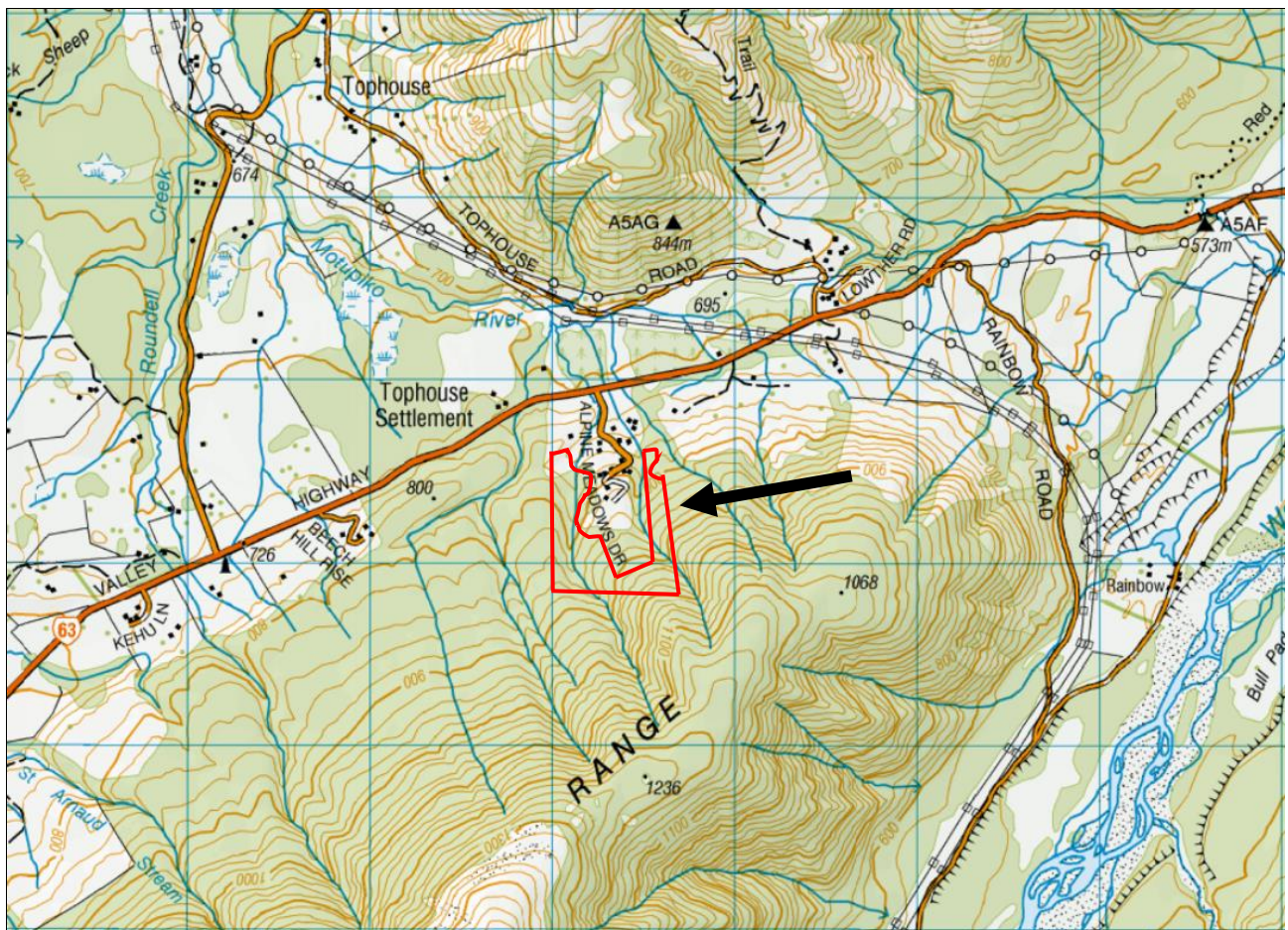


# Native Habitats Tasman Ecological Assessment Report

<b>Site:</b>	TR2a
<b>Landowners/Occupiers:</b>	Tasman District Council

<b>Ecological District:</b>	Travers
<b>Grid Ref:</b>	E1593116 N5374249
<b>Surveyed By:</b>	Michael North
<b>Date:</b>	17 October 2022
<b>Survey Time:</b>	3 hrs



# SITE DESCRIPTION

## Location, Geology, Hydrology

This 29 ha area (part of a larger site of c113 ha spanning multiple private titles) lies between 740-1000m asl on the northern end of the St Arnaud Range overlooking the Tophouse area. It surrounds the Alpine Meadows residential development. Two main creeks run down through the area originating from public conservation land above, and a small gully at the bottom holds a small wetland.

The geology is mostly Triassic Torlesse greywacke, with the lowest elevations on Pleistocene glacial outwash gravels. The northern end of the site sits right on the Alpine Fault.

## Vegetation

### GENERAL

Ecosystems: Upland beech forest

### COMMUNITIES

#### 1 Red beech- silver beech- (black beech) forest on alluvium

A small (<1hectare) area of alluvial forest is present at the lower end of the western gully. It is typically quite sparse in the understorey but with areas of strong beech regeneration, particularly red beech to 1-3m. Crown fern is localised, and a few black beech seedlings were seen.

#### 2 Red beech- silver beech- [black/mountain beech] forest on hill-slopes and gullies

Broad slopes which constitute most of the community are typically very open under the canopy with almost no associates.

Gullies are rich with broadleaved saplings and young trees where riparian banks deter ungulates. In such areas stinkwood is quite common, with broadleaf and *Raukawa simplex* moderately so, with occasional lancewood, upland fivefinger, putaputaweta and fuchsia. One *Olearia arborescens* was noted. Ferns are scattered and include crown fern, *Blechnum vulcanicum*, beech hard fern, and occasional other species. *Astelia fragrans* is occasional. Wet seeps and damp areas on slopes close to the creek hold much beech hard fern, *Uncinia uncinata* and crown fern. Seepy bedrock may hold bush rice grass, *Blechnum chambersii* and kiokio fern very locally. Bush lawyer is scattered.

#### 3 Silver beech- mountain beech forest on hill-slopes

Such areas are richer in the understorey cf. community 3. There are areas of carpeting mingimingi of a prostrate form, and others of beech hard fern. *Neomyrtus pedunculata* can be locally common. Very locally there is canopy cedar, with around 20 such trees in a confined area (mapped below), with minor cedar saplings. Occasional upland totara and toatoa saplings are present, with some stinkwood, *Neomyrtus pedunculata*, and regeneration of silver and mountain beech. Ground cloaking mosses are locally extensive.

#### 4 Manuka scrub wetland in gully hollow

A <0.5ha area of dense tall manuka is opening up as the canopy thins out and collapses, with extensive areas of broadleaf regeneration in places. *Coprosma tayloriae* is moderately common, *Carex secta*, *Carex coriacea* and kiokio fern are scattered, and sphagnum moss locally common. Occasional are weeping matipo, stinkwood, with toetoe rare. Also present are exotics- blackberry, Yorkshire fog and occasional soft rush. Pig rooting is extensive, disruption vegetation patterns and the canopy decline is resulting in dynamic vegetation changes.

#### 5 Kanuka forest on gully side-slope

On immediate slopes adjoining the manuka, young open kanuka forest is present, with moderate broadleaf regeneration. Bracken and *Lycopodium volubile* are moderately common. Mingimingi is present.

## Botanical Values

### COMMUNITIES

Context

By the calculations of Simpson and Walls (2004) – see Appendix 6, 90% of upland forest (>600m asl) and 45% of lowland forest (<600m asl) remains in the ecological district. Further analysis shows that ultra-lowland forest (<300m asl) has been depleted to <20% of original cover, with alluvial forest <5% remaining.

#### *Site*

The site as a whole which has yet to be fully surveyed, largely comprising extensive areas of red-silver beech and silver-mountain beech forest. Of interest is the small stand of cedar on this title, and there may well be other areas off-title. Overall the site is typically representative of its kind.

### **SPECIES**

43 native plant species were noted. The presence of cedar is noteworthy.

## **Fauna**

Native forest birds noted were korimako/bellbird, piwakawaka/fantail, miromiro/tomtit, and kaka. Also known to be present in the locality and to probably inhabit or utilise this site are ruru/morepork, riroriro/grey warbler, tui, tauhou/waxeye, kereru/pigeon, weka, kotare/kingfisher, toutouwai/robin, pipiwharauroa/shining cuckoo, pipipi/brown creeper and karearea/native falcon.

The presence of kaka is notable, with a bird calling from the canopy on two occasions. Kaka are likely resident. This species is listed as 'nationally vulnerable'. Its presence here is no doubt supported by the longstanding Rotoiti Mainland Island project.

## **Weed and Animal Pests**

Pig rooting is moderately common throughout, with some of the heaviest damage within the small wetland. Pigs were twice flushed in the vicinity of the wetland. Ungulate browse pressure (likely red deer) is moderately high at present, and a long history of deer presence is no doubt responsible for the absence of browse-favoured species from accessible terrain.

Weed issues are very minor, being confined to the small wetland with blackberry a problem locally.

## **Other Threats**

None were noted.

## **General Condition & Other Comments**

The site is in moderately poor condition due to ungulate impacts.

## **Landscape/Historic Values**

The site is continuous with extensive areas of public conservation land.

## **Assessment of Ecological Significance**

The following criteria are assessed:

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

**Rarity and Distinctiveness:** *Are there rare species or communities? Are there any features that make the site stand out locally, regionally or nationally for reasons not otherwise addressed?*

**Diversity and Pattern:** *Is there a notable range of species and habitats? To what degree is there complexity in this ie patterns and gradients?*

**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 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 is tabled in the Appendix.

This site is significant for the following reasons:

With high rarity values there are sufficient scores for the site to be considered 'significant'.

## **Management Issues and Suggestions**

For the restoration of the vegetation of the forest, deer and pig control is required, but this would necessitate a landscape scale programme for this to be effective. The best deterrence would be a keen hunter from the subdivision where regular hunting pressure would likely keep animals away.





*Alluvial red beech forest toward the north-western lower corner of the site*



*The two creeks support quite lush vegetation along their margins where ungulates struggle to access*





*Riparian ungulate-palatable/semi-palatable species include upland Raukawa simplex (above), upland fivefinger, broadleaf, and stinkwood, on near vertical banks*



*View of the more western of the two creeks*





*Large red beech are present but rare*



*Typical view of hill-slope red beech-silver beech forest*





*Seeps and damper areas on slopes support much fern growth- such as crown fern and beech hard fern*



*A stand of up to 30 cedar are present in one discrete area with several young poles but no seedlings*





*A prostrate form of mingimingi is locally common under silver-mountain beech forest*



*Silver beech-mountain beech in the area of scattered cedar*





*The largest of the cedar at c80cm dbh*





*The more eastern creek fall precipitously (only a short section runs through this title)*



*Areas of heavily cutover forest have been excluded from the site*





*The north-western corner of the site holds a manuka rich wetland*



*Pig rooting in the wetland is heavy*



# APPENDIX

## 1) Technical Assessment of Site Significance

NB this assessment is for the site as a whole across several titles.

Significance Evaluation		
	Score	Example/Explanation
<b>Primary Criteria</b>		
<b>Representativeness</b>		
Indigenous vegetation or habitat of indigenous fauna that is moderately representative, typical or characteristic of the natural diversity of the ecological district	M	Vegetation or habitat that is moderately representative relative to other such areas in the ecological district
Primary vegetation or habitat that poorly or moderately-poorly resembles its known or likely natural state	M	Primary vegetation characterised by natural canopy/dominant species, but which has been heavily affected by herbivores or direct human intervention
<b>Rarity and Distinctiveness</b>		
Presence of a 'threatened' species	H	Kaka
An ecosystem that is nationally uncommon and retains indigenous vegetation or habitats of indigenous fauna	H	Ecosystem types (dunes and wetlands), as listed by MfE (2007) for protection as National Priority 2
A feature of the site that is distinctive in the ecological district and is not covered by other elements of this criterion	MH	Cedar-rich forest
<b>Diversity and Pattern</b>		
Presence of a typical diversity of indigenous species, communities or habitat types for such sites in the ecological district	ML	
<b>Secondary Criteria</b>		
<b>Ecological Context (highest score)</b>		
<b>Connectivity</b>		
The site adjoins other indigenous vegetation or habitat and is very well connected to that vegetation or habitat	H	More than half (50%) of the site boundary is connected to other indigenous vegetation.
<b>Buffering to</b>		
The site is well buffered	MH	Vegetation effectively buffers the site around at least 75% of its boundary
<b>Provision of critical resources to mobile fauna</b>		
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	e.g. Unusually important stands of podocarp, tawa or kowhai trees that provide seasonally important benefits for forest birds.
<b>Size and Shape</b>		



Significance Evaluation		
	Score	Example/Explanation
A moderate-sized area for this type of vegetation or habitat for the ecological district, and with a reasonably compact shape	MH	
Other Criterion		
<b>Sustainability</b> (average score)	<b>M</b>	
<b>Physical and proximal characteristics</b>		
Size, shape, buffering and connectivity provide for a moderately high overall degree of ecological resilience.	MH	Size MH Shape MH Buffering MH Connectivity H
<b>Inherent fragility/robustness</b>		
Indigenous communities are inherently resilient.	H	(Other than for the small wetland area)
<b>Threats</b> (low score = high threat; lowest score taken)		
Ecological impacts of grazing, surrounding land management, weeds and pests*	ML	Grazing H Surroundings H Weeds H Pests ML

\* 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
<b>Primary Criteria</b>	Representativeness Rarity and Distinctiveness Diversity and Pattern	M H ML
<b>Secondary Criteria</b>	Ecological Context Size and Shape	H MH
<b>Additional Criteria</b>	Sustainability	M

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	
		<b>Plus</b>	
	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**



## 2) Significant Native Habitat Map



*Significant Native Vegetation/Habitat outlined in red; green= cedar stand*



### 3) 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  
 v = Very. For example: vlc = very locally common, mvl = moderate numbers very locally

<b>Species Name</b>	<b>Common Name</b>	<b>Status</b>
<b>Trees Shrubs</b>		<b>x</b>
<i>Carpodetus serratus</i>	putaputaweta; marbleleaf	o
<i>Coprosma foetidissima</i>	stinkwood	lc
<i>Coprosma propinqua</i>	common coprosma	r
<i>Coprosma tayloriae</i>		lc
<i>Elaeocarpus hookerianus</i>	pokaka	r
<i>Fuchsia excorticata</i>	kotukutuku; tree fuchsia	o
<i>Griselinia littoralis</i>	kapuka; broadleaf	ml
<i>Kunzea ericoides</i>	kanuka	vlc
<i>Leptecophylla juniperina</i>	prickly mingimingi	vlc
<i>Leucopogon fasciculatus</i>	mingimingi	lc
<i>Libocedrus bidwillii</i>	kaikawaka	r
<i>Myrsine divaricata</i>	weeping matipo	o
<i>Neomyrtus pedunculata</i>		vlc
<i>Nothofagus fusca</i>	tawhairaunui; red beech	c
<i>Nothofagus menziesii</i>	tawhai; silver beech	c
<i>Nothofagus solandri</i>	tawhairauriki; black beech	ml
<i>Nothofagus solandri var cliffortioides</i>	mountain beech	m
<i>Olearia arborescens</i>	glossy tree daisy	r
<i>Podocarpus cunninghamii</i>	Hall's totara	r
<i>Podocarpus t x c</i>	hybrid totara	r
<i>Pseudopanax colensoi</i>	upland fivefinger	o
<i>Raukawa anomalous</i>	raukawa	m
<i>Raukawa simplex</i>		mvl
<b>Lianes</b>		<b>x</b>
<i>Rubus cissoides</i>	bush lawyer	ml
<b>Dicot Herbs</b>		<b>x</b>
<b>Monocot Herbs</b>		<b>x</b>
<i>Astelia fragrans</i>	ground lily	o
<i>Corybas trilobus agg</i>	a spider orchid	r
<b>Grasses Sedges Rushes</b>		<b>x</b>
<i>Carex coriacea</i>		vlc
<i>Carex dissita</i>		m
<i>Carex secta</i>	pukio	mvl
<i>Isolepis sp</i>		r
<i>Uncinia uncinata</i>	a hook grass	x
<b>Ferns</b>		<b>x</b>
<i>Blechnum chambersii</i>		o
<i>Blechnum discolor</i>	crown fern	lc



<i>Blechnum fluviatile</i>	terrace hard fern	o
<i>Blechnum minus</i>	swamp kiokio	o
<i>Blechnum novae-zelandiae</i>	kiokio	mvl
<i>Blechnum procerum</i>	beech hard fern	ml
<i>Blechnum vulcanicum</i>		ml
<i>Histiopteris incisa</i>	water fern	vlc
<i>Leptopteris hymenophylloides</i>		r
<i>Leptopteris superba</i>	feather fern	r
<i>Lycopodium volubile</i>	waewaekoukou	o
<i>Polystichum vestitum</i>	prickly shield fern	o
<i>Pteridium esculentum</i>	bracken	mvl
<b>Exotic</b>		<b>x</b>
<i>Rubus fruticosus agg</i>	blackberry	mvl
<i>Ulex europaeus</i>	gorse	r
<b>Birds</b>		<b>x</b>
<i>Anthornis melanura</i>	bellbird/korimako	m
<i>Rhipidura fuliginosa</i>	fantail/piwakawaka	o
<i>Nestor meridionalis</i>	kaka	twice
<i>Petroica macrocephala macrocephala</i>	SI tomtit/miromiro	r

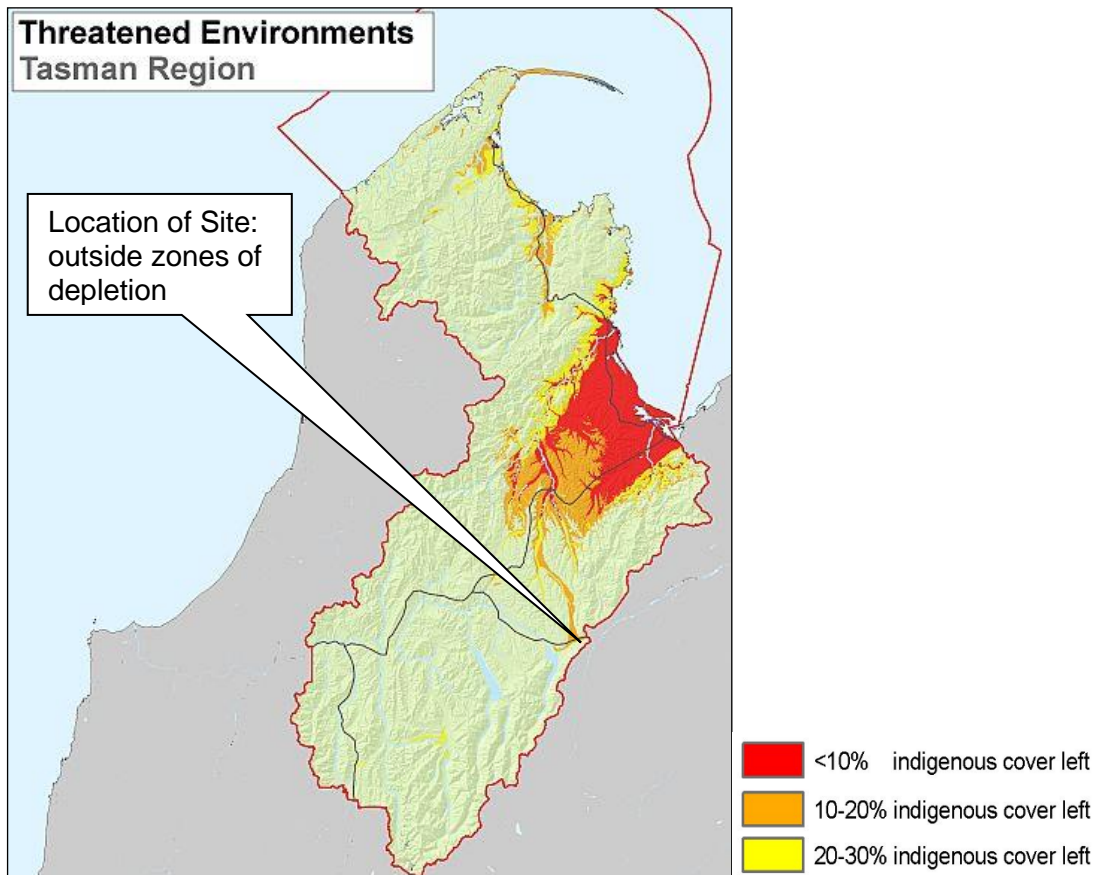


## 4) Land Environments of New Zealand (LENZ)

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](http://www.landcareresearch.co.nz/databases/lenz)





## 5) 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.

<b>National Priorities</b>	<b>Does this Site Qualify?</b>
<b>1</b> 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.	No
<b>2</b> Indigenous vegetation associated with sand dunes and wetlands; ecosystem types that have become uncommon due to human activity	Yes
<b>3</b> Indigenous vegetation associated with 'naturally rare' terrestrial ecosystem types not already covered by priorities 1 and 2 (eg limestone scree, coastal rock stacks)	No
<b>4</b> Habitats of nationally 'threatened' or 'at risk, declining' indigenous species	Yes

Further information can be found at -

[www.biodiversity.govt.nz/pdfs/protecting-our-places-brochure.pdf](http://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?

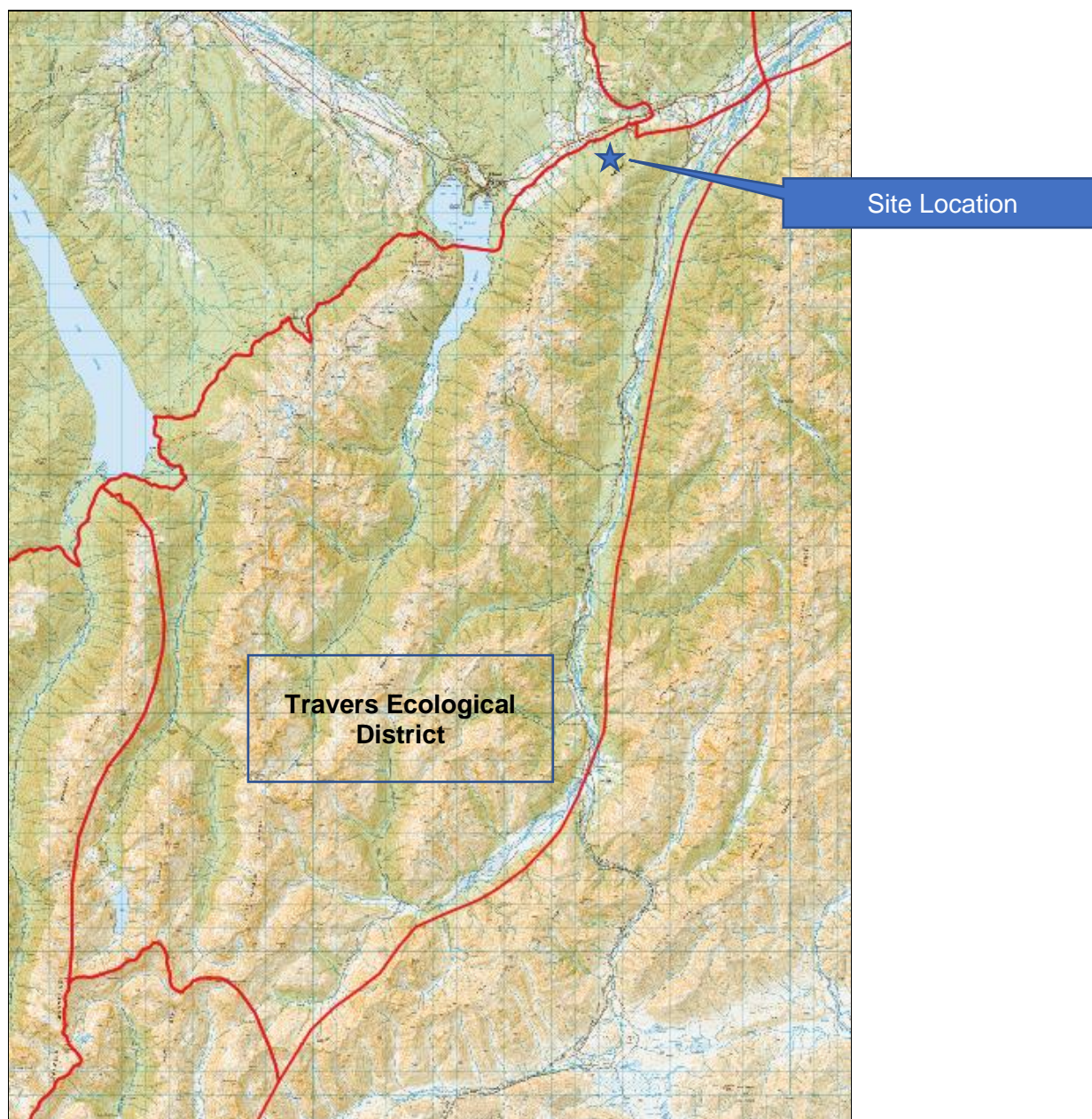
These frameworks have been included in this report to give deeper ecological context to the site. They are simply another means of gauging ecological value. This information is useful in assessing the relative value of sites within Tasman District when prioritising funding assistance. They otherwise 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.



## 6) THE SETTING – TRAVERS ECOLOGICAL DISTRICT

### Location and physical description

This ecological district is inland greywacke mountain land based around the St Arnaud Range. The western half only is within Tasman District. The mountains are steep-sided due to past glaciation but are relatively gentle on top. They are mostly 900-2100m in height and are drained by large river systems into lakes Rotoroa and Rotoiti. Lake Constance is a substantial upland lake in the south of the district and there are many upland tarns. The climate is a mountain one, with high rainfall and substantial winter snow. The soils are strongly leached and podzolised at lower levels and are stony and shallow alpine soils with much rock outcrop and scree at higher levels. All of the land is conservation land. In the north of the district, at Lake Rotoiti, is an important mainland island project, whereby the Department of Conservation is restoring the ecological integrity of the beech forest ecosystem, with spectacular results. It is one of the few places in mainland New Zealand where it is possible to get an insight into the true primeval nature of such forests.





## Ecosystem types originally present

In the past the flat valley floors would have supported tall forests of silver and red beech, with a few matai and kahikatea in places. These valleys would have sported a few small wetlands of both fertile and infertile types, and small frost flat communities. The slopes, except where there was towering rock and running scree, would have been clothed in beech forest: red beech on the colluvial fans, red and silver beech on the mid slopes and mountain beech on the upper slopes. Above the bushline (about 1400m), there was a fringe of subalpine shrubland and extensive tussock grassland, herbfield and fellfield.

## Existing ecosystems

Almost all of the original extent of the former ecosystems still exists. A small amount has been modified by burning, whilst all of the ecosystems have been invaded by exotic browsing and predatory animals and are therefore depleted in ecological condition. The tabulation gives estimates of the proportions of the original ecosystems that remain.

## Degree of protection

Nelson Lakes National Park protects the entire ecological district within Tasman District. The tabulation gives estimates of the original and remaining ecosystems that have formal protection.

INDIGENOUS ECOSYSTEMS - TRAVERS 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	-	-	-	n
Estuarine wetland	-	-	-	-
Fertile lowland swamp and pond	<1	100	100	-
Infertile peat bog	<1	100	100	100
Upland tarn	<1	100	100	100
Lake	1	100	100	100
River, stream and riparian ecosystems	2	100	100	100
Lowland podocarp forest	-	-	-	100
Lowland broadleaved forest	-	-	-	-
Lowland mixed forest	2	99	99	-
Lowland beech forest	45	98	98	100
Upland beech forest	-	-	-	100
Subalpine forest	-	-	-	-
Lowland shrubland	3	100	100	-
Upland/subalpine shrubland	<1	100	100	100
Frost flat communities	20	100	100	100
Tussock grassland	25	100	100	100
Alpine herbfield and fellfield				100



