

Key Native Ecosystems

Inventory of sites with indigenous biodiversity values
of regional significance

Taranaki Regional Council
Private Bag 713
Stratford

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'Working with people, caring for our environment'

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Part One: Introduction and background

Purpose

The purpose of the *Key Native Ecosystems – Inventory of Sites with Indigenous Biodiversity Values of Regional Significance* ('the Inventory') is to provide information on terrestrial (land) sites with indigenous biodiversity values of regional significance in the Taranaki Region. This Inventory will assist the Taranaki Regional Council in its decision making and in the delivery of management programmes that seek to maintain and enhance indigenous biodiversity values in these sites.

Scope and effect

The Inventory has been prepared by the Taranaki Regional Council ('the Council') in recognition of its management responsibilities for indigenous biodiversity. In particular, the Inventory gives effect, in part, to Method 1 of Section 8 of the *Proposed Regional Policy Statement for Taranaki* (2006) – namely to "...Identify and monitor regionally significant natural areas, waterways, wetlands, and other areas of significant or outstanding indigenous biodiversity value".

The Inventory identifies terrestrial sites in the Taranaki region considered to have indigenous biodiversity values of regional significance. These areas, which are referred to as **Key Native Ecosystems**, are special because:

- rare and distinctive indigenous flora and fauna species are present; or



- they are representative of an indigenous vegetation type that is now much reduced (eg, less than 10 or 20%) from its former extent in the ecological district; or
- they enhance connectivity between fragmented indigenous habitats, enhance the values or provide buffering for other sites of value, or provide seasonal or core habitat for specific indigenous species;

AND

- they are sustainable ie, they are of a size or shape and have the ability, through appropriate management, to sustain those other values referenced above.

The Inventory covers terrestrial sites with regionally significant indigenous biodiversity values on both private land and in the public conservation estate. The assessment of sites is based on values being **regionally significant** – sites that do not meet one or more of the above criteria have not been included in this Inventory (but may still be significant at a local or district level).

The Inventory is a non-statutory working document compiling information on each Key Native Ecosystem. In relation to each Key Native Ecosystem, an 'inventory sheet' has been prepared setting out information on its location, land tenure, physical and ecological features, ecological values of regional significance, threats to those values, formal protection status and other protection (if any). Changes, deletions and additions may be appropriate from time to time as new information arises.

Note

The Department of Conservation is separately empowered and resourced to manage the public conservation estate. However, the inclusion of sites with regionally significant indigenous biodiversity values that lie in the public conservation estate in the Inventory was considered appropriate for the purposes of effective integrated management and to provide a comprehensive inventory of the significant biodiversity assets of Taranaki.

Methodology

There is a considerable amount of knowledge and site-specific information on indigenous biodiversity. However, the information is not always accessible and is fragmented and maintained by a large number of custodians.

The Council has prepared this Inventory with the assistance of key interested parties – the Queen Elizabeth II National Trust (QEII), New Plymouth, South Taranaki and Stratford district councils, the Fish and Game New Zealand, Royal Forest and Bird Protection Society, the Taranaki Kiwi Trust, and the Department of Conservation. These organisations comprised a working group that provided input and advice towards the completion of the Inventory.

With the assistance of the aforementioned parties, the Council has identified candidate sites with possible indigenous biodiversity values of regional significance. The Council has then obtained and reviewed existing information on these candidate sites, including information and documentation maintained by other organisations. Much of this information is based on rapid surveys carried out in the 1980s. Based on that information, and criteria set out in this Inventory, the Council has evaluated whether indigenous biodiversity values associated with individual sites are indeed regionally significant. Of note is that the non-inclusion of a site does not necessarily mean that there are no indigenous biodiversity values of local or regional significance. In some cases it may simply be a reflection that there is insufficient information to confirm such values and the Council recognises that should new information come to hand it may be necessary to re-evaluate the significance of these sites. Information on indigenous fauna is particularly deficient.

Finally, information in this report has been peer reviewed by an independent consultant and participating members of the working party.

The next step is to develop programmes or explore opportunities to protect the values associated with Key Native Ecosystems. In many cases protection mechanisms and programmes already exist. Monitoring programmes including site visits will be implemented and information gathered through this monitoring will, as appropriate, be used to update the Inventory.

Structure

The Inventory is divided into three parts.

Part 1 presents the purpose, scope and structure of the Inventory.

Part 2 sets out a reader's guide to the inventory sheets. A general explanation and guide to the use of those sheets is set out, including information sources and criteria for determining regionally significant indigenous biodiversity values.

Part 3 contains inventory sheets for each Key Native Ecosystem. In relation to each site, a sheet has been compiled summarising information on its location, land tenure, and physical and ecological features. For each site, the ecological values of regional significance, threats to those values, formal protection status and other protection (if any) are also identified. A map for each site is also provided.

Status and availability

The Inventory represents the data and information available at this time from published and unpublished sources. A gap analysis will be undertaken and appropriate investigative programmes developed and implemented over time to, address information gaps. As more information is obtained the inventory will be updated and it is envisaged that its contents will eventually be made available to the public on the Council's Regional Explorer website.

Part Two: Reader's guide

For each site that has been identified as having indigenous biodiversity values of regional significance in the Taranaki region, an inventory sheet has been compiled with information on the site. This Part of the Inventory provides a general explanation and guide to the use of inventory sheets.

At a glance

Each inventory sheet begins with an easy-to-read 'at a glance' reference chart. The reference chart provides information on:

- **Last updated:** Date at which information on a site was last updated. The Council will, as appropriate, update information in this Inventory through its monitoring programmes and through feedback from landowners, agencies and the wider community.
- **TRC reference:** Refers to the Council's database reference number for that site (if applicable).
- **Other reference:** Refers to other organisations' (eg, Department of Conservation, district councils, QEII) reference number for that site, if applicable.
- **Land tenure:** Identifies whether the site is owned by the Crown, district council, or is in private ownership.
- **GPS:** Refers to the location of the site using Eastings and Northernings from the Global Positioning System (GPS).
- **Ecological district:** Refers to the Department of Conservation classification given to "...a local part of New Zealand where the features, geology, topography, climate and biology, plus the broad cultural patterns, interrelate to produce a characteristic landscape and range of biological communities". The five ecological districts that lie wholly or partly in the Taranaki Region are shown in Figure 1.
- **Formal protection status:** Refers to categories identifying the different types of protection that can be applied to be site (ie, A, B or C). For the purposes of this document: '**Category A**' refers to a site protected by legal covenant and other agreements, or in public ownership; '**Category B**' refers to a site protected by regional and district rules; and '**Category C**' refers to sites actively protected through pest control, weed control or site rehabilitation. Further information on the different types of site protection is presented on page 6 of this document.



Figure 1: Department of Conservation's Taranaki region's ecological districts

- **Land environments of New Zealand (LENZ):** Refers to the Ministry for the Environment environmental classification –Level IV that is mapped across New Zealand's landscape. The classification is nationally consistent, works at a range of scales and comes complete with

information about climate, soils and landforms. The main (Level II) classifications that are relevant to the Taranaki region are listed in Appendix I of this document. For more detailed information about LENZ please refer to www.landcare.co.nz/databases/lenz/downloads/LENZ_Technical_Guide.

- **Area:** Size of the site in hectares (ha).

Location

'Location' is the estimate of linear distance from the site to the nearest urban centre.

General description

'General description' presents general information describing the site, its size, the main physical and geographical features, and the history of land use at the site and surrounding area.

Ecological features

'Ecological features' presents information on:

- **Vegetation:** Describes the vegetative composition of any forest, scrub, grasslands etc found at the site. The confirmed presence of threatened indigenous flora species at the site is noted, plus the presence of other notable flora species – both indigenous and exotic. This section also includes a statement of the overall condition of the indigenous flora at the site.
- **Fauna:** Provides general information on indigenous and exotic fauna species recorded or known to be present at the site. The presence of notable or threatened indigenous fauna species present at the site is also noted.

Additional information on indigenous flora and fauna can also be found on the Department of Conservation website (<www.doc.govt.nz>), the New Zealand Plant Conservation Network website (<www.nzpcn.org.nz>), the New Zealand Birds website (<www.nzbirds.com>), the Taranaki Regional Council website (<www.trc.govt.nz>) and the Taranaki Plants website (<www.taranakiplants.net.nz>).

Ecological values¹

'Ecological values' identifies the indigenous biodiversity values associated with a site determined to be regionally significant. To be included in the Inventory, the site must be assessed as 'high' in relation to any one of the three following 'site' criterion:

- **Rarity and distinctiveness:** Refers to the presence of rare and distinctive indigenous flora and fauna species. The 'Rarity' criterion applies if a site supports a species that is listed as 'Acutely Threatened' in accordance with the New Zealand Threat Classification System (refer Appendix II and Figure 2 below). The 'Distinctiveness' criterion applies if a site supports indigenous flora and fauna species that is:
 - at its national distributional limit;
 - only occurs in or is relatively confined to Taranaki; or
 - although common elsewhere, is particularly uncommon in Taranaki.

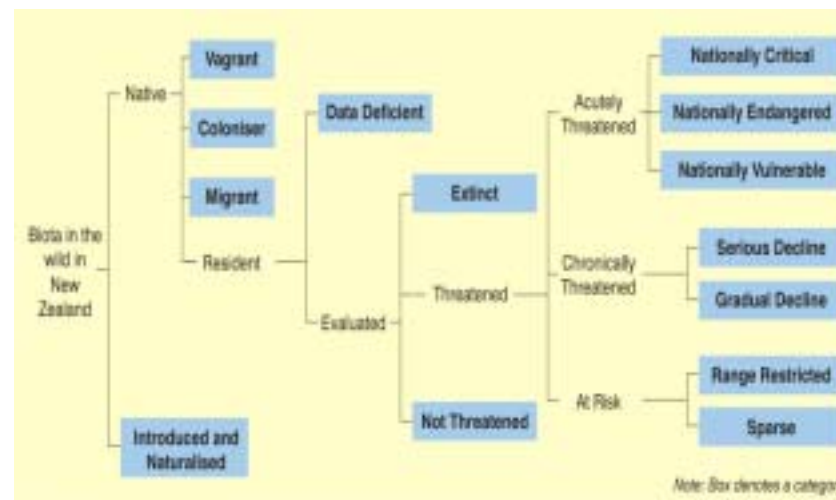


Figure 2: The New Zealand threat classification system²

¹ Criteria based upon Norton, D. A and Roper-Lindsay, J: 'Assessing Significance for Biodiversity Conservation on Private Land in New Zealand'. New Zealand Journal of Ecology, Volume 28, No.2, 2004.

² Molloy et al: 'New Zealand Threat Classification System'. Department of Conservation, Wellington, 2002.

- **Representativeness:** Refers to an area representative of a broad vegetation or habitat class. The concept of representativeness is based on LENZ IV environments and the notion that certain vegetative and habitat classes are under represented in the New Zealand landscape (and their protection therefore assumes greater significance). To be ranked as 'high' on the 'Representativeness' criterion, a site must:
 - support a LENZ IV environment that is 'Acutely Threatened' ie, indigenous vegetation covers less than 10% of its former extent; or
 - support a high quality example of a LENZ IV environment that is 'Chronically Threatened' ie, high quality indigenous vegetation that now covers less than 20% of its former extent.

Table 1 outlines the threat classification applied to LENZ environments. Appendix I of this Inventory provides a broad description of individual LENZ environments.

Table 1: Threat classification applied to LENZ IV environments

Threat category	Acutely Threatened	Chronically Threatened	At Risk	Critically Under Protected	Under Protected	No Threat Category
Criteria	<10% indigenous cover remaining	10 – 20% indigenous cover remaining	20 – 30% indigenous cover remaining	>30% indigenous cover remaining		
				<10% legally protected	10 – 20% legally protected	>20% legally protected
LENZ IV in Taranaki	A5.3a, A7.2c C1.2a, C1.2c, C1.3a, C2.1a, C3.1b, C3.2d F5.2a, F5.2b, F5.2c, F7.2b G3.3a H1.3a, H1.3b, H3.1b J4.2a	C1.1a D2.1b F1.1e H1.2c	D2.3a F1.1c, F1.3a, F7.1b, F7.2a G1.1d		D2.3c G5.1a H1.3b	C1.1b, C1.1c, C3.2b F1.1b, F1.1d, F1.3b, F5.2c, F5.3b, F6.2a, F7.1b, F7.2b

- **Ecological context:** Refers to connections between the site and the wider landscape eg, wildlife corridors. The 'Ecological context' criterion applies if a site:
 - enhances connectivity between fragmented indigenous habitats;
 - buffers or similarly enhances the ecological values of a specific site of value; or
 - provides seasonal or core habitat for specific indigenous species.

In addition to the above three criterion, the site must also be assessed as positive for the sustainability criterion:

- **Sustainability:** Refers to a secondary criterion or qualifier for the three site criterion. It refers to the ability and potential of the site's values to continue to be significant in the future. Factors taken into consideration when assessing 'sustainability' include: type of ecosystem, habitats, species present and their ecological requirements; presence of disturbance, including weeds and pests, management activities (eg, grazing, water extraction or discharges); size and shape of area; isolation; and conservation management needed to achieve self-sustainability. The 'Sustainability' criterion applies if:
 - key ecological processes remain viable or still influence the site;
 - the key ecological processes within the site are known to be or are likely to be resilient to existing or potential threats under appropriate management; and
 - existing or potential land and water uses in the area around the site can, if necessary, be modified to protect ecological values.

Other values

Where applicable 'other values' are identified. It refers to local or regionally significant values associated with the site, other than ecological values. They include features or attributes of recreational, scientific, cultural and historic significance.

Management threats and response

'Management threats' refers to those threats considered to be impacting on the sustainability of the site's regionally significant value. Management threats are grouped under the following headings:

- **Pest animals:** Animal species believed to be present at the site and which pose a significant threat to the site's ecological values of regional significance. Common pest animal species include mustelids, possums, hedgehogs, rats, cats, goats, hares, and pigs.
- **Weeds:** Introduced plant species present at the site and having a disproportionately high impact on the site's ecological values of regional significance. Common weed species include Old Man's Beard, Wild Ginger, blackberry, willows etc.
- **Habitat modification:** Refers to land and water use activities that are impacting on the ecological values of the site. Typical examples of habitat modification include the grazing of livestock, the clearance of vegetation, land drainage and pollution.

In relation to each threat, a ranking of the current level of threat ('high', 'medium' or 'low') is provided along with a brief explanation.

An indication of site protection measures adopted by the landowner or agencies to address the above threats is also provided in this section. 'Site protection' identifies the formal (legal) protection status of the site and any other management measures, initiatives or programmes that contribute to the maintenance or enhancement of ecological and other values associated with the site. There are passive and active forms of protection ranging from a site being protected as a reserve or through covenanted status, other forms of regulatory protection such as regional and district rules, pest and weed control, to site rehabilitation.

Table 2 identifies the different types of site protection measures, including an explanation of their scope and meaning.

Table 2: Different types of site protection

	Protection	Description
Category A Public ownership or formal agreement	Public conservation estate	Land managed by the Department of Conservation under the Reserves Act 1977 for conservation purposes, including national reserves, recreation reserves, historic reserves, scenic reserves, nature reserves, scientific reserves, government purpose reserves, local purpose reserves, and wilderness areas
	Other reserve land	Land managed by district councils. It includes reserves administered by district councils under the Reserves Act and esplanade reserves, esplanade strips and access strips created under the Resource Management Act
	Covenants	Protected private land. Includes QEII 'open space covenants' that are formally registered on the land's title deed. The site continues to be owned by the landowner and is maintained as open space in accordance with the terms of the covenant. Other covenants include conservation covenants with Department of Conservation and Nga Whenua Rahui Kawenata, which may be entered into by Maori landowners
	Other agreements	Includes Taranaki Regional Council Memorandum of Encumbrance where a site is formally protected by a caveat on the title deed and any other contract between the Council and the private land owner to protect a site
Category B Regulatory protection by local government	Regional rules and district rules	Regional and district rules have the force and effect of regulation under the Resource Management Act. They include 'general rules' and 'site specific rules'. 'General rules' refers to rules that apply to activities throughout the region or district. Depending upon circumstances, regional rules might apply to control land drainage, the taking and use of water, the discharge of contaminants to water, air and land, and the protection of wetlands. District rules might also apply to control land use activities that impact on natural character, landscape, and ecological and amenity values (eg, subdivision, vegetation clearance). 'Site specific rules' refers to rules that target a specific site listed in a regional or district plan and which controls activities associated with that site, ie: <ul style="list-style-type: none"> • Taranaki Regional Council – regional rules relating to 60 regionally significant wetlands listed in Appendix II A, II B and III of the <i>Regional Fresh Water Plan for Taranaki</i> • South Taranaki District Council – district rules relating to 35 'Significant Natural Areas' on privately owned land listed in Schedule II of the District Plan • New Plymouth District Council – district rules relating to promoting the formal protection of 28 unprotected Significant Natural Areas listed in Appendix 21.2 and 21.3 of the District Plan
Category C Active protection	Pest control	Means regular and effective pest control by an agency or individuals to address pest threats to the ecological values of the site eg, Department of Conservation possum control programme, Taranaki Regional Council's Self-help Possum Control Programme etc. Includes pest control on-site, in buffer areas, or both
	Weed control	Means regular and effective weed control by an agency or individuals to address weed threats to the ecological values of the site
	Site rehabilitation	Includes fencing to exclude livestock, planting to rehabilitate ecological values associated with the site, and other forms of assistance

Part Three: Key Native Ecosystems

This part of the Inventory summarises available information in relation to Key Native Ecosystems. Key Native Ecosystems are listed alphabetically by their site name and their regional distribution is illustrated in Appendix III (page 328). Information has been sourced from a number of stakeholders and some is based on surveys completed twenty years ago. Hence caution is needed when utilising this information. The aerial photographs used for each site were taken in 2000/2001.

Presented below is a brief overview of facts relating to Key Native Ecosystems in the Taranaki region.

Key facts

- 155 wetlands, forests, dunelands and other natural areas, covering 118,933 hectares, have been identified as having indigenous biodiversity values of regional significance (ie, Key Native Ecosystems) – this represents 16.4% of the region.
- All Key Native Ecosystems have some form of regulatory protection from inappropriate use and development activities through 'general' regional or district rules.
- 44 Key Native Ecosystems, comprising of 109,486 ha, lie wholly or predominantly in the public conservation estate and are managed by the Department of Conservation.
- 111 Key Native Ecosystems, comprising of 9,447 ha, lie wholly or predominantly on privately owned land.
- 25 of the 111 Key Native Ecosystems on private land are formally (legally) protected, in full or in part, through QEII covenants.