

Native Habitats Tasman Ecological Assessment Report

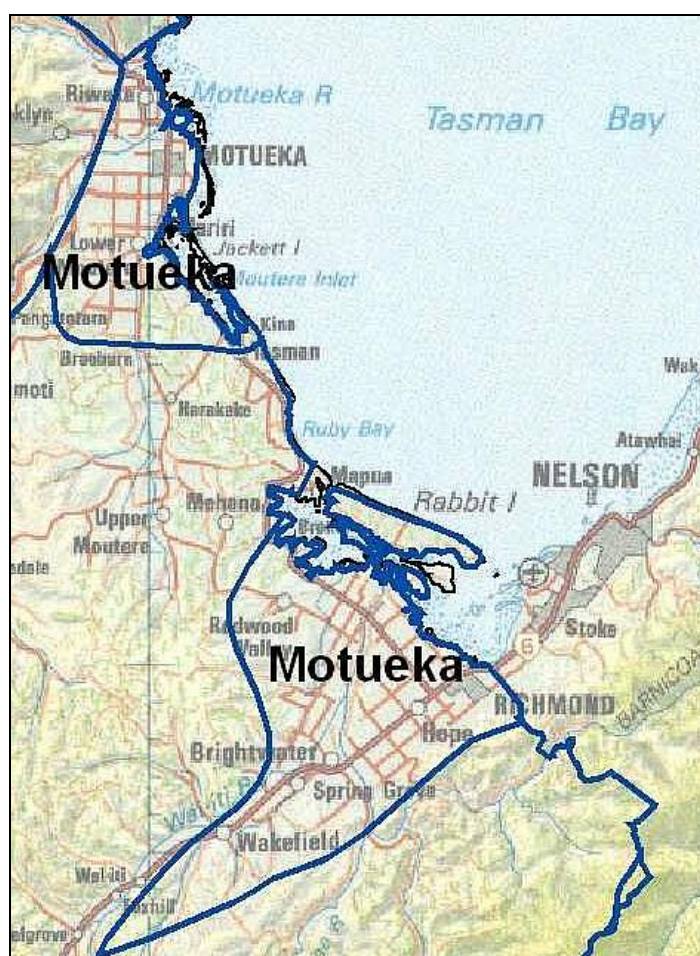
Site:	MO 70 Sandeman saltmarsh
Landowners/Occupiers:	Common Marine & Coastal Area
Ecological District:	Motueka
Grid Ref:	E2524481 N5987241
Surveyed By:	Michael North
Date:	3 June 2010
Survey Time:	1 ½ hrs



THE SETTING – MOTUEKA ECOLOGICAL DISTRICT (ED)

Location and Physical Description

The Motueka Ecological District is small and in two parts; the western one where the Motueka River flows into Tasman Bay and the eastern where the Wairoa and Wai-iti rivers come together to form the Waimea River before entering the bay. It comprises lowland and coastal alluvial plains and remnants of the Moutere Gravels. It has a coast of fertile deltas, large estuaries, sand islands and bluffs. Soils from the Moutere Gravels are clayey and not very fertile, those on stony terraces and sand are shallow and prone to drought, and alluvial soils are generally well drained and fertile. The climate is sunny and sheltered, with very warm summers and mild winters. The land is mostly in private ownership and is used for pastoral farming, forestry, horticulture, residential and commercial settlement. Tasman District Council has considerable landholdings in this District.



Ecosystem Types Originally Present

Formerly, the Ecological District, apart from the waterways, would have been almost entirely covered in forest. The alluvial plains and terraces supported towering podocarp forests of totara, matai and kahikatea. On the low hills was mixed forest of black beech, hard beech, rimu, totara, kamahi, titoki and tawa. Along the coastal bluffs and fringing the estuaries, ngaio, cabbage tree, kowhai and totara would have been common. The estuaries were alive with wetland birds, fish and invertebrates. They had vegetation sequences grading from eelgrass and saline turf into rushes, sedges, harakeke (lowland flax) and shrubs (mainly saltmarsh ribbonwood, mingimingi and

manuka), and finally into forest. Freshwater wetlands would have included fertile lowland swamps with kahikatea, harakeke, cabbage tree, tussock sedge (*Carex secta*) and raupo. Rivers and streams, including riparian ecosystems (trees, shrubs, flaxes, toetoe, etc) and some braided river beds, would have made up a significant portion of the District. The table below gives estimates of the extent of these original ecosystems.

Existing Ecosystems

Most of the natural terrestrial ecosystems have been lost. What remains is mostly in small fragments of forest and freshwater wetland. The estuaries are still surprisingly intact, although their fringing vegetation sequences have largely gone. The table below gives estimates of the proportions of the original ecosystems that remain.

Degree of Protection

There is little protected land within the Ecological District. However, there are significant remnants protected in reserves and covenants. These include important tall forest remnants at Motueka, Brightwater and Wakefield, kanuka forest on alluvial flats at Brightwater, estuarine shores and sand islands. It also includes some small freshwater wetlands and hillslope forest patches. The table below gives estimates of how much of the original and remaining ecosystems have formal protection.

Indigenous Ecosystems – Motueka Ecological District				
Ecosystem type	Original extent (% of ED)	Proportion of original extent remaining (%)	Proportion of original extent / remaining area protected (%)	
			Original	Remaining
Coastal sand dune and flat	10	<5	<5	100
Estuarine wetland	10	30	12?	40?
Fertile lowland swamp and pond	3	<1	<1	40?
Infertile peat bog	—	—	—	—
Upland tarn	—	—	—	—
Lake	—	—	—	—
River, stream and riparian	3	50	5?	10?
Lowland podocarp forest	50	<1	<1	90
Lowland broadleaved forest	5	<1	<1	90
Lowland mixed forest	12	<1	<1	90
Lowland beech forest	5	<1	<1	90
Upland beech forest	—	—	—	—
Subalpine forest	—	—	—	—
Lowland shrubland	2	<1	<1	50
Upland/subalpine shrubland	—	—	—	—
Frost flat communities	—	—	—	—
Tussock grassland	—	—	—	—
Alpine herbfield and fellfield	—	—	—	—

SITE DESCRIPTION

Location, Geology, Hydrology

This 2.5 ha site lies at and around MHW at the end of Sandeman Lane beside Nelson Pine Industries on the south-eastern margins of Waimea Inlet.

The site has been delineated to include all rush and sedge beds rising up to coastal margin shrubland, but to generally exclude glasswort saltmarsh herbfield as outside the scope of the survey.

Vegetation

COMMUNITIES

1 Saltmarsh ribbonwood – sea rush scrub/rushland

2 Sea rush(land) +- saltmarsh ribbonwood

3 Glasswort herbfield

4 Estuary tussock(land)

5 Sea rush- oioi- glasswort mixed associations

A mosaic of vegetation types characterises the site with saltmarsh ribbonwood, glasswort and sea rush variably dominating. The ribbonwood forms its largest stand along the eastern shoreline, with much sea rush towards its outer margins where the ribbonwood is of lower stature. Unusually sea rush tends not to form pure stands, rather merging as above, or in mosaics with glasswort, and oioi at the western end. Bands of estuary tussock run along much of the outer margins of the vegetation. An inner band of earlier surface disturbance largely features glasswort. Around a freshwater channel, oioi features locally.

Botanical Values

COMMUNITIES

Estuarine saltmarsh originally covered 10% of the Motueka Ecological District (ED) of which 30% remains ie 3% of the ED. Saltmarsh ribbonwood scrub has however been depleted far more than this figure suggests and the extensive area of this community at this site is of particular note.

SPECIES

Seven native plant species were noted. Estuary tussock occurs in low numbers here. It is a feature of Waimea Inlet (and Moutere Inlet and a section of Farewell Spit) but is otherwise absent from the South Island.

Fauna

At least 4 kotare/kingfisher were noted on wires overhead. The habitat is suitable and large enough for banded rail although there are no records for the species here.

Weed and Animal Pests

No issues of note.

Other Threats

None were noted. In the longer term the site is threatened with sea level rise with no options to retreat inland.

General Condition

The site is generally in fine condition. A band of the site appears to be the bed of a former vehicle route and the vegetation has been modified accordingly.

Landscape/Historic Values

The site is quite small and narrow but adjoins TDC's Sandeman Reserve, and is an attractive feature of the area.

ASSESSMENT OF ECOLOGICAL SIGNIFICANCE

The following criteria are assessed:

Representativeness: *How representative is the site of the original vegetation?*

Rarity: *Are there rare species or communities?*

Diversity and pattern: *Is there a notable range of species and habitats?*

Distinctiveness/special features: *Are there any features that make the site stand out locally, regionally or nationally for reasons not addressed by the above criteria?*

Size/shape: *How large and compact is the site?*

Ecological context: *How well connected is the site to other natural areas, to what extent does the site buffer and is buffered by adjoining areas, and what hydrological services to the catchment and critical resources to mobile species does it provide?*

Sustainability: *How well is the site able to sustain itself without intervention?*

Site Significance

The technical assessment of significance is tabled in the Appendix.

This site is significant for the following reasons:

It has high rarity values, and moderate representativeness values sufficient to give the site significance in the context of the Motueka Ecological District.

Management Issues and Suggestions

The site is essentially self-sustaining, with no obvious threats or management issues in situ. Heavy metals have however been reported in concentrations toxic to fauna in run off from Nelson Pine Industries recently, apparently attributable to the large expanses of metal roofing.

Survey for banded rail should be undertaken although none were recorded by Graeme Elliott in his early 1980s survey.

The site is backed by a stopbank and TDC reserve. With the removal of the bank along this section of coast and appropriate replanting, this area presented one of the few opportunities to restore original coastal vegetation sequences from saltmarsh to high forest along the Waime Inlet margins. Unfortunately the council chose to create an amenity reserve with native amenity plantings and have left most of the stop bank intact.

PHOTO GALLERY



A dense low growth of saltmarsh ribbonwood characterises parts of the site, co-existing with sea rush



Another part of the saltmarsh; the occurrence of ribbonwood away from the shore may date from the loss of such vegetation closer in, due to works on the bed of the estuary



Sea rush forms stands with a variable presence of low saltmarsh ribbonwood



Bands of estuary tussock are a feature of the outer margins of the site



Small areas are a mix of vegetation including oioi

APPENDIX

Site Significance

Each site is ranked according to the highest ranking vegetation community or habitat that occurs within it. However, a site will be divided into more than one area for assessment purposes if they vary markedly in character, size or condition. Some examples are:

- (a) a core area of vegetation (say, a podocarp gully remnant) is surrounded by/adjoins a much larger area of markedly different vegetation (say, kanuka scrub);
- (b) a core area of vegetation has *markedly* different ecological values to the surrounding/adjacent vegetation;
- (c) where artificially abrupt ecological boundaries occur between an area of primary vegetation and a surrounding/adjacent area of secondary vegetation.

Where such division of a site into two or more separately assessed areas occurs, such adjoining areas will also be considered in their buffering/connectivity roles to one another.

This site was assessed as one unit as the above considerations did not indicate the need to assess communities separately.

Significance Evaluation		
	Score	Example/Explanation
Primary Criteria		
Representativeness		
The site moderately poorly resembles its original condition	M	The site has been modified with the installation of pylons through it and vegetation sequences seem to suggest earlier earthworks; all landward margins stop-banked
Rarity and Distinctiveness		
The site includes an ecosystem that is originally rare nationally as listed under DoC/MfE National Priority 3, and retains functional indigenous components	H	Estuaries
The site includes a primary community depleted to 5% or less of original pre-human cover in the Ecological District, unless in poor condition	H	Saltmarsh ribbonwood scrub
Diversity and Pattern		
Indigenous plant communities species or habitats are present with typical diversity for such sites in the Ecological District	ML	
Secondary Criteria		
Ecological Context (highest score)		
Connectivity		
The site is reasonably well separated from other areas of indigenous vegetation	ML	Nearest sedge/rush saltmarsh lies c500m to the west
Buffering to		

Significance Evaluation		
	Score	Example/Explanation
The site is moderately buffered by vegetation	M	Vegetation buffers the site effectively around at least ½ of its boundary Native and exotic trees give a measure of buffering on the landward side
Provision of critical resources to mobile fauna		
The site provides seasonally important resources for indigenous mobile animal species and these species are present in the locality even though they may not have been observed at the site.	L	Unusually important stands of podocarp, tawa or kowhai trees that provide seasonally important benefits for forest birds.
Hydrological services to the catchment		
The site provides hydrological services to the catchment.	L	
Size and Shape		
The site is of moderate size for its vegetation community and Ecological District but is not compact	ML	
Other Criterion		
Sustainability (average score)	ML	
Physical and proximal characteristics		
Size, shape, buffering and connectivity provide for a moderately low overall degree of ecological resilience.	ML	Size M Shape L Buffering M Connectivity ML
Inherent fragility/robustness		
Indigenous communities are inherently fragile.	L	
Threats (low score = high threat; lowest score taken)		
Ecological impacts of grazing, surrounding land management, weeds and pests*	H	Grazing H Surroundings H Weeds H Pests H

* observed pest impacts only

NB where scores are averaged, the score must reach or exceed a particular score for it to apply

Summary of Scores	Criterion	Ecological District Ranking
Primary Criteria	Representativeness Rarity Diversity and Pattern	M H ML
Secondary Criteria	Ecological Context Size/Shape	M ML
Additional Criteria	Sustainability	ML

H = High MH = Medium-High M = Medium ML = Medium-Low L = Low

Summation of Scores to Determine Significance

If a site scores at least as highly as the combinations of primary and secondary scores set out below, it is deemed significant for the purposes of this assessment.

Primary Criteria		Secondary Criteria	
Any of the three primary criteria with a score at least as high as listed		Any of the two secondary criteria with a score at least as high as listed	
		Plus	
	H		—
	MH x 2		—
	MH + M		—
	MH	+	MH
	M x 2	+	H
	M x 2	+	MH x 2
	M	+	H + MH

H = High MH = Medium-High M = Medium

Is this site significant under the TDC assessment criteria? **YES**

Species List

r = Rare o = Occasional m = Moderate Numbers ml = Moderate Numbers Locally c = Common
 lc = Locally Common f = Frequent lf = Locally Frequent x = Present But Abundance Not Noted
 P = Planted R = Reported

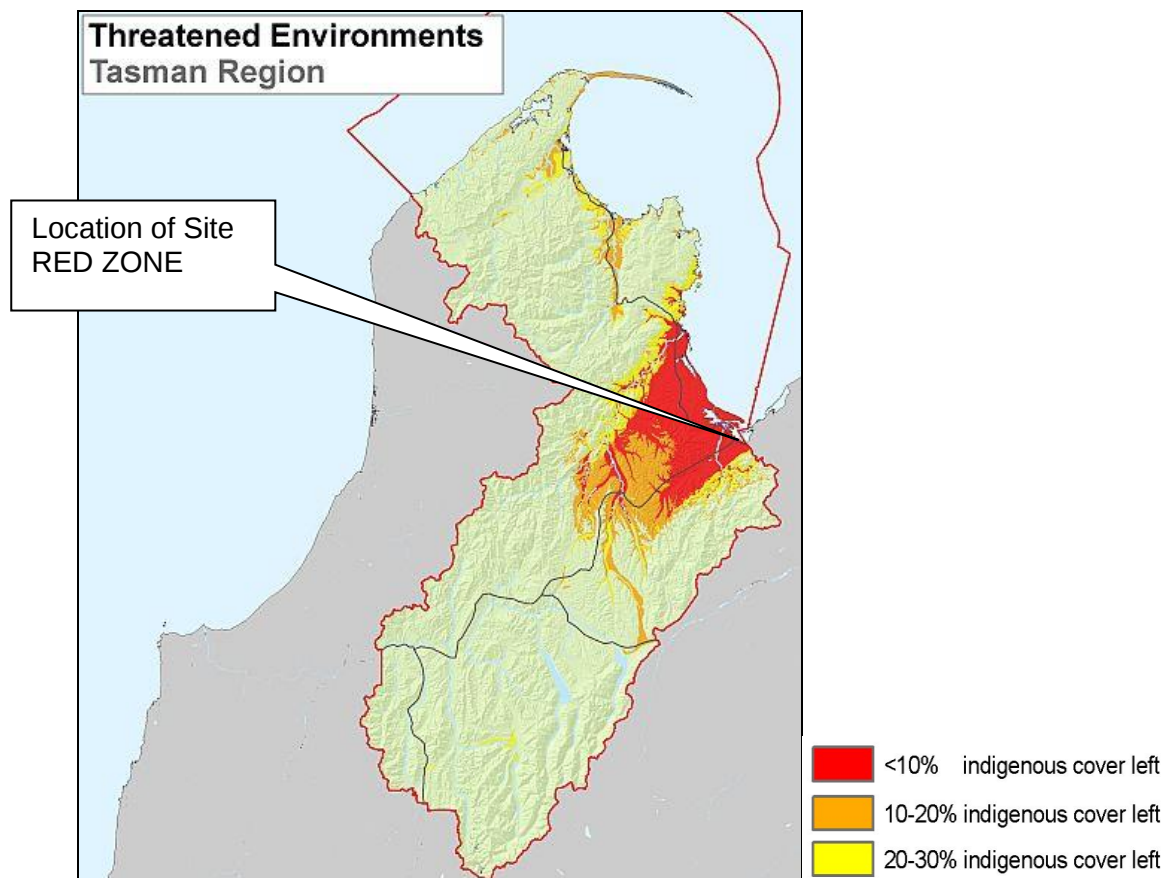
Species Name	Common Name	Status
Trees Shrubs		x
<i>Muehlenbeckia complexa</i>	pohuehue	r
<i>Plagianthus divaricatus</i>	saltmarsh ribbonwood	f
Lianes		x
Dicot Herbs		x
<i>Samolus repens</i>	sea primrose	o
<i>Sarcocornia quinquefolia</i>	glasswort	f
Monocot Herbs		x
Grasses Sedges Rushes		x
<i>Apodasmia similis</i>	oioi	ml
<i>Austrostipa stipoides</i>	estuary tussock	ml
Ferns		x
Weeds		x
<i>Atriplex prostrata</i>	orache	o
Birds		x
kingfisher/kotare	kingfisher/kotare	x

Land Environments of New Zealand (LENZ)

LENZ is a national classification system based on combinations of soil characteristics, climate and landform. These three factors combined are correlated to the distribution of native ecosystems and species.

When LENZ is coupled with vegetation cover information it is possible to identify those parts of the country (and those Land Environments) which have lost most of their indigenous cover. These tend to be fertile, flatter areas in coastal and lowland zones as shown in the map below for Tasman District.

Further information on the LENZ framework can be found at-
www.landcareresearch.co.nz/databases/lenz



National Priorities for Protecting Biodiversity on Private Land

Four national priorities for biodiversity protection were set in 2007 by the Ministry for the Environment and Department of Conservation.

National Priorities	Does this Site Qualify?
1 Indigenous vegetation associated with land environments (ie LENZ) that have 20 percent or less remaining in indigenous cover. This includes those areas colored in red and orange on the map above.	Yes
2 Indigenous vegetation associated with sand dunes and wetlands; ecosystem types that have become uncommon due to human activity	Yes
3 Indigenous vegetation associated with 'naturally rare' terrestrial ecosystem types not already covered by priorities 1 and 2 (eg limestone scree, coastal rock stacks)	No
4 Habitats of nationally 'threatened' or 'at risk, declining' indigenous species	No

Further information can be found at -

www.biodiversity.govt.nz/pdfs/protecting-our-places-brochure.pdf

Significance of LENZ and National Priorities

What does it mean if your site falls within the highly depleted LENZ environments, or falls within one or more of the four National Priorities?

These frameworks have been included in this report to put deeper ecological context to the site. They are simply another means of gauging ecological value. This information is useful in assessing the relative value of sites within Tasman District when prioritising funding assistance. They otherwise have no immediate consequence for the landowner unless the area of indigenous vegetation is intended to be cleared, in which case this information would be part of the bigger picture of value that the consenting authority would have to take into account if a consent was required.



