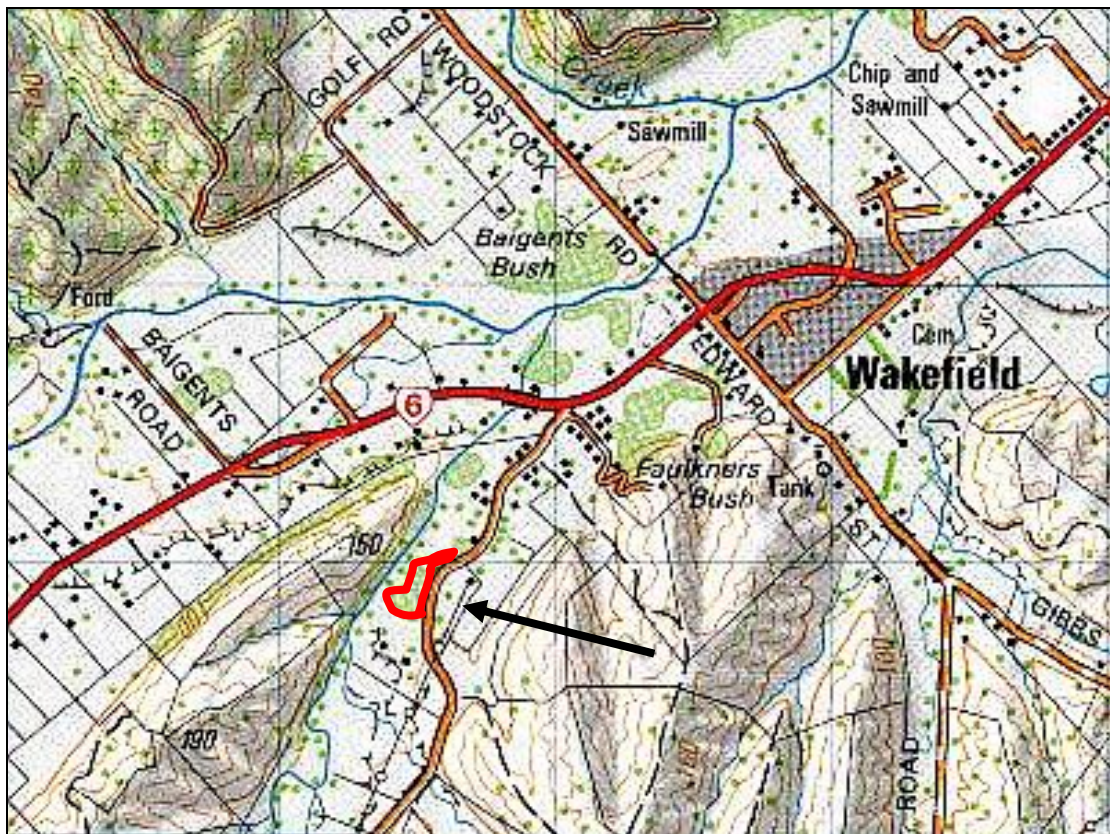


**Tasman District Council
Significant Natural Area (SNA) Survey Programme
Site Assessment Report**

Site No MO 37
Property Name Robson Reserve
Landowners/Occupiers Tasman District Council
Ecological District Motueka
Surveyed By Michael North
Date 8 October 2008



The Setting - Motueka Ecological District

(Information copied from the TDC report 'Tasman District Biodiversity Overview' 2004)

Location and physical description

This small ecological district is 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 and residential and commercial settlement. Tasman District Council has considerable land holdings 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 tabulation 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 tabulation 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 tabulation 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	Remain
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

The c3ha site lies at the very southern end of the Motueka ED at around 70-80m asl beside the Eighty Eight Valley Stream. It lies on river terrace deposits, comprising well sorted gravel of the modern flood plain (Q1a), and a higher terrace of clay-bound gravel forming the lowest aggradation surface (Q2a). The site straddles these two terraces and the intervenening scarp slope.

Vegetation

The site comprises a mature primary and partly secondary treeland remnant of lowland totara, matai and kahikatea that has long been grazed, so that today the trees tower over largely exotic herby grassland with almost no lower indigenous woody vegetation. Parts of the forest margins trail off into open treeland. The site comprises the following communities:

1 Kahikatea-lowland totara-matai treeland on recent alluvium

The lower and more recent terrace comprises very mature kahikatea up to 1.5m dbh that are emergent over a lowland totara and matai canopy of mature trees of mostly 50-80cm dbh with some younger adult trees. Two pokaka, one black beech and one silver beech also occur in the canopy. Leather leaf fern/*Pyrrosia eleagnifolia* is common on tree limbs. A sheep grazed sward occurs at the foot of the trees, largely of exotic species, but including a few indigenous species, particularly the grass *Microlaena stipoides*, and the herb *Hydrocotyle heteromeria*.

2 Lowland totara-matai treeland on scarp slopes and aggradation terrace

Rising above community 1 is podocarp forest lacking kahikatea, with areas dominated by both lowland totara and matai, but with lowland totara more dominant overall. One narrow leaved lacebark is present on the margin beside the valley road. Rare *Coprosma crassifolia* and one *Melicope simplex* occur along the lip of the upper terrace with some regeneration of the former species in the vicinity of the adults on the upper terrace that is periodically browsed. The vine *Meuhlenbeckia australis x complexa* is locally common trailing through the sward of exotic and indigenous species, of similar constituent to community 1.

Botanical Values

Communities

Alluvial podocarp forest, whatever its condition is extremely rare in Motueka ED, with well less than 1% of its original cover remaining. It once covered around half of the ED (over 12000ha), whereas today there would be <50ha remaining. These figures highlight the extreme significance of such communities.

Species

Narrow leaved lacebark (one adult tree noted) is rare in Motueka ED and is regionally rare.

Fauna

Indigenous birds noted were tui and kereru. The site would undoubtedly be of great importance in the locality as a seasonal source of fruit to indigenous forest birds, but at the time of survey, no fruiting was occurring.

Weed and animal pests

No significant weeds were noted.

Other threats

Sheep grazing is responsible for a complete regeneration failure of the forest.

General condition

As a forest remnant (it is strictly a treeland) the site is in very poor condition due to a complete lack of regeneration in recent decades, and the absence of a functional forest ecology due to the lack of a forest understorey. Younger lowland totara are generally in poor health or dying, which may be a result of the recent 2000/01 drought. In the longer term the forest is doomed without intervention.

Landscape/Historic values

The forest provides a very attractive margin to this part of the Eighty Eight Valley Road.

Assessment of ecological value

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?

These are tabulated below.

SITE EVALUATION UNDER THE SIGNIFICANCE CRITERIA		
	Score	Example/explanation
PRIMARY CRITERIA		
Representativeness	M	
The site contains mature secondary vegetation that moderately poorly or poorly resembles prehuman natural regeneration where the canopy species are those of the original primary cover	M	Eg. Grazed mature secondary beech or podocarp forest/treeland
The site includes primary vegetation that poorly or moderately poorly resembles its original condition.	M	Vegetation characterised by original canopy species or climax plant species, but which has been heavily impacted by herbivores or direct human intervention.
Rarity	MH	
The site includes a community depleted 5% or less of original pre-human cover in the Ecological District but in poor condition that may be of either primary or mature secondary canopy species of the original dominant cover	MH	Eg. A stand of alluvial podocarp or pukatea trees over pasture. This definition includes secondary forest/treeland where canopy species are those of the original/primary canopy
The site supports a locally endemic species or a species rare in the Ecological District (ED)	M	One narrow-leaved lacebark
Diversity and Pattern	L	
Indigenous plant communities species or habitats are present with less diversity than is typical for such sites in the Ecological District	L	
SECONDARY CRITERIA		
Size		
The site is of moderately high size for its vegetation community and Ecological District but is rather elongate	M	Site is fragmented and elongate
Ecological Context	MH	
Connectivity/Buffered by		
The site is separated from other areas	M	

of indigenous vegetation but provides an important part of a network of closely lying sites		
Buffering		
The site is poorly buffered	L	
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	MH	Eg. Unusually important stands of podocarp, tawa, pigeonwood or kowhai trees that provide a seasonally important benefits for forest birds.
Hydrological services to the catchment		
The site provides hydrological services to the catchment	L	The site is very small
OTHER CRITERION		
Sustainability	M	
Physical and proximal characteristics		
Size shape buffering and connectivity provide for a moderately low overall degree of ecological resilience	ML	Size ML Shape L Buffering L Connectivity M
Inherent fragility/robustness		
Indigenous communities are inherently resilient	H	
Threats (lowest score taken; low score = high threat)		
Ecological impacts of grazing, surrounding land management, weeds or pests*	L	Grazing L Surroundings H Weeds H Pests H

* observed pest impacts only

SUMMARY OF SCORES	Criterion	Ecological District Ranking
Primary Criteria	Representativeness Rarity Diversity and pattern	M MH L
Secondary Criteria	Size/shape Ecological context	M MH
Additional Criterion	Sustainability	M

H=high MH=medium-high M=medium ML=medium-low L=low

Is the site 'significant' under the TDC SNA criteria? YES

If a site scores 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 3 primary criteria with a score at least as high as listed	&	Any of the 2 secondary criteria with a score at least as high as listed
1	H		-
2	2x MH		-
3	MH + M		-
4	MH	&	MH
5	2x M	&	H
6	2x M	&	2x MH
7	M	&	H + MH

Management issues and suggestions

Currently this TDC reserve is used by a pony club, with the land also leased out for sheep grazing. The forest area does not appear to be used by the pony club. A flying fox and tyre swing are evidence of recreational use of the forest part of the site.

It is recommended that the denser treeland part of the reserve be fenced off from grazing, and natural regeneration be allowed to take place. The well-drained nature of much of the site will mean that regeneration is likely to be very slow without restoration planting. Such planting should be targeted to seal the edges with a buffering margin, to lower light levels under the trees that favours native regeneration over dense exotic ground cover, and to mitigate against edge effects, particularly drying air movement that has been heated by surrounding open conditions. Weeds such as blackberry, old man's beard and barberry will tend to establish in ungrazed areas and so a weed maintenance programme would need to be put in place to keep these weeds controlled. Without such intervention the site will gradually disintegrate into open treeland through recruitment failure, and eventually be lost. With so little of this community left in the ecological district, this would be an unnecessary loss.



The site lies beside the Eighty Eight Valley Road; the lone narrow-leaved lacebark is evident here beside the fence



Lowland totara is common throughout and dominates areas of the higher terrace beside the road



The park-like nature of the reserve is very attractive but belies the fact that this is a treeland in terminal decline without intervention



Part of the lower terrace where kahikatea is common



One of two mature black beech at the reserve – both show signs of canopy dieback and are failing to recruit themselves



The lone Melicope simplex, testimony to the sort of forest understory that could regenerate at this site if given a chance to do so



The only attempt at restoration at this site is this single narrow-leaved maire

APPENDIX

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

Numbers refer to the number of plants of a species recorded

Species Name	Common Name	Status
Trees Shrubs		
Coprosma crassifolia		o
Dacrycarpus dacrydioides	kahikatea	c
Elaeocarpus hookerianus	pokaka	2
Hoheria angustifolia	small-leaved lacebark	1
Melicope simplex		1
Nestegis montana	narrow leaved maire	P
Nothofagus menziesii	silver beech	1
Nothofagus solandri	black beech	2
Podocarpus totara	lowland totara	c
Prumnopitys taxifolia	matai	c
Lianes		
Muehlenbeckia aus x com		m
Dicot Herbs		
Hydrocotyle heteromeria		lc
Monocot Herbs		
Grasses Sedges Rushes		
Microlaena stipoides		lc
Ferns		
Pyrrosia eleagnifolia		lc
Weeds		
Birds		
	tui	x
	pigeon/kereru	x
	blackbird	x
	chaffinch	x
	starling	x

