

■ ECOLOGISTS' CONCLUSIONS AND RECOMMENDATIONS

The survey has shown that many private landowners in North Marlborough support the concept of protection of natural values on their land. The voluntary, supportive and non-regulatory partnership approach adopted by the Marlborough District Council has resulted in the collection of a significant amount of ecological information and the promotion of the protection and sustainable management of many of these ecologically special areas. Protection methods include formal covenants, management agreements, fencing, weed control and animal pest control, usually to the benefit of land management and productivity as well as properties' natural values.

It is recommended that the established follow-up process, through the Council's Landowner Assistance Programme, be continued, using the ecological reports as the basis for discussing and designing effective conservation initiatives. There are proven methods for diminishing or removing most existing threats to natural sites and values, given access to advice and resources. Support for private landowners in North Marlborough can be sourced through the Council, although the resources themselves may come from elsewhere. It is recommended that the Council continue to provide a "first port of call" service to private landowners for assistance with protection and conservation management.

■ REFERENCES AND KEY INFORMATION SOURCES

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■ APPENDIX ONE: CRITERIA FOR ASSESSMENT OF AREAS OF ECOLOGICAL SIGNIFICANCE

The following provides explanations or guidelines for the application of ecological significance criteria in the assessment of sites.

Rankings within each criterion are: **H** = High; **M** = Medium; **L** = Low. They collectively contribute to an overall ranking, indicating the degree of significance. Any site for which all criteria rank **L** is not ecologically significant. However, if any criteria rank **M** or **H**, the site is significant.

Representativeness

The site is significant if it contains a good example of one of the existing or former characteristic ecosystem types in the region or ecological district.

- H:** The site contains one of the best examples of the characteristic ecosystem types in the ecological district.
- M:** The site contains one of the better examples, but not the best, of the characteristic ecosystem types in the ecological district.
- L:** The site contains an example, but not one of the better or best, of the characteristic ecosystem types in the ecological district.

Rarity

The site is significant if it contains flora or fauna listed as nationally threatened; or the site contains flora or fauna of note in the region or ecological district because of scarcity, local endemism, specialised habitats or extreme/anomalous geographic distribution; or the site contains plant or animal communities that are rare nationally, regionally or in the ecological district.

- H:** The site contains nationally threatened or rare flora, fauna or communities; or the site contains several examples of regionally or locally threatened or rare flora, fauna or communities.
- M:** The site contains one or a few regionally or locally (but not nationally) threatened, rare or uncommon flora, fauna or communities.
- L:** The site is not known to contain flora, fauna or communities that are threatened, rare or uncommon in the ecological district, regionally or nationally.

Diversity and pattern

The site is significant if it contains a range of species and ecosystem types that is notable for its complexity (diversity of species and occurrence together of different communities) nationally, in the region or in the ecological district.

- H:** The site contains a notably high diversity of species and ecosystem types.
- M:** The site contains a moderate diversity of species and ecosystem types.
- L:** The site contains a relatively low diversity of species and ecosystem types.



Distinctiveness/special ecological characteristics

The site is significant if it contains ecological features (such as species, habitats, communities, indicators, historical importance) that are outstanding or unique nationally, in the region or in the ecological district.

- H:** The site contains any ecological feature that is unique nationally, in the region or in the ecological district; or it contains several features that are outstanding regionally or in the ecological district.
- M:** The site contains ecological features that are notable or unusual but not outstanding or unique nationally, in the region or in the ecological district.
- L:** The site contains no obvious ecological features that are outstanding or unique nationally, in the region or in the ecological district; i.e. the ecological features are typical rather than distinctive or special.

Size and shape

The site is significant if it is moderate to large in size and is physically compact or cohesive.

- H:** The site is large in size for the ecological district and is compact in shape.
- M:** The site is moderate in size for the ecological district and is compact in shape; or the site is relatively large but not very compact or cohesive.
- L:** The site is small in size for the ecological district, or the site is moderate in size but not at all compact or cohesive.

Connectivity

The site is significant if it is physically connected or close to other natural areas, and/or is part of a larger natural ecosystem or a related sequence of natural ecosystems.

- H:** The site is close or well connected to a large natural area or several other natural areas.
- M:** The site is in the vicinity of other natural areas but only partially connected to them or at an appreciable distance.
- L:** The site is significantly isolated from other natural areas.

Sustainability

The site is significant if it is ecologically resilient, i.e. its natural ecological integrity and processes (functioning) are largely self-sustaining.

- H:** The site can maintain its ecological integrity and processes with minimal human assistance.
- M:** The site requires some but not much human assistance to maintain its ecological integrity and processes.
- L:** The site requires much human assistance to maintain its ecological integrity and processes.



■ APPENDIX TWO: NOTABLE PLANTS OF NORTH MARLBOROUGH

NOTABLE PLANTS OF NORTH MARLBOROUGH: THREATENED PLANTS, DISTRIBUTION LIMITS AND ANOMALIES

This is a selection of the key plant species that stand out in North Marlborough for their rarity, threatened status, unexpectedness, remnant status or as representing extremes of geographic distribution. It is not intended to include every species listed as threatened or to present a comprehensive distribution map for each species. Rather, the list acknowledges a series of botanical highlights for the region. It is based on:

- Walls GY 1984. Scenic and Allied Reserves of the Marlborough Sounds. Biological Survey of Reserves Series No. 13. Department of Lands and Survey, Wellington.
- Observations from the significant natural area (SNA) surveys.
- Records from Shannel Courtney (Department of Conservation, Nelson).

Threatened status, shown in “inverted commas”, is taken from:

- de Lange PJ, Norton DA, Courtney SP, Heenan PB, Barkla JW, Cameron EK, Hitchmough R, Townsend AJ 2009. Threatened and uncommon plants of New Zealand (2008 revision). New Zealand Journal of Botany 47: 61-96.

Plants are mapped with numerical symbols. Annotations for each species are given:

T = threatened plant

D = distribution limit

A = anomalous/unexpected occurrence

R = remnant

NOTABLE PLANTS OF NORTH MARLBOROUGH

COMMON NAME	BOTANICAL NAME	NOTABLE CATEGORY	COMMENTS
1 Mt Stokes daisy	<i>Celmisia macmahonii</i> var. <i>macmahonii</i>	T, D	"At risk, naturally uncommon". Endemic to Mt Stokes.
2 Hadfield's rock daisy	<i>Celmisia macmahonii</i> var. <i>hadfieldii</i>	T, D	"At risk, naturally uncommon". Endemic to Richmond Range peaks.
3 Napuka/Titirangi	<i>Hebe speciosa</i>	T, A	"Threatened, nationally vulnerable". Of cultural importance.
4 Pitpat	<i>Pittosporum patulum</i>	T, R	"Threatened, nationally critical". Mt Richmond Forest Park.
5 Pygmy button daisy	<i>Leptinella nana</i>	T	"Threatened, nationally endangered". Inland riverbanks.
6 Neinei	<i>Dracophyllum urvilleanum</i>	T	"At risk, naturally uncommon".
7 NZ skullcap	<i>Scutellaria novae-zelandiae</i>	T, D, R	"Threatened, nationally critical". Inland valleys.
8 Shore milkweed	<i>Euphorbia glauca</i>	T, R	"At risk, declining". D'Urville Island only.
9 Coastal mat daisy	<i>Raoulia</i> aff. <i>hookeri</i>	T, R	"At risk, declining".
10 Native verbena	<i>Teucrium parvifolium</i>	T	"At risk, declining". Inland valleys, riparian.
11 Pingao	<i>Desmoschoenus spiralis</i>	T	"At risk, relict". Sandbinder, extinct in North Marlborough but could be re-introduced.
12 Raukawa	<i>Raukaua edgerleyi</i>	T, R	Listed as "Not threatened", but regionally rare and declining.
13 Red mistletoe, Pikirangi	<i>Peraxilla tetrapetala</i>	T, R	"At risk, declining". Beech forests; highly vulnerable to possum browse.
14 Scarlet mistletoe, Pirita	<i>Peraxilla colensoi</i>	T, R	"At risk, declining". Beech forests; highly vulnerable to possum browse.
15 White mistletoe, Tupia	<i>Tupeia antarctica</i>	T	"At risk, declining". Broadleaved forests; highly vulnerable to possum browse.
16 Yellow mistletoe	<i>Alepis flavida</i>	T, R	"At risk, declining". Beech forests; highly vulnerable to possum browse.
17 Cook Strait porcupine shrub	<i>Melicytus crassifolius</i>	T	"At risk, declining". Outer Sounds, Cook Strait endemic.
18 Coral mistletoe	<i>Korthalsella salicornioides</i>	T	"At risk, naturally uncommon". On kanuka and manuka. Localised.
19 Fierce lancewood	<i>Pseudopanax ferox</i>	T, R	"At risk, naturally uncommon". Outer Sounds, mostly on cliffs.
20 Gossamer grass, wind grass	<i>Anemanthele lessoniana</i>	T, R	"At risk, declining". Very localised; vulnerable to browsing.
21 Large-leaved milk tree	<i>Streblus banksii</i>	T, D, R	"At risk, relict". Outer Sounds, rare in the South Island.
22 Cook Strait kowhai	<i>Sophora molloyi</i>	T, D, R	"At risk, naturally uncommon". Outer Sounds, mostly on cliffs.
23 Shrub mahoe	<i>Melicytus</i> aff. <i>obovatus</i>	T, D, R, A	"At risk, declining". Coastal, very localised; vulnerable to browsing.
24 Cook's scurvy grass	<i>Lepidium oleraceum</i>	T, R	"Threatened, nationally vulnerable". Cook Strait islands, very localised.
25 Wire plant	<i>Muehlenbeckia ephedroides</i>	T, R	"At risk, declining". Coastal, very localised.
26 Serpentine koromiko	<i>Hebe urvilleana</i>	T, D	"At risk, naturally uncommon". Endemic to ultramafic zone.
27 Serpentine gentian	<i>Gentianella stellata</i>	T, D	"At risk, naturally uncommon". Endemic to ultramafic zone.
28 Swamp maire	<i>Syzygium maire</i>	D, R	Regionally rare, a wetland specialist.
29 Black maire	<i>Nestegis cunninghamii</i>	D, A	Common in North Island, very rare in North Marlborough – Linkwater only.
30 White maire	<i>Nestegis lanceolata</i>	D, A	Common in North Island, rare in North Marlborough.
31 Pygmy pine	<i>Lepidothamnus laxifolius</i>	D, A	Common nationally, very rare in North Marlborough – D'Urville Island only.
32 Rewarewa	<i>Knightia excelsa</i>	D, A	Localised but spreading. A North Island plant, recently arrived.
33 Tanekaha	<i>Phyllocladus trichomanoides</i>	D	Very localised; nearing southern limit.
34 Kohekohe	<i>Dysoxylum spectabile</i>	D	Southern limit is central Sounds.
35 Rengarenga (renga lily)	<i>Arthropodium cirratum</i>	A	Associated with former Maori settlements.
36 Whau	<i>Entelea arborescens</i>	A	Associated with former Maori settlements. Very localised.
37 Tree hebe	<i>Hebe parviflora</i>	D	In North Marlborough only on Arapawa Island and Cape Jackson.
38 Cook Strait speargrass	<i>Aciphylla squarrosa</i>	D	A local form of this species.
39 Maidenhair fern	<i>Adiantum viridescens</i>	D	This species is rare in the South Island, very localised in North Marlborough.
40 Gully fern	<i>Cyathea cunninghamii</i>	D	Common nationally, quite rare in North Marlborough.
41 Toii, mountain cabbage tree	<i>Cordyline indivisa</i>	D, R	At southern limits. In a few localities only.
42 Manatu, lowland ribbonwood	<i>Plagianthus regius</i>	D, R	Regionally uncommon. Mostly on fertile inland valley floors.
43 Narrow-leaved lacebark	<i>Hoheria angustifolia</i>	D	Regionally uncommon. Best valley population at Koromiko.

