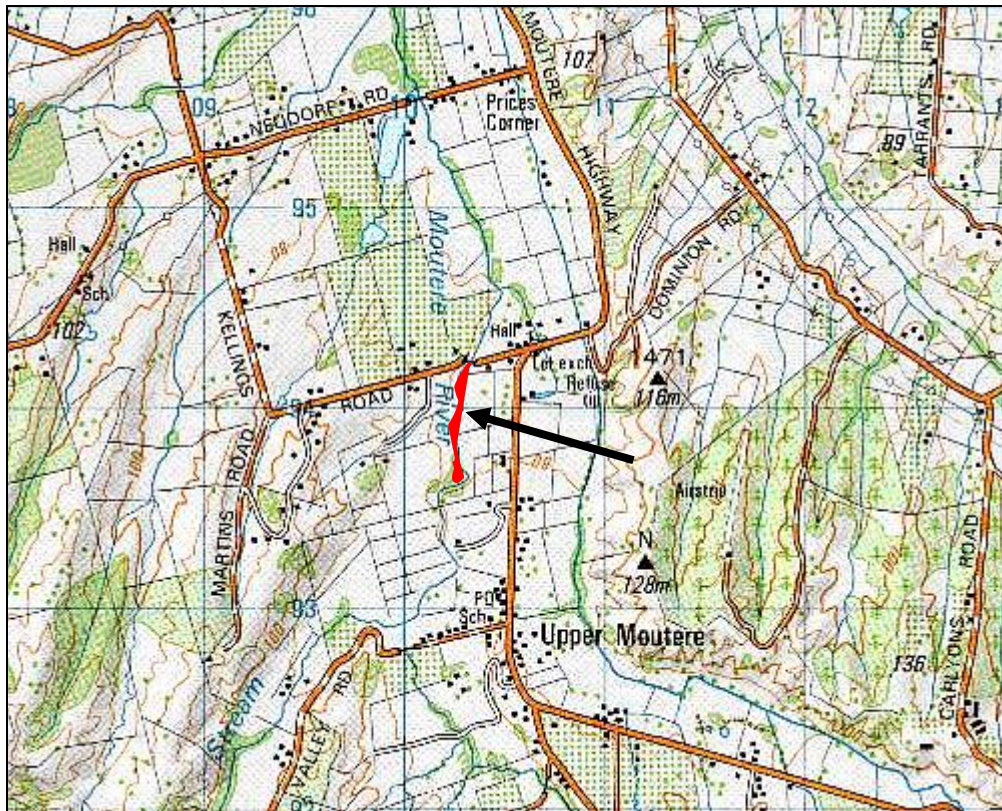


Native Habitats Tasman Site Assessment Report

| | |
|------------------------------|----------------------------|
| Site: | MU 114 |
| Landowners/Occupiers: | Athol Allan & Paul Le Gros |
| Ecological District: | Moutere |
| Grid Ref: | N27 103 941 |
| Surveyed By: | Michael North |
| Date: | 11 February 2009 |
| Survey Time: | 1.5 hr |



THE SETTING – MOUTERE ECOLOGICAL DISTRICT (ED)

Location and Physical Description

The Moutere Ecological District occupies most of the Moutere Depression. It is rolling hill country founded on deeply weathered fluvio-glacial outwash gravels (Moutere Gravels), with a little limestone and granite in the west. The hills are drained by numerous valleys with flat alluvial floors. There is a small amount of coast containing an estuarine shore and a series of bluffs. The climate is sunny and sheltered, with very warm summers and mild winters. Most of the land is in private ownership and is used for pastoral farming, forestry, horticulture and small-scale 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 valley floors supported towering podocarp forests of totara, matai, rimu, miro and kahikatea. On the hills, black beech was dominant at the seaward end of the District, with hard beech prominent further inland, giving way further inland still to red beech with silver beech. In sheltered coastal gullies were pockets of lush broadleaved forest containing tawa, titoki, pukatea, nikau and tree ferns. Along the coastal bluffs was forest of ngaio, titoki, nikau and other broadleaved trees, with totara and black beech. Fringing the estuary would have been a vegetation sequence like that in the neighbouring Motueka Ecological District. Freshwater

wetlands occurred in the coastal valleys and would have included fertile lowland swamps with kahikatea, harakeke, cabbage tree and tussock sedge (*Carex secta*). Rivers and streams, including riparian ecosystems (trees, shrubs, flaxes, toetoe, etc) and some braided river beds, would have made up an appreciable although not large 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 largely a scattering of fragments of beech forest, with some larger areas in the south. There are tiny remnants of coastal bluff forest, lowland broadleaved forest and podocarp forest only, and a few wee freshwater wetlands. The estuary margin is still surprisingly intact, although its fringing vegetation sequence has 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 a coastal bluff forest remnant at Ruby Bay, tawa forest at Eves Valley, podocarp forest remnants near Upper Moutere, several key remnants of beech forest and larger tracts of beech forest in the south. A few tiny wetlands are also protected. The table below gives estimates of how much of the original and remaining ecosystems have formal protection.

| Indigenous Ecosystems – Moutere 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 | — | — | — | — |
| Estuarine wetland | <1 | 30 | ? | ? |
| Fertile lowland swamp and pond | 1 | <5 | <2 | <20 |
| Infertile peat bog | — | — | — | — |
| Upland tarn | — | — | — | — |
| Lake | — | — | — | — |
| River, stream and riparian | 1 | 40 | ? | ? |
| Lowland podocarp forest | 20 | 1 | <1 | 50 |
| Lowland broadleaved forest | 1 | <5 | <5 | 100 |
| Lowland mixed forest | 5 | <5 | <5 | 50 |
| Lowland beech forest | 65 | 5 | 2 | 40 |
| Upland beech forest | 5 | 50 | 40 | 80 |
| Subalpine forest | — | — | — | — |
| Lowland shrubland | <1 | <5 | <1 | <10 |
| Upland/subalpine shrubland | — | — | — | — |
| Frost flat communities | — | — | — | — |
| Tussock grassland | — | — | — | — |
| Alpine herbfield and fellfield | — | — | — | — |

SITE DESCRIPTION

Location, Geology, Hydrology

This <1ha fragmented treeland/forest site lies at 60m asl beside the Moutere River about 1km NW of Upper Moutere. It is largely riparian, occupying the current floodplain as well as a riparian scarp slope that the river has created by cutting into the slopes that adjoin the plain. These slopes are Pliocene Moutere Gravel composed of clay-bound gravels. This material is glacial outwash from the Southern Alps.

Vegetation

GENERAL

The site is composed of eight discrete pockets of largely mature podocarp and beech trees on alluvium, half of which are grazed, and several tiny stands of black beech dominated forest on riparian slopes that are all ungrazed.

COMMUNITIES

1 Lowland totara-(mixed beech/podocarp) treeland on alluvium

Along the true right of the Moutere River are four stands of mature trees dominated by lowland totara, with scattered matai, silver beech and black beech and rare kahikatea and pokaka. One mapou and one rohutu/*Lophomyrtus obcordata* also occur. Old man's beard is locally established with occasional large vines climbing into lower canopies. Three of the stands are no longer grazed but open dry conditions and rank exotic grasses have all but precluded any recent regeneration.

Two stands occur on the flats on the true left of the river, and are currently grazed by horses. These are of mixed composition and age, composed largely of lowland totara and kanuka, with rare black beech, kahikatea, mahoe and pokaka. Two further pockets of treeland occur close to Kelling Rd on the true left, again dominated by lowland totara with occasional matai and black beech.

2 Black beech forest associations on riparian side-slope

Several very small stands of native forest occur along the true left riparian slopes, separated by exotic woody scrub and forest. The smaller tracts are of mixed silver and black beech and kanuka with one cabbage tree visible close to the road. The largest tract commonly also includes kanuka and hawthorn in the canopy, with one silver beech and two young adult lowland totara. Barberry and lowland totara regeneration is common in the understorey, with occasional young mapou, and blackberry locally common on the better-lit weedy margins. Ground cover is meagre with low light and dry conditions, with occasional necklace fern and lowland shield fern. The precipitous riparian margin is draped in curtains of blackvine (*Muehlenbeckia*) and old man's beard.

Botanical Values

COMMUNITIES

The site is a highly fragmented scattering of largely primary treeland and forest with most areas either grazed or with a past history of grazing. Consequently, despite supporting adult beech and podocarps, its values are much reduced by its management history. Taken as a whole however this is an important remnant in the context of the location within the Moutere ED – namely the Moutere River catchment, where forest cover depletion is extreme. This site is one of about 20 alluvial podocarp rich remnants within the Moutere River catchment that total less than 30ha, on floodplain that once supported several thousand hectares of native forest, swamp forest and swamp prior to clearance and drainage. Alluvial podocarp forest has been reduced to well below 1% of its original cover in Moutere ED, so even treeland remnants such as this site are important at ecological district level.

SPECIES

15 native plant species were noted, a low number reflecting the largely grazed treeland nature of the site. No species are rare in the Moutere ED but cabbage tree is very scarce.

Fauna

Of the native forest birds only tui was noted.

Weed and Animal Pests

Old man's beard is the most significant weed at this site, being locally common close to the river, climbing into native tree canopies. Crack willow is scattered between and among the remnants. Locally common hawthorn and rare holly, ivy and elder make up the remaining significant weeds.

Other Threats

Horses grazing under the treelands of the true left of the river have killed or are killing, through ringbarking, a number of lowland totara including two very large trees.

The native blackvine (*Muehlenbeckia australis*) drapes riparian canopies in places and may cause the death of trees by smothering. It thrives on forest disturbance and on forest edge situations, and consequently at sites such as this it can become problematic, despite it being a native plant.

General Condition

Overall the site is in poor condition due to a long history of grazing in most of it, and due to cloaking sheets of old man's beard impacting on vegetation in places.

Landscape/Historic Values

The site is an attractive feature of the local landscape, visible from Kelling Rd where the Moutere River is crossed.

ASSESSMENT OF ECOLOGICAL SIGNIFICANCE

The following criteria are assessed:

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

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

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

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:

The small areas of black and silver beech forest have moderately high representativeness values with weeds yet to impact heavily on vegetation structure and diversity, and high rarity values due to the extreme depletion of such forest in the Moutere ED. These are sufficient values to make this community significant. The remnants are tiny but collectively in association with the treelands are significant.

The lowland totara dominated treelands though poorly representative of the original forest condition, have moderately high rarity value due to the severe depletion of alluvial podocarp forest in the Moutere ED. These values are just sufficient to cross the significance threshold.

Management Issues and Suggestions

The most immediately pressing issue is the destruction of lowland totara trees due to ringbarking by horses. The two pockets of treeland on the true left are in need of fencing if any of the lowland totara in these two stands have a chance of surviving at all (it may well be too late). The other treeland areas are not regenerating, with competitive exotic grassland and dry open conditions in ungrazed ones preventing renewal. The site is in great need of restoration plantings if the treeland areas are to survive at all in the longer term. For restoration plantings the relevant planting list for your area is available from the TDC website under Home> Environments> Land> Restoration Planting Lists>Moutere Downlands - Valleys. The list is fully comprehensive. Any initial plantings, if undertaken, should concentrate on the hardy pioneer species native to the area such as lemonwood, kanuka, mapou, shining coprosma, karamu and kohuhu. These could be planted to not only enhance the survival of existing treeland areas by returning them to forest, but also to link up the treeland areas into a continuous riparian corridor in places. To replace the intervening riparian willows with native forest would however be a major undertaking.

A number of local nurseries (such as Titoki Nurseries in Brightwater) raise a diverse range of locally sourced plants for restoration plantings.

Weed control, in particular old man's beard, is becoming urgent. A number of other notable weeds (listed above) occur in very low numbers and it would be straightforward to eliminate them at present, prior to them becoming heavily established. The larger old man's beard vines require cutting and herbicide pasting, or grubbing out. Where stumps are cut (as close to the ground as possible) they should be painted with 20% glyphosate, or alternatively with 'Vigilant' gel (picloram). This gel herbicide is readily available (it can be purchased by the small bucket, from some hardware outlets eg CRT, which is cheaper than the small bottles but you will need a bottle for application as it has a useful brush nozzle.) With grubbing, the vines will die if the stem base is removed as roots do not resprout.

TDC are establishing a contestable fund for landowner assistance. Details are still being finalised.

TDC also already offers half the cost of fencing streams and gullies from stock to help maintain or restore river health in the district.

To help ensure the longer-term survival and protection of this site, it is suggested that the owners consider covenanting their forest area with QEII. This would ensure that no future owner could destroy the bush or run stock through it, thus undoing any restoration work that may have been done. Such a covenant can be tailored to the owners' requirements and there is no indication that there is any negative impact on land values with such a process. Covenanted sites are far more likely to receive funding assistance with weed control than those that are not.

PHOTO GALLERY



The lower end of the site as seen from Kelling Rd where it crosses the Moutere River with formerly grazed treeland on the left and pockets of forest on the slopes to the right



Lowland totara dominate the treelands with adult and pole trees



Small pockets of beech forest occur with podocarp and broadleaved regeneration a feature



Several lowland totara in this image have been ringbarked by horses, including the mature tree in the background; without fencing and replanting, such remnants are doomed



Old man's beard is well established on this mature kahikatea; its control is one of the highest priorities, should management of this site be undertaken



The site presents a rare opportunity to restore riparian forest with native restoration plantings that could link up the scattered remnants of native trees and shade the Moutere River

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.

Using these guidelines, the site has been divided into the following areas for separate assessment:

- (a) Lowland totara dominated treelands
- (b) Black beech –(silver beech) forest

| Significance Evaluation | | |
|---|----------|--|
| (a) Lowland totara dominated treelands | | |
| | Score | Example/Explanation |
| Primary Criteria | | |
| Representativeness | | |
| 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 eg. beech forest with high apparent herbivore impacts or past high logging impacts on current vegetation structure and diversity |
| Rarity and Distinctiveness | | |
| 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 secondary climax canopy species | 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 |
| Diversity and Pattern | | |
| Indigenous plant communities species or habitats are present with less diversity than is typical for such sites in the Ecological District | L | |
| Secondary Criteria | | |
| Ecological Context (highest score) | M | |
| Connectivity | | |

| Significance Evaluation | | |
|--|--------------|--|
| (a) Lowland totara dominated treelands | | |
| | Score | Example/Explanation |
| The site is separated from other areas of indigenous vegetation but provides an important part of a network of closely lying sites | M | <500m between sites in network |
| Buffering to | | |
| 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. | ML | 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 small size for its vegetation community and Ecological District | L | |
| Other Criterion | | |
| Sustainability (average score) | ML | |
| Physical and proximal characteristics | | |
| Size, shape, buffering and connectivity provide for a moderately poor overall degree of ecological resilience. | ML | Size L Shape L Buffering L Connectivity M |
| Inherent fragility/robustness | | |
| Indigenous communities are neither inherently moderately highly resilient. | MH | The podocarp components are resilient but the minor beech components of the treelands are not due to dieback and regeneration failure in this sector of the Moutere ED |
| Threats (low score = high threat; lowest score taken) | | |
| Ecological impacts of grazing, surrounding land management, weeds and pests* | ML | Grazing ML Surroundings H Weeds MH 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 | M |
| | Rarity | MH |
| | Diversity and Pattern | L |
| Secondary Criteria | Ecological Context | M |
| | Size/Shape | L |
| 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**

| Significance Evaluation | | |
|--|--------------|--|
| (b) Black beech-(silver beech) forest | | |
| | Score | Example/Explanation |
| Primary Criteria | | |
| Representativeness | | |
| The site includes primary vegetation that moderately resembles its original condition. | MH | Vegetation characterised by original canopy species or climax plant species, which has been only moderately impacted by herbivores or direct human intervention eg. forest with past low to moderate impact selective logging or with no more than moderate apparent herbivore impacts on current vegetation structure and diversity |
| Rarity and Distinctiveness | | |
| The site includes a primary community depleted 5% or less of original pre-human cover in the Ecological District, unless in poor condition | H | Hillslope black beech dominated forest is severely depleted in the Moutere ED |
| 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) | M | |
| Connectivity | | |
| The site is separated from other areas of indigenous vegetation but provides an important part of a network of closely lying sites | M | <500m between sites in network |
| Buffering to | | |
| The site is moderately buffered by vegetation | M | vegetation buffers the site effectively around at least ½ of its boundary |
| 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 | | |
| | | |
| 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 L Shape L Buffering M Connectivity M |
| Inherent fragility/robustness | | |

| Significance Evaluation (b) Black beech-(silver beech) forest | | |
|--|-------|---|
| | Score | Example/Explanation |
| Indigenous communities are inherently fragile. | L | Black and silver beech communities are fragile due to dieback and regeneration failure in this sector of the Moutere ED |
| Threats (low score = high threat; lowest score taken) | | |
| Ecological impacts of grazing, surrounding land management, weeds and pests* | M | Grazing H Surroundings H Weeds M 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 | MH |
| | Rarity | H |
| | Diversity and Pattern | ML |
| Secondary Criteria | Ecological Context | M |
| | Size/Shape | L |
| 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>Coprosma lucida</i> | shining coprosma | r |
| <i>Dacrycarpus dacrydioides</i> | kahikatea | o |
| <i>Elaeocarpus hookerianus</i> | pokaka | r |
| <i>Lophomyrtus obcordata</i> | rohutu; NZ myrtle | r |
| <i>Myrsine australis</i> | mapou, red matipo | o |
| <i>Nothofagus menziesii</i> | silver beech | m |
| <i>Nothofagus solandri</i> | black beech | m |
| <i>Podocarpus totara</i> | lowland totara | c |
| <i>Prumnopitys taxifolia</i> | matai | m |
| <i>Pseudopanax arboreus</i> | fivefinger | r |
| <i>Pseudopanax crassifolius</i> | lancewood | r |
| Lianes | | x |
| <i>Muehlenbeckia australis</i> | blackvine | c |
| Dicot Herbs | | x |
| Monocot Herbs | | x |
| Grasses Sedges Rushes | | x |
| Ferns | | x |
| <i>Asplenium bulbiferum</i> | hen & chickens fern | r |
| <i>Asplenium flabellifolium</i> | necklace fern | o |
| <i>Polystichum neozelandicum</i> | lowland shield fern | o |
| Weeds | | x |
| <i>Berberis vulgaris</i> | barberry | lc |
| <i>Clematis vitalba</i> | old man's beard | lc |
| <i>Crataegus monogyna</i> | hawthorn | lc |
| <i>Cytisus scoparius</i> | broom | o |
| <i>Hedera helix</i> | ivy | r |
| <i>Ilex aquifolium</i> | holly | r |
| <i>Salix fragilis</i> | crack willow | x |

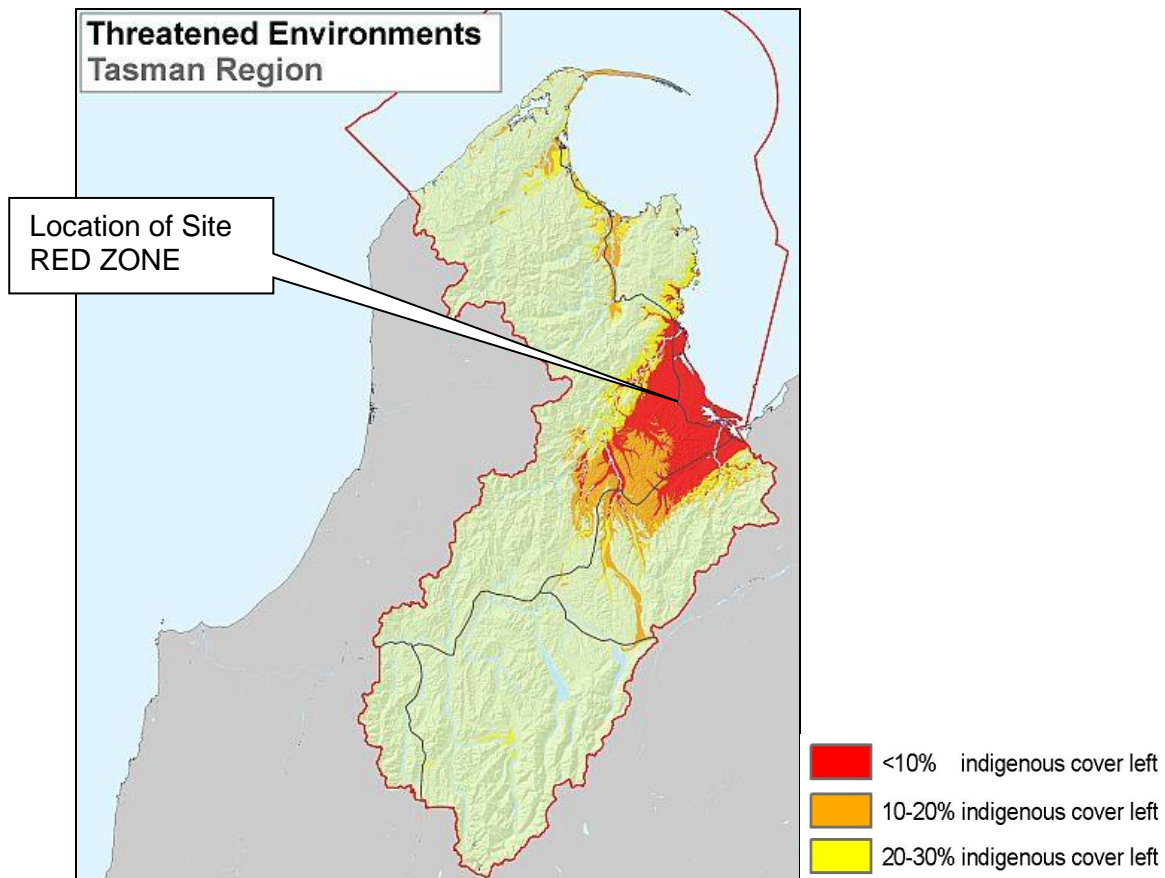
| | | |
|-----------------------|------------|----------|
| <i>Sambucus nigra</i> | elderberry | r |
| Birds | | x |
| tui | tui | x |

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 | No |
| 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 threatened 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.

Site Map

