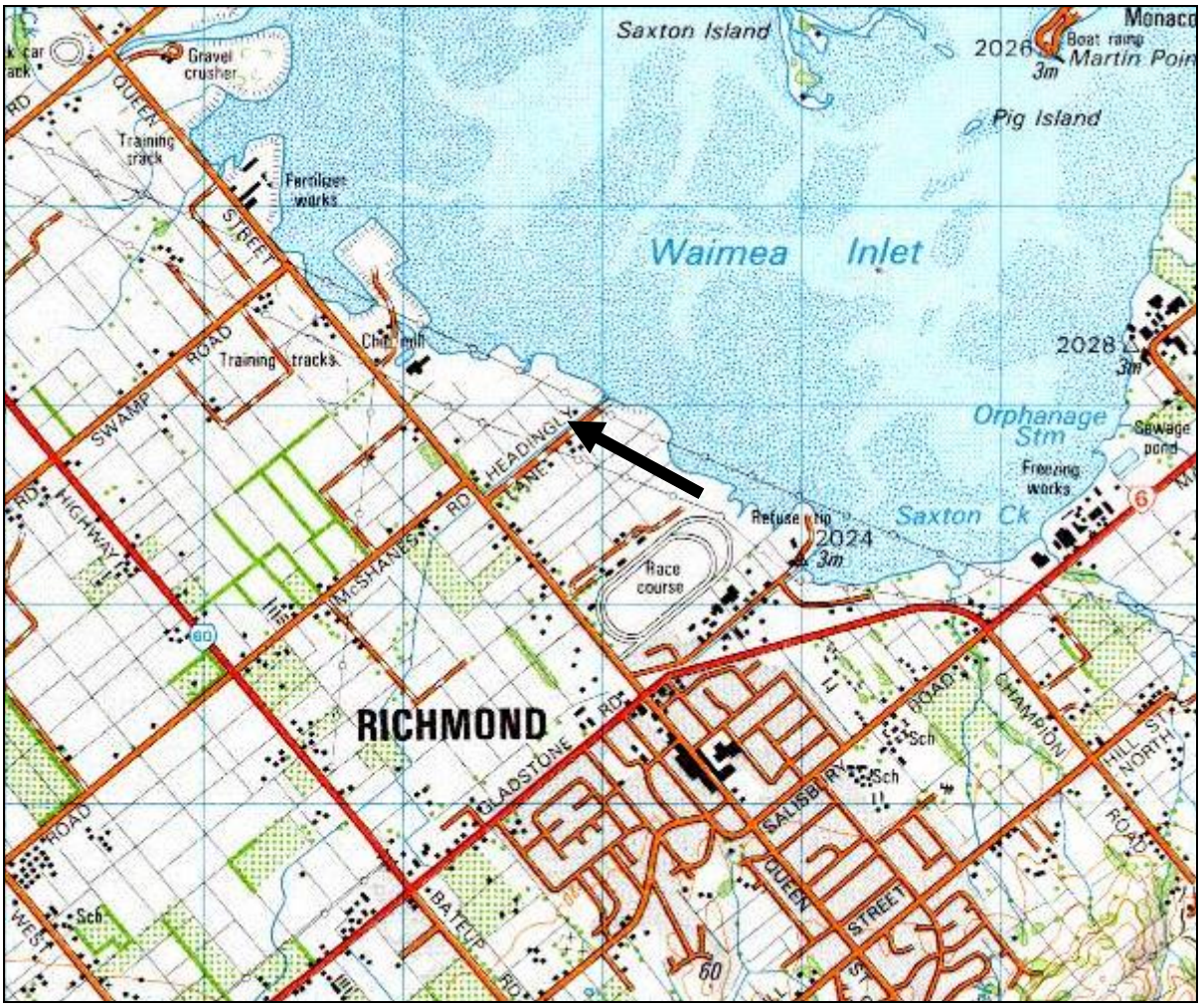
Native Habitats Tasman
Ecological Assessment Report

Site:	MO 88 Borck Creek
Landowners/Occupiers:	TDC

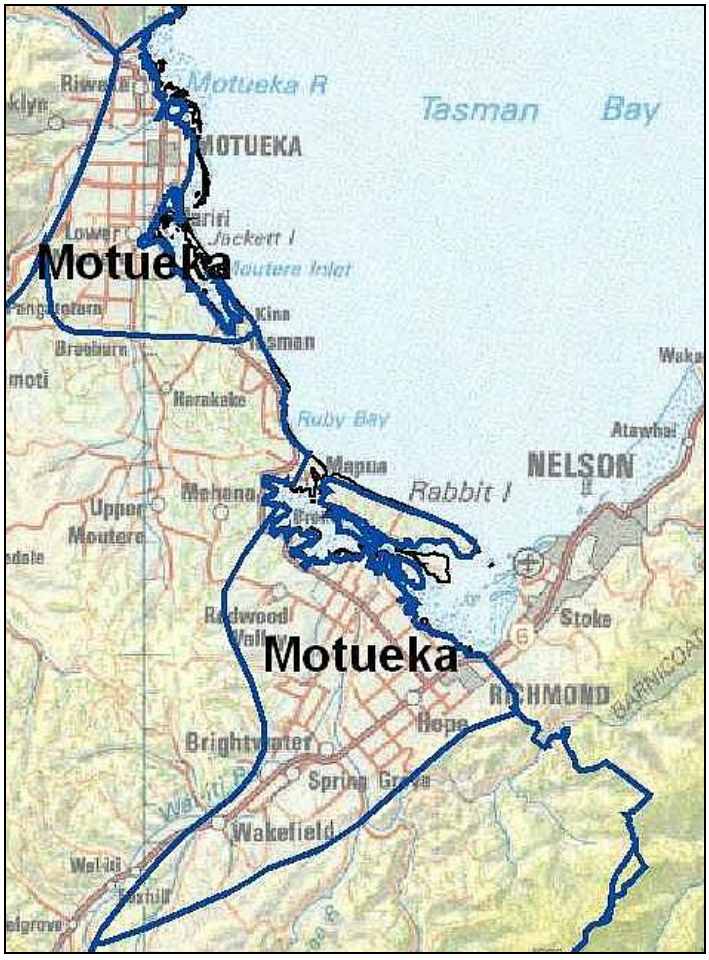
Ecological District:	Motueka
Grid Ref:	E2524820 N5986905
Surveyed By:	Mike Hickford & inanga survey volunteers
Date:	16 April 2012
Survey Time:	½ hr



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

The site lies beside Bork Creek, 560-585m downstream from Lower Queen St, in the SE corner of the Waimea Inlet. More specifically it is 2-25m upstream of a lower driveway bridge that crosses it. The site is only on true left bank.

Vegetation or Habitat

The site is a relatively large spawning area (60m^2) for inanga in the Waimea Inlet, occurring in tall fescue and creeping bent with high densities (~700 eggs/10cm^2). No eggs were found in the *Carex secta* at the water's edge, yet they were present in the adjacent tall fescue.

Weed and Animal Pests

The weed species that dominate (tall fescue and creeping bent) are the preferred habitat for egg laying.

Other Threats

Sea level rise associated with climate change will force spawning farther up stream into possibly unsuitable habitat in the shorter term. Longer term, unless district planning allows for a coastal retreat, a spawning site on this creek will be lost.

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 of significance is tabled in the Appendix.
This site is significant for the following reasons:
With high rarity values the site is significant.

Management Issues and Suggestions

There are no issues that were noted to be of concern. Obviously if inanga are to continue to use this site, it will be important to maintain or improve water quality, and to avoid any future shading out of the existing habitat.

View from bottom of spawning zone looking upstream

View from top of spawning zone looking downstream

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.

The above does not apply if such adjoining vegetation forms only a small part of the total site, or if such vegetation forms a critical buffer to the core area.

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.

Note that the secondary and additional criteria cannot feasibly be scored as the habitat comprises weeds, and the fauna are highly mobile over their life cycle.

Significance Evaluation		
	Score	**Example/Explanation**
Primary Criteria		
Representativeness		
	L	
Rarity and Distinctiveness		
An important breeding, roosting or foraging site of at least ecological district importance for an indigenous animal species	H	This is the largest known inanga spawning site within the Motueka ED (survey incomplete)
Diversity and Pattern		
	L	
Secondary Criteria		
Ecological Context (highest score)		
Connectivity		
	N/A	
Buffering to		
	N/A	
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.	N/A	
Size and Shape		
	N/A	
Other Criterion		
Sustainability (average score)		
Physical and proximal characteristics		

Significance Evaluation		
	Score	**Example/Explanation**
Size, shape, buffering and connectivity provide for a ***** overall degree of ecological resilience.	N/A	Size Shape Buffering Connectivity
Inherent fragility/robustness		
Indigenous communities are neither inherently resilient nor fragile.	N/A	
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 (weeds constitute much of the habitat) 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	L H L
Secondary Criteria	Ecological Context Size/Shape	
Additional Criteria	Sustainability	

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.

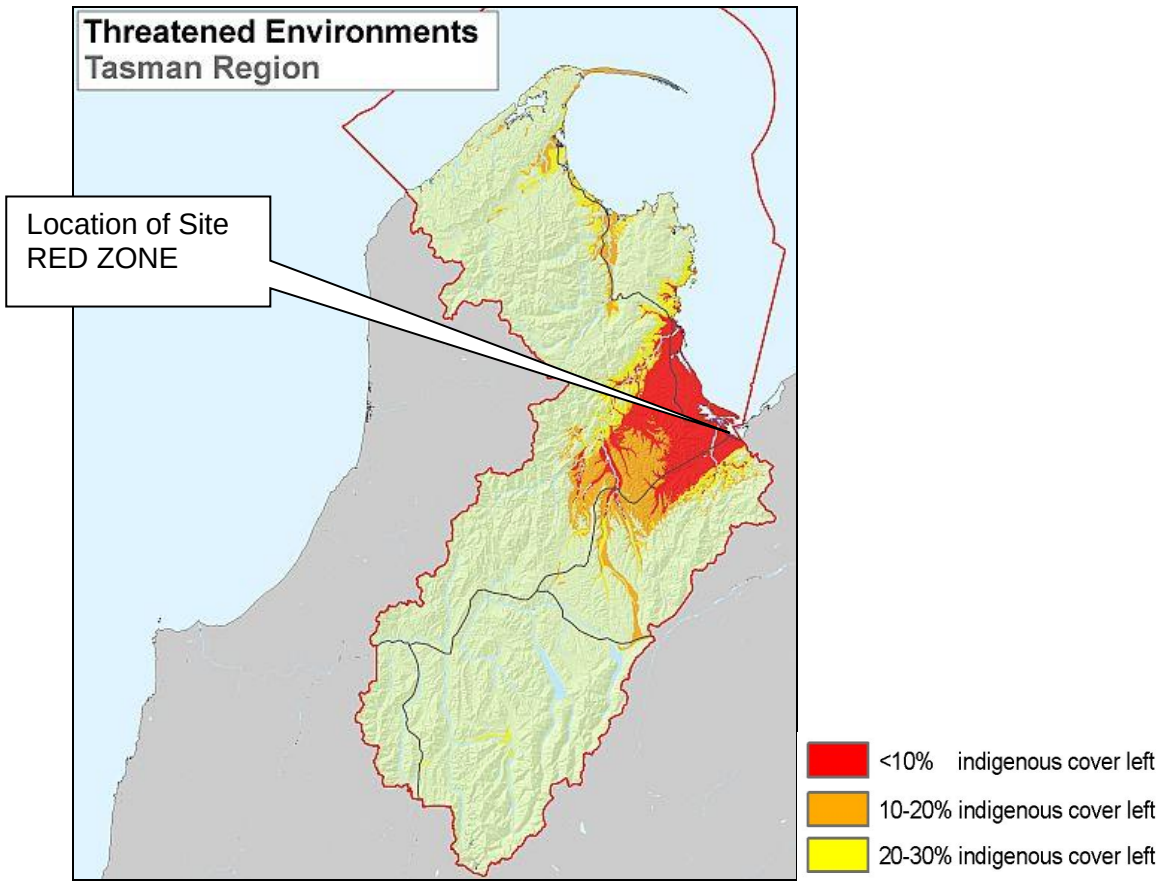
Primary Criteria		Secondary Criteria	
Any of the three primary criteria with a score at least as high as listed		Any of the two secondary criteria with a score at least as high as listed	
		Plus	
→	H		—
	MH x 2		—
	MH + M		—
	MH	+	MH
	M x 2	+	H
	M x 2	+	MH x 2
	M	+	H + MH

H = High MH = Medium-High M = Medium

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

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 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 indigeneous 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.


www.topofthesouthmaps.co.nz
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Borck Creek MO 88
Metres
27 April 2012