Powelliphanta hochstetteri obscura</i> (Beutler, 1901)	GD
Bird louse	<i>Rallicola (Aptericola) gadowi</i> Harrison, 1915	GD
Bird louse	<i>Rallicola (Aptericola) gracilentus</i> Clay, 1953	GD
Snail	<i>Rhytida stephenensis</i> Powell, 1930	GD
Alpine grasshopper	<i>Sigaus minutus</i> Bigelow, 1967	GD
Moth	<i>Stathmopoda</i> sp "Olearia"	GD
Snail	<i>Wainuia</i> "Mount Oxford"	GD
Snail	<i>Wainuia edwardi</i> (Suter, 1899)	GD
Snail	<i>Wainuia urnula nasuta</i> Powell, 1946	GD
<b>Vascular plants</b>		
	<i>Brachyglottis kirkii</i> (Kirk) C.Webb var <i>kirkii</i>	SD
	<i>Carex litorosa</i> Bailey	SD
	<i>Dactylanthus taylorii</i> Hook F	SD
	<i>Daucus glochidiatus</i> (Labill) Fisch, CA Mey and Avé-Lall	SD
	<i>Drymoanthus flavus</i> St George et Molloy	SD
	<i>Euphorbia glauca</i> G Forst	SD
	<i>Heliohebe acuta</i> Garn Jones	SD
	<i>Heliohebe lavaudiana</i> (Raoul) Garn Jones	SD
	<i>Hydatella inconspicua</i> (Cheeseman) Cheeseman	SD

Common name	Taxonomic name	Threat category
	<i>Hypericum</i> aff <i>japonicum</i> (a) (CHR 165889; Volcanic Plateau)	SD
	<i>Isolepis basilaris</i> Hook F	SD
	<i>Kunzea ericoides</i> var <i>linearis</i> (Kirk) W Harris	SD
	<i>Leucogenes tarahaoa</i> Molloy	SD
	<i>Luzula celata</i> Edgar	SD
	<i>Marattia salicina</i> Smith	SD
	<i>Mazus novaezeelandiae</i> subsp <i>impolitus</i> Heenan f <i>impolitus</i>	SD
	<i>Mazus novaezeelandiae</i> WR Barker subsp <i>novaezeelandiae</i>	SD
	<i>Myosotis pygmaea</i> Colenso var <i>pygmaea</i>	SD
	<i>Olearia fimbriata</i> Heads	SD
	<i>Pachycladon stellata</i> (Allan) Heenan et A Mitch	SD
	<i>Pimelea</i> aff <i>arenaria</i> (AK 216133; southern New Zealand)	SD
	<i>Pimelea tomentosa</i> (JR Forst et G Forst) Druce sens str	SD
	<i>Pittosporum</i> aff <i>crassifolium</i> (AK 253259; Raoul Island)	SD
	<i>Pittosporum kirkii</i> Hook F	SD
	<i>Plagianthus chathamicus</i> Cockayne	SD
	<i>Plumatochilos tasmanicum</i> (DL Jones) DL Szlachetko	SD
	<i>Pterostylis paludosa</i> DL Jones, Molloy et MA Clem	SD
	<i>Sicyos</i> aff <i>australis</i> (AK 252822; New Zealand)	SD
	<i>Tetrachondra hamiltonii</i> D Oliver	SD
	<i>Acaena buchananii</i> Hook F	GD
	<i>Alepis flavida</i> (Hook F) Tiegh	GD
	<i>Anogramma leptophylla</i> (L) Link	GD
	<i>Austrofestuca littoralis</i> (Labill) EB Alexev	GD
	<i>Brachyglottis perdicioides</i> (Hook F) B Nord	GD
	<i>Brachyglottis sciadophila</i> (Raoul) B Nord	GD
	<i>Carex astonii</i> Hamlin	GD
	<i>Carex cirrhosa</i> Bergg	GD
	<i>Carmichaelia crassicaule</i> Hook F	GD
	<i>Carmichaelia stevensonii</i> (Cheeseman) Heenan	GD
	<i>Carmichaelia vexillata</i> Heenan	GD
	<i>Celmisia major</i> Cheeseman var <i>major</i>	GD
	<i>Christella</i> aff <i>dentata</i> (b) (AK 126902; "thermal")	GD
	<i>Clematis marmoraria</i> Sneddon	GD
	<i>Colensoa physaloides</i> (A Cunn) Hook F	GD
	<i>Coprosma obconica</i> Kirk	GD
	<i>Coprosma pedicellata</i> Molloy, de Lange et BD Clarkson	GD
	<i>Coprosma wallii</i> Petrie	GD
	<i>Craspedia</i> (n) (CHR 369978; Henderson)	GD
	<i>Crassula kirkii</i> (Allan) AP Druce et DR Given	GD
	<i>Crassula manaia</i> AP Druce et Sykes	GD
	<i>Cyclosorus interruptus</i> (Willd) H Itô	GD
	<i>Deschampsia cespitosa</i> (L) Beauv	GD
	<i>Desmoschoenus spiralis</i> (A Rich) Hook F	GD
	<i>Doodia squarrosa</i> Colenso	GD
	<i>Drosera pygmaea</i> DC	GD
	<i>Eleocharis neozelandica</i> Kirk	GD
	<i>Epilobium chionanthum</i> Hauss	GD
	<i>Eryngium</i> aff <i>vesiculosum</i> (AK 232583; New Zealand)	GD
	<i>Gratiola nana</i> Benth	GD



Common name	Taxonomic name	Threat category
	<i>Gunnera arenaria</i> Cheeseman	GD
	<i>Hebe pimeleoides</i> subsp <i>faucicola</i> Kellow et Bayly	GD
	<i>Hoheria</i> aff <i>sexstylosa</i> (AK 234306; Tararua Ranges)	GD
	<i>Iphigenia novae-zelandiae</i> (Hook F) Baker	GD
	<i>Isolepis fluitans</i> (L) R Br	GD
	<i>Jovellana sinclairii</i> (Hook F) Kranzl	GD
	<i>Lepidium sisymbrioides</i> Hook F subsp <i>sisymbrioides</i>	GD
	<i>Lepidium tenuicaule</i> Kirk	GD
	<i>Leptinella dioica</i> subsp <i>monoica</i> (AK 200874)	GD
	<i>Leptinella serrulata</i> (DG Lloyd) DG Lloyd et C Webb	GD
	<i>Libertia peregrinans</i> Cockayne et Allan	GD
	<i>Mazus arenarius</i> Heenan, PN Johnson et C Webb	GD
	<i>Melicytus</i> aff <i>alpinus</i> (f) (CHR 541566; Waipapa)	GD
	<i>Melicytus flexuosus</i> Molloy et AP Druce	GD
	<i>Mida salicifolia</i> A Cunn	GD
	<i>Montigena novae-zelandiae</i> (Hook F) Heenan	GD
	<i>Myosotis brockiei</i> LB Moore et MJA Simpson	GD
	<i>Myriophyllum robustum</i> Hook F	GD
	<i>Olearia cheesemanii</i> Cockayne et Allan	GD
	<i>Ourisia modesta</i> Diels	GD
	<i>Pachycladon cheesemanii</i> Heenan et A Mitch	GD
	<i>Pachycladon enysii</i> (Cheeseman) Heenan et A Mitch	GD
	<i>Pachycladon fastigiata</i> (Hook F) Heenan et A Mitch	GD
	<i>Paspalum orbiculare</i> G Forst	GD
	<i>Pellaea falcata</i> (R Br) Fée	GD
	<i>Peraxilla colensoi</i> (Hook F) Tiegh	GD
	<i>Peraxilla tetrapetala</i> Tiegh	GD
	<i>Pimelea arenaria</i> A.Cunn sens str	GD
	<i>Pimelea lyallii</i> Hook F	GD
	<i>Potamogeton pectinatus</i> L	GD
	<i>Pseudopanax laetus</i> (Kirk) Philipson	GD
	<i>Ranunculus</i> (b) (CHR 324466; Burgoo Stream)	GD
	<i>Ranunculus limosella</i> Kirk	GD
	<i>Ranunculus macropus</i> Hook F	GD
	<i>Ranunculus recens</i> Kirk var <i>recens</i>	GD
	<i>Raoulia</i> aff <i>hookeri</i> (AK 239529; "coast")	GD
	<i>Raoulia monroi</i> Hook F	GD
	<i>Raukaua edgerleyi</i> (Hook F) Seem	GD
	<i>Schoenus carsei</i> Cheeseman	GD
	<i>Selliera rotundifolia</i> Heenan	GD
	<i>Sonchus kirkii</i> Hamlin	GD
	<i>Sophora fulvida</i> (Allan) Heenan et de Lange	GD
	<i>Teucrium parvifolium</i> Hook F	GD
	<i>Thelypteris confluens</i> (Thunb) C Morton	GD
	<i>Trisetum antarcticum</i> (G Forst) Trin	GD
	<i>Tupeia antarctica</i> (G Forst) Cham et Schlecht	GD
	<i>Urtica linearifolia</i> (Hook F) Cockayne	GD
	<i>Utricularia australis</i> R Br	GD
	<i>Utricularia delicatula</i> Cheeseman	GD

Source: Extract from the New Zealand Threat Classification Lists for 2005. Department of Conservation, published January 2007.

Key: SD = serious decline and GD = gradual decline.

### 6.2.3 Threatened plant lists for local authorities – New Zealand Plant Conservation Network

The New Zealand Plant Conservation Network has compiled threatened plant lists for local authorities in the North and South islands. These lists are available for download off its website – [www.nzpcn.org.nz](http://www.nzpcn.org.nz).

### 6.2.4 Key references

#### New Zealand Threat Classification references

Department of Conservation. 2007. *New Zealand Threat Classification Lists for 2005*. Wellington: Department of Conservation.

Molloy J, Bell B, Clout M, de Lange P, Gibbs G, Given D, Norton D, Smith N, Stephens T. 2002. *Classifying Species According to Threat of Extinction: A system for New Zealand*. Threatened Species Occasional Publication 22. Wellington: Department of Conservation.

Department of Conservation website ([www.doc.govt.nz](http://www.doc.govt.nz)) for access to:

- Current New Zealand threatened species classification lists – <http://www.doc.govt.nz/templates/MultiPageDocumentTOC.aspx?id=42704>
- Threatened species management recovery plans – <http://www.doc.govt.nz/templates/page.aspx?id=39162>
- General information on threatened species – <http://www.doc.govt.nz/templates/defaultlanding.aspx?id=32841>

#### New Zealand Plant Conservation Network

[www.nzpcn.org.nz](http://www.nzpcn.org.nz)

# 7 Legislative Provisions for Protecting Indigenous Biodiversity

## 7.1 Legislation

### 7.1.1 Resource Management Act 1991

The Resource Management Act 1991 is the principal legislation governing the use of New Zealand's land, air, water, ecosystems and built environment. Under the Act, local government has a major part to play in the sustainable management of the environment.

The Resource Management Act has a key role in managing our biological diversity. Almost all forms of resource use affect indigenous biodiversity, and biodiversity is recognised in the Act in many ways.

- Section 5 is relevant because all plants and animals come within the definition of natural resources. Section 5(1)(b) refers to safeguarding ecosystems.
- Section 6(c) is the section most identified with the maintenance of biodiversity because it refers to the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna. However, this section represents just one dimension of managing indigenous biodiversity.
- Section 7(d) refers to the intrinsic values of ecosystems. The definition of 'intrinsic values' includes values derived from biological and genetic diversity.
- Section 30(1)(c)(iia) provides that it is a function of regional councils to control the use of land for the purpose of maintaining and enhancing ecosystems in water bodies and coastal waters.
- Section 30(1)(ga) provides that it is a function of regional councils to establish, implement and review objectives, policies and methods for maintaining indigenous biodiversity.
- Section 31(b)(iii) provides that it is a function of territorial councils to control the effects of the use of land on the maintenance of indigenous biological diversity.

Amendments to the Act in 2003 clarified that:

- regional councils and territorial authorities both have responsibilities for managing indigenous biodiversity
- local authorities must consider the consequences of all effects on indigenous biodiversity, not simply the significance of the species or habitat.

### **7.1.2 Biosecurity Act 1993**

This Act provides for the exclusion, eradication and effective management of pests and unwanted organisms. Under this Act the Minister is able to notify a national pest management strategy and individual local authorities are able to prepare regional pest management strategies. Section 76(4) of the Biosecurity Act requires that these strategies not be inconsistent with any regional policy statement or regional plan prepared under the Resource Management Act.

### **7.1.3 Conservation Act 1987**

The Conservation Act 1987 promotes the conservation of New Zealand's natural and historical resources. The Act provides the mandate for the activities of the Department of Conservation. Functions include management of the conservation estate, conservancy advocacy and education, and fostering the use of resources for recreation and tourism. The main policy documents include a conservation management strategy prepared by each of 13 regional conservancies, and management plans for sites of particular importance (such as national parks). Conservation management strategies provide for the integrated management of all areas administered by the Department of Conservation.

### **7.1.4 Forests Act 1949, Forests Amendment Act 1993**

The Forests Act 1949 was amended in 1993 to bring an end to unsustainable harvesting and clear-felling of indigenous forest. Under the Forests Amendment Act 1993, indigenous timber can only be produced from forests that are managed in a way that maintains continuous forest cover and ecological balance.

### **7.1.5 National Parks Act 1980**

The purpose of the National Parks Act 1980 is to preserve in perpetuity, for their intrinsic worth and for the benefit, use and enjoyment of the public, national parks – areas of New Zealand that contain scenery of such distinctive quality, and ecological systems, or natural features so beautiful, unique, or scientifically important, that their preservation is in the national interest.

The Department of Conservation administers this Act. Under section 4 of the Resource Management Act, the Crown is not bound by section 9(1) of the Resource Management Act for any work or activity of the Crown within the boundaries of any area of land held or managed under the Conservation Act or other acts specified in the First Schedule to that Act. The First Schedule of the Conservation Act includes the National Parks Act.

## 7.1.6 Reserves Act 1977

The Department of Conservation administers this Act. Section 3(1)(b) of the Reserves Act identifies the need for the establishment of an ecologically representative, protected natural areas system in New Zealand. An objective of this legislation is:

*Ensuring as far as possible, the survival of all indigenous species of flora and fauna, both rare and commonplace, in their natural communities and habitats, and the preservation of representative samples of all classes of natural ecosystems and landscapes which in their aggregate originally gave New Zealand its own recognisable character. (Section 3(1)(b), Reserves Act 1977)*

## 7.1.7 Wildlife Act 1953

This Act is administered by the Department of Conservation and provides for the protection of certain species of wildlife, including the establishment of wildlife reserves.

# 7.2 Biodiversity Convention and Strategy

## 7.2.1 Convention on Biological Diversity

In 1992, the nations of the world met in Rio de Janeiro, Brazil, for the United Nations Conference on Environment and Development. The New Zealand government joined others in signing the Convention on Biological Diversity (ratified April 2003, see <http://www.biodiv.org>) designed to address declining indigenous biodiversity worldwide, and to promote the sustainable use of biological diversity. The convention gained widespread acceptance. More than 150 governments signed the document at the Rio conference, and since then, more than 175 countries have ratified the agreement.

The convention has three main goals:

- the conservation of biodiversity
- sustainable use of the components of biodiversity
- sharing the benefits arising from the commercial (and other) utilisation of genetic resources in a fair and equitable way.

Under the convention, governments are required to develop national biodiversity strategies and action plans, and to integrate these into broader national plans for the environment and development. The convention is largely descriptive: specific policy actions for achieving its goals rest with the countries themselves.

New Zealand's 1993 ratification of the convention confirmed our ongoing obligation to the international effort to conserve and sustainably use global biodiversity.

## **7.2.2 New Zealand Biodiversity Strategy**

The New Zealand Biodiversity Strategy (Department of Conservation and Ministry for the Environment, 2000) reflects New Zealand's commitment to the Convention on Biological Diversity. The strategy sets out in broad terms the government's response to declining indigenous biodiversity. It sets out national goals and principles for managing New Zealand's biodiversity, and action plans for achieving the goals.

## 8 Glossary of Terms

**Acutely and chronically threatened indigenous species:** Species that meet the specific criteria to be listed in one of the acutely threatened or chronically threatened categories in the ‘New Zealand Threat Classification System Lists’ (refer to DOC website for up-to-date lists – [www.doc.govt.nz](http://www.doc.govt.nz)).

**Ecosystem:** An interacting system of living and non-living parts, including sunlight, air, water, minerals and nutrients. Ecosystems can be small and short-lived, for example, water-filled tree holes or logs rotting on a forest floor; or they can be large and long-lived, such as forests and lakes.

**Biodiversity (biological diversity):** This describes the variety of all biological life – plants, animals, fungi and micro-organisms – the genes they contain, and the ecosystems on land or in water where they live. It is the diversity of life on Earth and includes diversity within species, between species, and of ecosystems.

**Habitat:** The place or type of area in which a living thing naturally occurs.

**Indigenous (native) vegetation:** A plant community containing naturally occurring native species. It includes vegetation that has regenerated with human help following disturbance, but does not include plantations or vegetation established for commercial and/or aesthetic purposes.

**Land cover database:** ‘New Zealand Land Cover Database (LCDB2)’ Terralink, 2004.

**Land environment:** Describes an area whose boundaries encompass similar environmental characteristics caused by non-living variables, such as climate, landform and soil.

**Land Environments of New Zealand:** A classification of environments mapped across New Zealand’s landscape, derived from a comprehensive set of climate, landform and soil variables known to influence the distribution of species. See ‘Land Environments of New Zealand’, Leathwick et al, 2003.

**Originally rare terrestrial ecosystem:** An ecosystem type that was present, and rare, when Māori arrived, and still exists today (Williams et al, 2006).

**Taxon (Taxa):** A named biological classification unit assigned to individuals or sets of species, for example species, sub-species, genus or order.

## 9 References

- Cromarty P. 1996. *A Directory of Wetlands in New Zealand*. Scott DA (ed). Wellington: Department of Conservation.
- De Lange PJ, Norton DA, Heenan PB, Courtney S, Molloy BPJ, Ogle CC, Rance BD, Johnson PN, Hitchmough RA. 2004. Threatened and uncommon plants of New Zealand. *New Zealand Journal of Botany* 42: 45–76.
- Department of Conservation. 2007. *New Zealand Threat Classification Lists for 2005*. Wellington: Department of Conservation.
- Department of Conservation and Ministry for the Environment. 2000. *The New Zealand Biodiversity Strategy: Our chance to turn the tide*. Wellington: Ministry for the Environment.
- Department of Conservation and Ministry for the Environment. 2004. *Third Annual Report to the New Zealand Biodiversity Strategy*. Wellington: Department of Conservation.
- Green W, Clarkson B. 2005. *Turning the Tide? A review of the first five years of the New Zealand Biodiversity Strategy, The Synthesis Report*. Wellington: Department of Conservation.
- Green W, Clarkson B. 2005. *Review of the New Zealand Biodiversity Strategy Themes*. Wellington: Department of Conservation.
- Hesp P. 2000. *Coastal Sand Dunes: Form and function*. Rotorua: Coastal Dune Vegetation Network, Forest Research.
- Hilton, et al. 2000. Inventory of New Zealand's active dunelands. *Science for Conservation* 157. Wellington: Department of Conservation.
- Johnson P. 1992. *The Sand Dune and Beach Vegetation Inventory of New Zealand. II. South Island and Stewart Island*. DSIR Land Resources Scientific Report Number 16. Christchurch: DSIR Land Resources.
- Johnson PJ, Gerbeaux P. 2004. *Wetland Types in New Zealand*. Wellington: Department of Conservation.
- Leathwick J, Wilson G, Rutledge D, Wardle P, Morgan F, Johnston K, McLeod M, Kirkpatrick R. 2003. *Land Environments of New Zealand*. Auckland: David Bateman Ltd.
- Leathwick J, Morgan F, Wilson G, Rutledge D, McLeod M, Johnston K. 2002. *Land Environments of New Zealand: Technical Guide*. Wellington: Ministry for the Environment.
- Leathwick J, McGlone M, Walker S. 2003. *New Zealand's Potential Vegetation Pattern*. Unpublished report.
- Ministry for the Environment. 1997. *The State of New Zealand's Environment*. Wellington: Ministry for the Environment.
- Ministry for the Environment, Department of Conservation and Local Government New Zealand. 2004. *A Snapshot of Council Effort to Address Indigenous Biodiversity on Private Land: A report back to councils*. Wellington: Ministry for the Environment, Department of Conservation and Local Government New Zealand.
- Molloy J, Bell B, Clout M, de Lange P, Gibbs G, Given D, Norton D, Smith N, Stephens T. 2002. *Classifying Species According to Threat of Extinction: A system for New Zealand*. Threatened Species Occasional Publication 22. Wellington: Department of Conservation.
- New Zealand Hydrological Society and New Zealand Limnological Society. 2004. *Freshwaters of New Zealand*. 2004. Harding J, Mosley P, Pearson C, Sorrell B (eds). Wellington: New Zealand Hydrological Society; New Zealand Limnological Society.
- Partridge T. 1992. *The Sand Dune and Beach Vegetation Inventory of New Zealand. II. North Island*. DSIR Land Resources Scientific Report Number 16. Christchurch: DSIR Land Resources.



- Rabinowitz D. 1981. Seven forms of rarity. In: Syngé H (ed) *The Biological Aspects of Rare Plant Conservation*. John Wiley.
- Rosenweig ML. 1995. Patterns in space: species area curves. In: Rosenweig ML (ed) *Species Diversity in Space and Time*. Cambridge, United Kingdom: Cambridge University Press.
- Walker S, Price R, Rutledge D. 2004. *New Zealand's Remaining Indigenous Cover: Recent changes and biodiversity protection needs*. Unpublished report. **Note that this report will be published in late 2007 by the Department of Conservation.**
- Walker S, Price R, Rutledge D, Stephens TTR, Lee WG. 2006. Recent loss of indigenous cover in New Zealand. *New Zealand Journal of Ecology* 30(2):169–77.
- Williams PA, Wiser S, Clarkson B, Stanley M. *A Physical and Physiognomic Framework for Defining and Naming Originally Rare Terrestrial Ecosystems: First approximation*. Landcare Research Internal Report: LC0506/185.