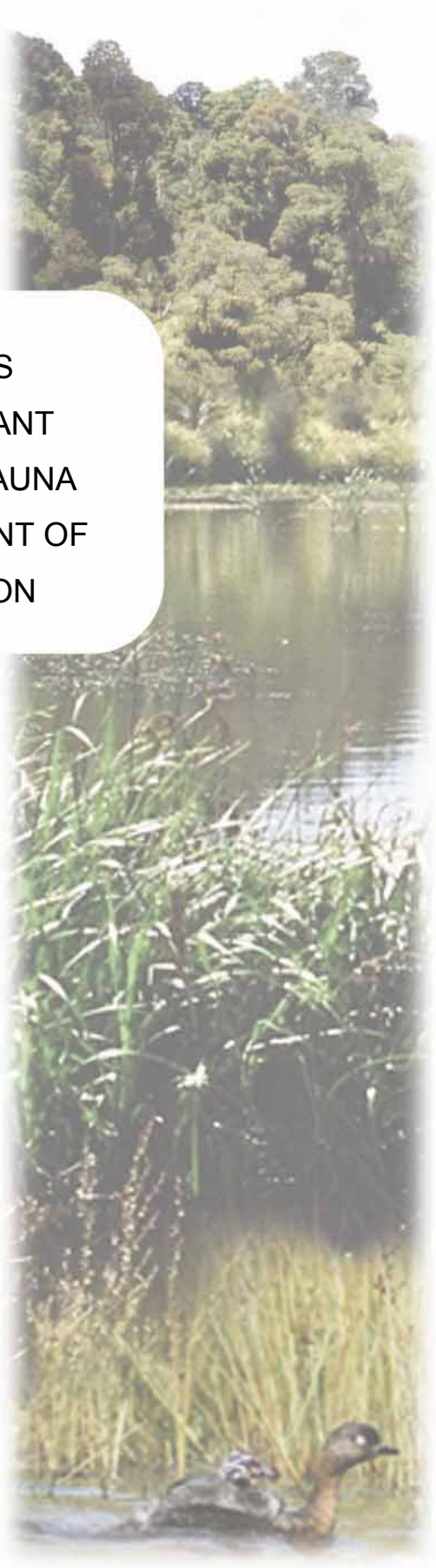
SIGNIFICANT INDIGENOUS VEGETATION AND SIGNIFICANT HABITATS OF INDIGENOUS FAUNA IN THE COASTAL ENVIRONMENT OF THE BAY OF PLENTY REGION



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CONTENTS

APPENDICES

LIST OF FIGURES

LIST OF TABLES

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1. INTRODUCTION

Environment Bay of Plenty commissioned Wildland Consultants to review the location, extent and site-specific information on significant indigenous vegetation and significant habitats of indigenous fauna within the Bay of Plenty coastal environment. This information will be used as the basis for a plan change to update the Bay of Plenty Regional Coastal Environment Plan (RCEP). The RCEP was developed in the 1990s and became operative in 2003. As it is a RCEP, and is not limited to the coastal marine area[1], the objectives, policies, and methods apply to coastal environment but the rules apply only to the coastal marine area. The plan includes a set of A3 maps that show zones and various values and uses.

A mandatory review of the plan must be initiated by the 10th anniversary of the date the plan became operative (RMA Section 79(2)), i.e. by 2013. However Environment Bay of Plenty has decided that, due to the age of the ecological information on which the plan is based, a plan change should be undertaken to update the maps.

The Resource Management Act requires that the council must provide for the protection of significant indigenous vegetation and significant habitats of indigenous fauna (Section 6(c)). This requirement has been implemented through Chapter 6 of the RCEP - Significant Areas of Flora and Fauna - and through mapping of significant sites, based on the following documents:

- 'Significant Indigenous Vegetation of the Bay of Plenty Coastal Zone' (Beadel 1994a) ;
- Reports on marshbird habitats in Tauranga and Ohiwa Harbours (Owen 1993 and 1994a).

Three different zones have been delineated:

- Coastal Habitat Preservation Zone in the coastal marine area (CHPZ); (sites of international, national or regional significance below MHWS in Beadel (1994a) and sites with 'significant numbers of at risk marshbird species' from Owen (1993 and 1994a).
- Sites of District or Local Significances (in the coastal marine area) (SSCMA); (sites of district or local significance in Beadel (1994a) and sites with'reasonable numbers' of marshbirds from Owen (1993 and 1994a).
- Sites of Significance (on land) (SSL) (sites of any significance level above MHWS from Beadel (1994a).

Environment Bay of Plenty has decided that these zones, and associated provisions in the RCEP, are to be reviewed, for the following reasons:

[1] 'Coastal marine area' is defined in the Resource Management Act 1991.

- The reports the above zones are based on are over ten years old. Over that time, there have been changes to the condition and extent of these sites and the understanding of what constitutes a 'significant' site.

- Proposed Change No. 1 to the Bay of Plenty Regional Policy Statement (Heritage Criteria) includes new criteria for determining the significance of indigenous vegetation and habitats of indigenous fauna.

- The Owen (1993 and 1994a) reports were limited in their scope, in that they only covered surveyed marshbird habitats in Ohiwa and Tauranga Harbours. One of the aims of this project is to provide region-wide coverage and to include habitats of all types of indigenous birds (and other biota).

- Lastly, the council has recently acquired additional responsibilities, by way of an amendment to Section 30 of the RMA (August 2003), to maintain indigenous biodiversity:

  Section 30(ga) of the Resource Management Act states:

  > *'Every regional council shall have the following functions for the purpose of giving effect to this Act in its region:*
  > *[(ga) the establishment, implementation, and review of objectives, policies, and methods for maintaining indigenous biological diversity]'*

Accordingly, the council instigated a review of the RCEP, which the outputs from this project brief are designed to achieve.

This report presents information on sites of national, regional and local significance within the Bay of Plenty coastal environment in the form of site data sheets, each of which relates to a mapped area within an accompanying GIS data layer. Sites were assessed using the Bay of Plenty Regional Policy Statement Heritage Criteria.

2. PROJECT OBJECTIVES

The objectives of the project were as follows:

- To review the location, extent and site specific information of the areas of significant indigenous vegetation and significant habitats of indigenous fauna in the RCEP.

- To review and where necessary update the site-specific information for the areas in the RCEP.

- To eliminate any sites or parts of sites in the RCEP which are no longer significant.

- To identify, determine level of significance and write up site-specific information for any other areas of significant indigenous vegetation and significant habitats of

indigenous fauna in the coastal environment that are not already included in the RCEP.

- In undertaking the above, apply Set 3 of Appendix F, Regional Policy Statement Change Number 1, criteria for assessing heritage values and places in the Bay of Plenty Region.

- To review Chapter Six of the RCEP to identify and discuss any deficiencies in the provisions for the protection of significant indigenous vegetation and significant habitats of indigenous fauna[1].

3. METHODS

3.1 Study area

The study area comprises the 'coastal environment': *'all coastal marine areas, all offshore islands, and the area of land one kilometre inland from mean high water springs, of the Bay of Plenty Region'*.

Mean High Water Springs, as depicted on the 1:50,000 scale New Zealand topographical 260 series map sheets, was used as the baseline to delineate the inland boundary of the study area[2] (see Figure 1). Where the inland boundary bisects a natural area (e.g. a forest tract or freshwater wetland extending further inland than 1 km, only that part of the natural area in the coastal environment was mapped. Where this is the case, it has been recognised in the site name, e.g. Houpoto Swamp (Part), as well as in the supporting text. There are two situations in which parts of sites beyond the 1 km limit are included the study area:

- where very small, narrow sections of sites extend further than 1 km from the coast; and

- the internal parts of large islands (e.g. Matakana Island).

3.2 Collation of existing information

Primary resources for the identification and mapping of significant sites were:

- the 2003 RDAM (Regional Digital Aerial Mosaic), based on aerial photography flown in 2002-2003,

- digital layers of the existing CHPZ, SSL, and SSCMA zones from the RCEP (and the reports which underpin them);

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[1] The review of Chapter Six is presented in a separate report by Wildland Consultants.
[2] Where sites dissect the MHWS, the location of MHWS was given further consideration.

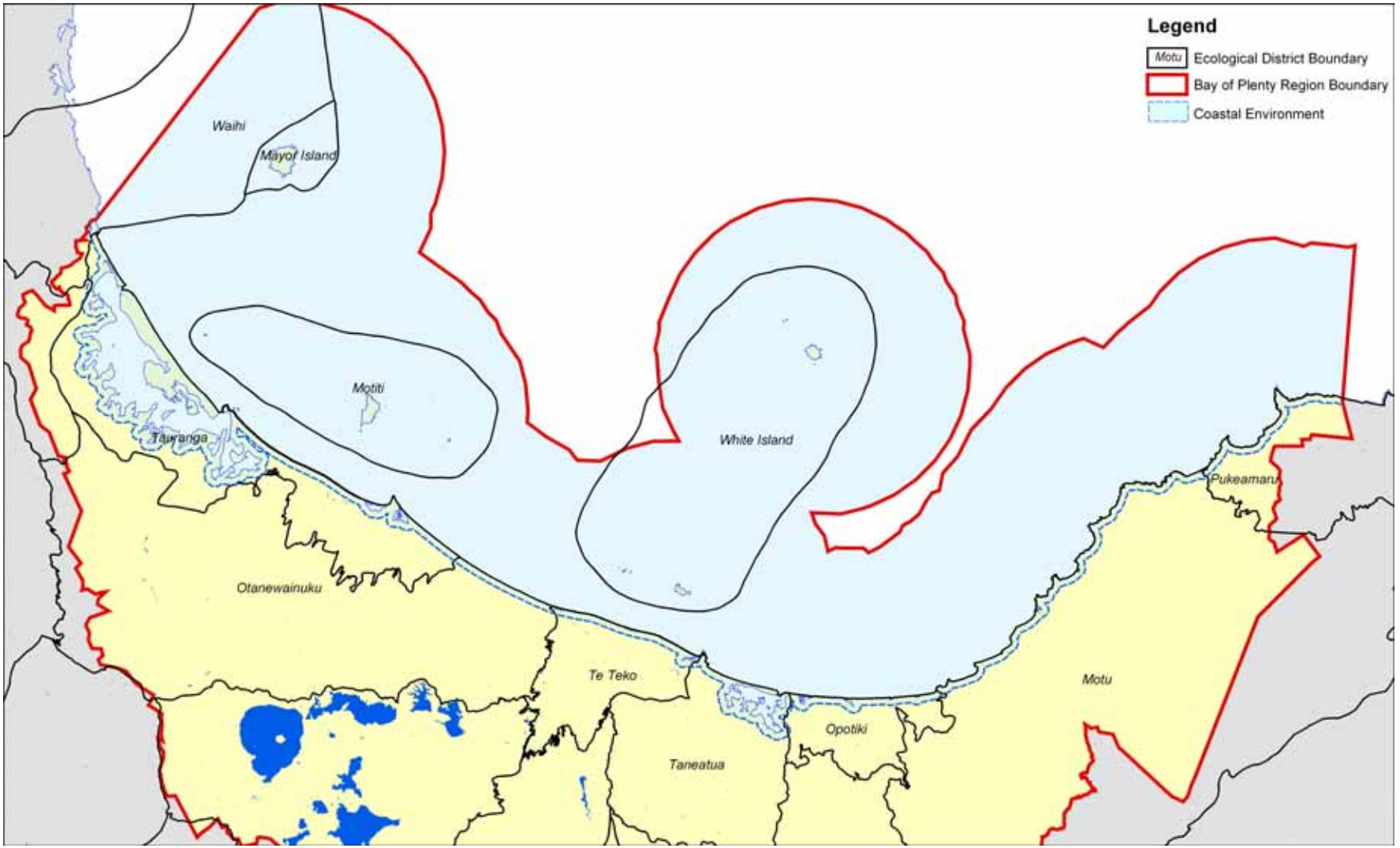


Figure 1: Ecological Districts of the coastal environment of the Bay of Plenty Region (McEwen 1987).

- natural heritage reports (and digital data layers) commissioned by various local body agencies;

- Protected Natural Areas Programme (PNAP) survey reports and related digital layers;

- stand-alone ecological reports on particular areas.

Table 1 summarises key references for each ecological district which have been used to compile this report, illustrating the types and relative ages of biodiversity information available on natural areas in the Bay of Plenty coastal environment.

In addition to obtaining information from published and unpublished reports, key people within the Department of Conservation (DOC) and Ornithological Society of New Zealand (OSNZ) were consulted about bird distribution and habitat use, and any other information which they could provide on flora and fauna.

3.3 Field survey 2006

Based on gaps in information (e.g. vegetation composition) or uncertainities regarding site boundaries, sites requiring field work were identified. The purpose of the field work undertaken during this project was to verify site boundaries and, in some cases, to gather new information in order to assist with significance assessments. New significant sites or new areas additional to existing significant sites were mapped and described according to field information gathered. Levels of relative priority were specified in the contract, to provide guidance in targeting field work to best use limited resources (see Tables 2, 3, and 4).

Field work was carried out during August, September, and October 2006, and extended from Orokawa in the western Bay of Plenty to Whangaparaoa at the eastern end of the region. Boundaries of eight sites on Matakana Island were checked from the air. Between 15 and 60 minutes was spent at each site identified for field checking (89 in total, see Appendix 5), assessing the following:

- the extent of and quality of indigenous vegetation;

- position of mean high water springs (based on indigenous vegetation cover, cf. Beadel *et al*. 1997);

- any condition/pressure variables;

- where possible, noting any fauna observations, however most fauna information was obtained from DOC, OSNZ or previous surveys by Wildland Consultants, rather than during the current field work.

Information collected during the field survey was incorporated into each site data sheet and used for the assessment of ecological significance.

Table 1: Key references on indigenous biodiversity for the coastal environment of the Bay of Plenty Region.

Ecological District	Key references	Agency	Notes
All Ecological Districts	Beadel 1994a	Environment Bay of Plenty	'Significant indigenous vegetation of the Bay of Plenty coastal zone'; field work in 1992.
Waihi	Humphreys and Tyler 1995	Department of Conservation	Protected Natural Areas Programme (PNAP) survey report; field work in 1987, 1988 and 1989.
Mayor Island	Bay of Plenty Conservancy files; Shaw and Hunt 1996	Department of Conservation	Various documents and file notes related to recent (1996 – 2006) monitoring and ecological restoration work on Tuhua.
Tauranga	Wildland Consultants Ltd 2005j	Tauranga City Council	'State of the Environment' monitoring 2000, 2002, and 2005.
	Owen 1993	Department of Conservation	Marshbird survey of Tauranga Harbour; field work in 1991 and 1992.
	OSNZ 2006	Ornithological Society of New Zealand	Classified summarised notes (Bay of Plenty); regular coastal bird observations from 2003 to 2006.
	Beadel and Shaw 2000b	Environment Bay of Plenty	Category 1 Natural Heritage Sites – Tauranga Ecological District.
Motiti	Various, incl. Beadel 1994a		
Otanewainuku	Beadel In press	Department of Conservation	PNAP survey report; field work in 1994.
White Island	Various, incl. Beadel 1994a		
Te Teko	Beadel *et al.* 2003	Department of Conservation	PNAP survey report; field work in 1997 and 2003.
	Beadel *et al.* 1996b	Whakatane District Council	Evaluation of Natural Heritage sites in Whakatane District.
Taneatua	Owen 1994a	Department of Conservation	Marshbird survey of Ohiwa Harbour; field work in 1991 and 1992.
	Beadel *et al.* 1999a	Department of Conservation	PNAP survey report; field work in 1996.
Opotiki	Wildland Consultants 1999a	Opotiki District Council	Natural Heritage of Opotiki District; field work in 1999.
	Walls 1998	Department of Conservation	Ecological survey of the Opotiki ED coastal zone; field work in 1990.
	Beadel *et al.* 1999b	Environment Bay of Plenty	Category 1 Natural Heritage Sites – Opotiki District.
Motu	Clarkson *et al.* 1986	Department of Conservation	PNAP survey report; field work in 1983 and 1984.
	Wildland Consultants 1999a	Opotiki District Council	As above, but largely based on Clarkson *et al.* 1986, with field checking in 1999.
Pukeamaru	Regnier *et al.* 1988	Department of Conservation	PNAP survey report; field work in 1984 and 1985.
	Wildland Consultants 1999a	Opotiki District Council	As above, but largely based on Regnier *et al.* 1988, with field checking in 1999.

Table 2: Relative priorities for field survey of indigenous vegetation in the 2006 evaluation of vegetation in the coastal zone of the Bay of Plenty Region.

Vegetation Type	Method and Accuracy	Relative Priority
Dune vegetation	Desktop where vegetation is within 'public' title (e.g. DOC, district/city council). Field check if in private title where necessary. Need to align with private property boundaries where appropriate.	Med
Lowland and coastal forest	Desktop. Field checking, where necessary, for areas where there have been changes and there is no or little existing information (since 1994 report).	Low
Mangroves	Desktop. Identify all areas of mangroves. Within those areas, identify any discrete areas that should be protected i.e. should be left untouched.	Not required
Wetlands	Desktop. Field checking, where necessary, for areas with little or no existing information.	High
Sea grass	Desktop only using existing mapping.	Not required
Miscellaneous (e.g. scrub and shrubland, cliffs, etc)	Desktop. Field checking where necessary. Includes any other vegetation types not specially covered above.	Low

Table 3: Priorities for field survey of threatened indigenous bird sites in the 2006 evaluation of vegetation in the coastal zone of the Bay of Plenty Region.

Methods	Relative Priority
Identify nesting, roost, and feeding sites that are important for the sustainability of a species and/or any obviously discrete areas (e.g. feeding grounds). A high degree of accuracy is not critical unless the sites are on private land (i.e. not DOC, city or district council).	Field checking is to only be undertaken where necessary e.g. where there is no or little information about a site.
Identify habitat that may be important for providing protection for species.	Low priority (if budget allows)

Table 4: Priorities for field survey of other threatened fauna sites in the 2006 evaluation of vegetation in the coastal zone of the Bay of Plenty Region.

Methods	Priority
Establish/identify if there are further sites that contribute to the protection of other fauna species through literature review and consultation with key DOC staff. (Note: It is likely that the areas of indigenous vegetation will inherently capture a large number of the areas that might be significant habitats for fauna other than birds.)	Low to medium priority, and only if the project budget allows.

3.4 Criteria for the evaluation of ecological significance

Two sets of criteria have been used to assess each site:

- Set 3 Appendix F, Bay of Plenty Regional Policy Statement Change Number 1 contains heritage criteria to assess significant indigenous vegetation and significant habitats of indigenous fauna (Environment Bay of Plenty 2005a). A set of guidelines was developed to assist with assessing the degree to which each criterion is met. These were developed in accordance with the 'User Guide' for these criteria (Environment Bay of Plenty 2005b) (see Appendix 1).

- The relative significance of each site (i.e. whether nationally, regionally or locally significant) was assessed using criteria presented in Appendix 2, which were adapted from Environment Waikato (2002) and have been used for other region-wide Bay of Plenty significance assessments (e.g. Wildland Consultants 2005b). Each site was assessed against national significance criteria, then regional criteria, and finally local criteria. In general, if a site scored 'yes' for any one of the higher criteria it was assigned that level of significance. Some discretion was used by the authors, however, usually in cases of older information.

3.5 Threat classifications

A New Zealand 2002 classification system was developed in New Zealand to list species according to their threat of extinction (Molloy *et al.* 2002) and the first threat classification lists were published shortly afterwards (Hitchmough 2002). Figure 2 depicts the different categories within the system, which has been used throughout this report, always with the rankings capitialised.

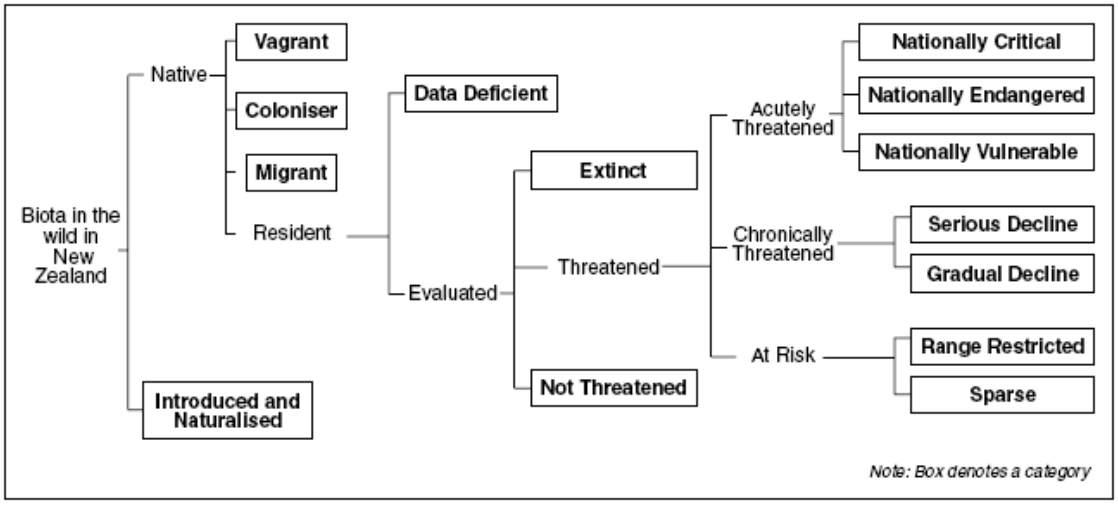


Figure 2: Structure of the New Zealand threat classification system (Molloy *et al.* 2002).

Threat classifications for particular species groups are reviewed every few years by panels of experts. At present, updated threat classification lists have been produced for two taxonomic groups: vascular plants (de Lange *et al.* 2004) and birds (Hitchmough In press). Therefore threat classifications used in this report follow de Lange *et al.* (2004) for plants, Hitchmough (In press) for birds, and Hitchmough (2002) for all other taxonomic groups. Changes in threat classification can affect the relative significance of natural areas, as for example, northern New Zealand dotterel was listed as 'At Risk, Sparse' in Hitchmough (2002), while in Hitchmough (In press) the threat classification has been upgraded to 'Acutely Threatened, Nationally Vulnerable'. Under some criteria, natural areas will rank more highly if they support acutely threatened species.

3.6 Significant vegetation and habitat zone (SVHZ)

Existing information from the key biodiversity references for the Bay of Plenty Region was collated and followed by rapid field inspections of 89 sites across the region (see Appendix 5 for a list of sites surveyed). A 'Significant Vegetation and Habitat Zone' (SVHZ) was delineated, based on 214 individual sites with a total extent of 35,048 ha. Each site in this zone has been mapped and described.

The SVHZ digital layer was created using ESRI ArcGIS8.3, digitised at a scale of no greater than 1:3000 (in many cases at a smaller scale). Data about each site is presented in site data sheets within this document, and a subset of these data area also stored in the attribute table of the digital layer (Table 5).

Table 5: Attributes of digital data layer for the Significant vegetation and habitat zone (SVHZ).

Attribute name	Explanation
Site number (SITE_NO)	SVHZ-1 to SVHZ-214, generally numbered west to east.
Site name (SITE_NAME)	Reflects local geographic name, reserve name, topographic feature or some aspect of the fauna/vegetation of the site.
Ecological District (ECOLDIST)	One (or more) of eleven EDs in the Bay of Plenty Region.
Territorial Local Authority (TLA)	One (or more) or the four District/City Councils within whose area the site falls.
Site Area (AREA_HA)	Size of site in hectares.
Significance Level (SIG_LEVEL)	National, Regional or Local (see Appendix 2).
Digitising Scale (DIG_SCALE)	Scale at which the site was digitised, i.e. 1:3000.
Base map (BASEMAP)	RDAM 2003
MHWS	Whether the site is 'all below', 'all above' or 'part above, part below' the level of mean high water springs. Sites that straddle the MHWS line have a separate layer relating to them which indicates where the MHWS line is located (see metadata for MHWS in SVHZ).
X coordinate (X_COORD)	New Zealand Map Grid X coordinate.
Y coordinate (Y_COORD)	New Zealand Map Grid Y coordinate.
Minimum altitude (MINELEV)	The lowest altitude reached by the site in metres above sea level. These were calculated as intercepts of the NZ 260 series topographical map contour lines which are at 20 metre spacings, and do not extend below 0 m asl.
Maximum altitude (MAXELEV)	As above, except highest altitude.

Site data sheets within this document are arranged by ecological district (ED), beginning with a summary of the flora and fauna present within each ED, and a table of 'threatened or notable species'. Within each section, sites are ordered by SVHZ site number, which generally increases from west to east (i.e. SVHZ-1 is in the westernmost part of the study area). Site location diagrams are presented in the site data sheets. These are indicative of location only and generally show the site to be slightly larger than reality.

The Bay of Plenty Region includes all or parts of eleven Ecological Districts (refer to Figure 1). In the 1980s New Zealand was divided into 268 ecological districts based on topographical, geological, climatic, soil and biological features. Each ecological district comprises a distinctive combination of these features. Ecological districts are grouped together into a series of 85 ecological regions on the basis of shared general ecological and geological characteristics (McEwen 1987). The ED is the basic unit within which the representativeness of remaining habitats is considered.

3.7 Key ecological zones (KEZ) within the Tauranga Harbour

Given the current criteria for ranking sites in terms of their relative ecological significance (see Appendix 2), the whole of Tauranga Harbour would rank as 'nationally significant'. Four Key Ecological Zones (KEZ) within the Tauranga Harbour were identified in order to recognise representative zones of habitat within this very large and diverse site (Fig. 3). A digital layer of these sites has been provided to Environment Bay of Plenty. Each of the KEZs comprises one or more sites from the significant vegetation and habitat zone, which are described in detail later in this report. A list of the SVHZ sites within each KEZ is in Table 6.

The Key Ecological Zone approach was developed in order to be able to separate out the most important areas for indigenous vegetation and indigenous avifauna, including some of the best examples of saltmarshes, mangroves and seagrass beds, from an otherwise very large, composite site. This is a suggested approach, which may be a useful planning tool for the large harbour/estuarine ecosystems of the Bay of Plenty.

Table 6: SVHZ sites within each Key Ecological Zone of the Tauranga Harbour

Key Ecological Zone	SVHZ sites
North Tauranga Harbour KEZ	SVHZ-5 Athenree
	SVHZ-9 North Tauranga Harbour
	SVHZ-10 Yellow Point Sandbank
Mid Tauranga Harbour KEZ	SVHZ-16 Egg Island Sandbank
	SVHZ-25 Matahui Point Intertidal Flats
	SVHZ-29 Te Hopai Island
	SVHZ-34 Mid Tauranga Harbour
	SVHZ-77 Tirohanga Mangroves
	SVHZ-78 Blue Gum Bay 1
	SVHZ-79 Blue Gum Bay 2 (part in KEZ)
Motungaio KEZ	SVHZ-83 Tahunamanu Island
	SVHZ-84 Opureora Spit
	SVHZ-86 Opureora Islet
	SVHZ-87 Motungaio Island
	SVHZ-89 Otapu Bay
	SVHZ-90 Rangiwaea Island Foreshore (part in KEZ)
	SVHZ-91 Motutangaroa Isle Foreshore (part in KEZ)
	SVHZ-92 Rangiwaea Island Estuary (part in KEZ)
	SVHZ-94 Tauranga Harbour at Motungaio Island
Waipu Bay KEZ	SVHZ-67 Waipu Bay Intertidal Flats
	SVHZ-68 Waipu Bay Margins

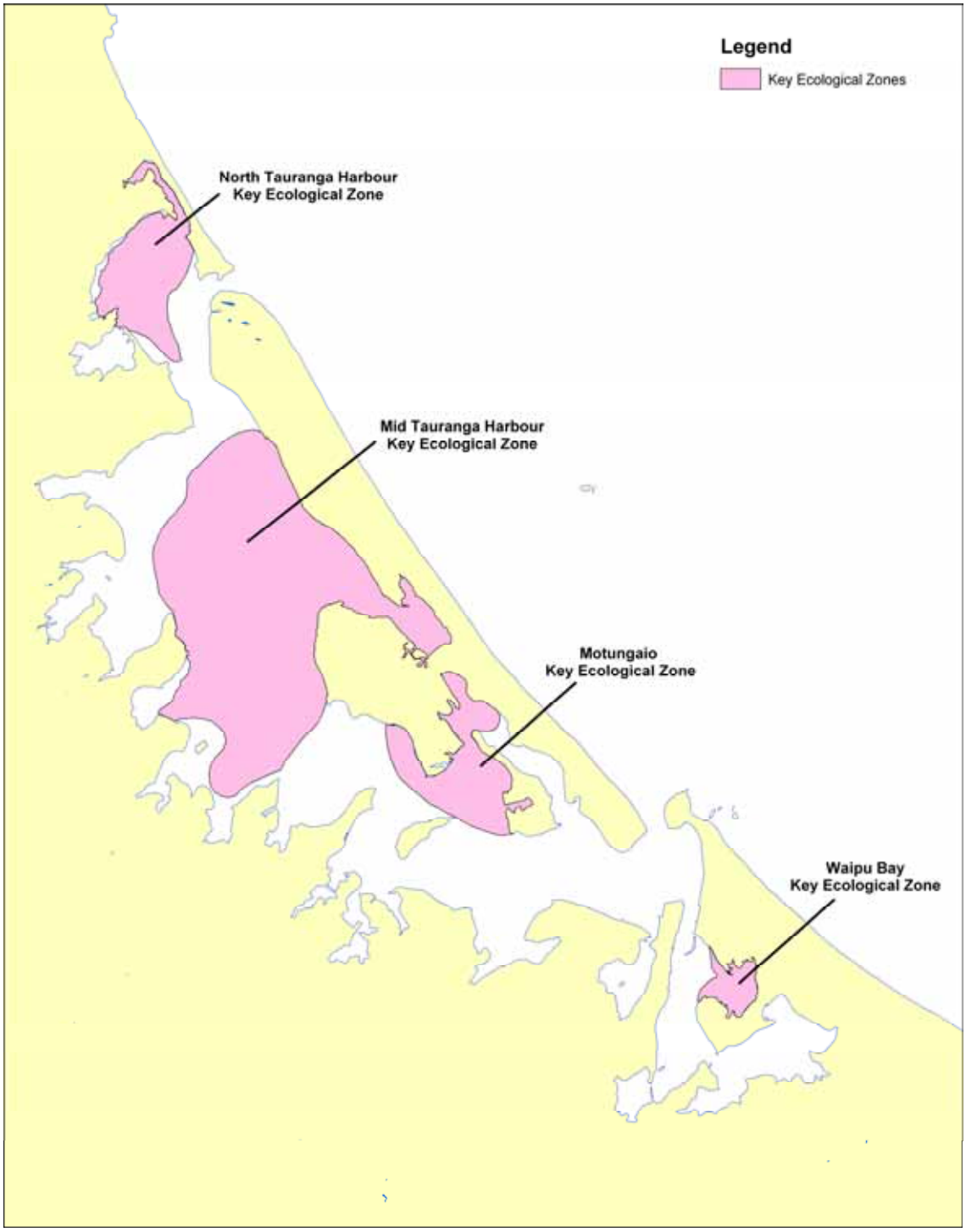


Figure 3: Key Ecological Zones within Tauranga Harbour.

3.8 Mean high water springs (within sites in the SVHZ digital layer)

Land Information New Zealand accepts that there is no single definitive method for establishing the mean high water springs (MHWS) boundary. In this study, the delineation of areas above and below MHWS within sites was based on vegetation cover. Certain vegetation types occur only above MHWS, others are only found below MHWS and yet others straddle the boundary and are therefore not definitive. The method of Beadel *et al.* (1997) was used for estuarine vegetation, and the same approach was extended to open coast habitats, based on ecological knowledge of vegetation pattern; the lower boundary of spinifex grassland is usually just above MHWS.

4. OVERVIEW OF THE BAY OF PLENTY COASTAL ZONE

Sand dunes line the Bay of Plenty coast from Waihi to Opape, broken only occasionally by river and harbour mouths, volcanic landforms (e.g. Bowentown and Mauao), and rocky headlands (e.g. Kohi Point). Harbours and estuaries are a feature of the Region (e.g. Tauranga, Maketu, Waihi, Ohiwa). Freshwater wetlands were originally common on plains behind the sand dunes and around the harbour margins, with some of these having been formerly extensive (e.g. Rangitaiki Swamp, Kawa Swamp, and Waihi Swamp). However the majority of wetlands in the region have now been drained and developed for farming. Low coastal hills and headlands surround Tauranga Harbour and Ohiwa Harbour and adjoin the coast between Pukehina and Matata.

Between Opape and Raukokore there are steep rugged greywacke headlands, interspersed by gravel beaches on long exposed reaches, and finer sand and pebble beaches in the numerous small secluded bays. North-east of the Raukokore River is a series of narrow coastal terraces. The rugged, cliffed coastline is broken only by a few small sandy beaches and the wide, flat-bottomed Whangaparaoa River valley.

There are four relatively large islands and several smaller islands and stacks in the region, with three ecological districts comprising islands in the region. The islands are virtually all of volcanic origin and one, Whakaari (White Island), is an active volcano, and there is geothermal activity on Moutohora (Whale Island).

In the past, the sand dunes would have been dominated by native sand binders including spinifex (*Spinifex sericeus*), pingao (*Desmoschoenus spiralis*), and *Austrofestuca littoralis*. Mangroves (*Avicennia marina* subsp. *australasica*), sea rush (*Juncus kraussii* var. *australiensis*) and oioi (*Apodasmia similis*) would have dominated estuarine wetlands, grading into saltmarsh ribbonwood (*Plagianthus divaricatus*) and manuka (*Leptospermum scoparium*). Raupo (*Typha orientalis*), sedges, harakeke (*Phormium tenax*) and ti kouka (cabbage tree; *Cordyline australis*) would have dominated freshwater wetlands, with local swamp forest. Coastal hillslopes and headlands would have been forested, dominated by pohutukawa (*Metrosideros excelsa*) or mixed coastal forest including pohutukawa, puriri (*Vitex lucens*), karaka (*Corynocarpus laevigatus*), tawa (*Beilschmiedia tawa*), rewarewa (*Knightia excelsa*), kohekohe (*Dysoxylum spectabile*), and (locally) hard beech (*Nothofagus truncata*). Steep coastal cliffs would have supported an array of coastal shrubs and herbs including

manuka, whararikí (*Phormium cookianum*), New Zealand ice plant (*Disphyma australe*), glasswort, kanuka (*Kunzea ericoides*), mingimingi (*Leucopogon fasciculatus*), and *Ficinia nodosa*.

The vegetation of the Bay of Plenty coastal zone has had a long history of modification and disturbance by humans, starting with extensive modification by Polynesians during pre-European times. Modification continued following the arrival of Europeans and much of the original vegetation cover has been substantially modified or removed. However, there are many remnant examples, albeit modified, of the major vegetation associations, i.e. sand dune vegetation (e.g. most of the coastaline); coastal forest on hillslopes and headlands (e.g. Matata Scenic Reserve and Ohope Scenic Reserve) and wetlands (e.g. Tauranga and Ohiwa Harbours). The natural character of the coastal zone for each ecological district is described in more detail in sections below.

In the past, the Bay of Plenty coastal zone would have supported a much richer assemblage of fauna. Coastal hills and cliffs would have supported extensive colonies of seabirds including but not limited to grey-faced petrel, flesh-footed shearwater and diving petrel, species which persist on the offshore islands of the region (Holdaway *et al.* 2001). The large nutrient inputs provided by these seabird colonies would have influenced the structure and composition of coastal vegetation and supported rich and varied reptile and invertebrate communities, including species such as tuatara, Duvaucel's gecko, Whitaker's skink (Towns and Daugherty 1994), and probably northern giant weta species (Sherley 1998). A wide range of forest birds would have inhabited the pohutukawa-dominant forests on hillsides and headlands, including species such as North Island saddleback, North Island kaka, North Island kokako and stitchbird, which are now either confined to the offshore islands of the regions or occur in a few places on the mainland of the region.

The Bay of Plenty coastal zone contains extensive areas of wader and shore bird habitat in large harbours such as Tauranga and Ohiwa, and numerous estuaries, lagoons, sandspit and beach sand dune systems, particularly where the major rivers of the region disgorge into the sea. Some acutely threatened species, such as NZ dotterel and Australasian bittern are present through the coastal zone of the region, but there have been range contractions or local extinctions for many other threatened taxa, for example brown teal, which were formerly widespread.

Freshwater and saline water bodies associated with the Bay of Plenty coastal zone still contain some of New Zealand's rarer and threatened fish species. Giant kōkopu are found in the coastal streams, swamps and lake margins of the region. Short-jawed kōkopu are present in forested streams, and long-finned eels are also present in various waterwarys throughout the region. Inanga (*Galaxias maculatus*), while not threatened, is a culturally important species that uses vegetation around the upper limits of tidal riverine areas for spawning, and a number of such spawning sites have been identified in Bay of Plenty rivers (Mitchell 1990). Threats to freshwater fish fauna in the Bay of Plenty coastal zone include habitat reduction and modification, barriers to passage, and competition from introduced species (DOC 2005).

5. COROMANDEL ECOLOGICAL REGION

5.1 Overview

Coromandel Ecological Region comprises nine ecological districts, including Great Barrier and Little Barrier islands in the north and all of the Coromandel Range to the end of Te Hunga Ridge on the Kaimai Range. Of these, only Mayor Island Ecological District and a small part at the southern end of Waihi Ecological District are within the study area. The other EDs are either outside the Bay of Plenty Region or do not reach the coast (Te Aroha Ecological District).

The Coromandel Ecological Region is a peninsula bounded by sea, with the Hauraki Plains to the southwest and the lowlands of Tauranga Harbour to the southeast. *"The most strongly unifying features of the five mainland districts are the distinctive kauri* (Agathis australis) *element from near sea level to a little over 800m asl; the volcanic origins of most of the country rock and the steep Coromandel Range"* (Regnier 1987). The Coromandel lies within a zone characterised by high levels of regional endemism in the woody flora (McGlone 1985).

For a detailed description of the region and an assessment of conservation values see Humphreys and Tyler (1995).

5.2 Waihi Ecological District

The Waihi Ecological District comprises mainly hilly to steep country of moderate altitude reaching approximately 750 m asl. There is rolling to undulating country and alluvial plains in the south-east of the district. The coastal bioclimatic zone comprises largely a narrow band of hills bounded by steep ignimbrite cliffs on the seaward margin. Most of the larger, eastward-flowing rivers disgorge into the Otahu estuary. Only a small portion of the southern end of the Ecological District is in the Bay of Plenty Region (one site: Orokawa).

The original vegetation cover in the whole ED has been extensively modified. Pohutukawa forest and coastal forest comprising pohutukawa, tawa, puriri, kohekohe, rewarewa, pigeonwood (*Hedycarya arborea*), mangeao (*Litsea calicaris*) and karaka would have dominated the coastal hillslopes, however most of these have been cleared of their former forest cover. Orokawa and Homunga Bay Scenic Reserves include the largest remaining remnants (Regnier 1987; Humphreys and Tyler 1995). Orokawa Scenic Reserve is in the Bay of Plenty Region.

Pimelea tomentosa (ranked Chronically Threatened, Serious Decline, de Lange *et. al.* 2004) occurs in the Orokawa area.

Table 7: Threatened and notable species in Waihi Ecological District (Bay of Plenty Region), coastal bioclimatic zone.

Scientific Name	Common name	Threat Classification/ Significance
BIRDS		
Chronically Threatened		
Eudyptula minor iredalei	Northern little blue penguin	Gradual Decline
VASCULAR PLANTS		
Chronically Threatened		
Pimelea tomentosa		Serious Decline
Hebe pubescens subsp. *pubescens*		Regionally Uncommon[1]

Notes

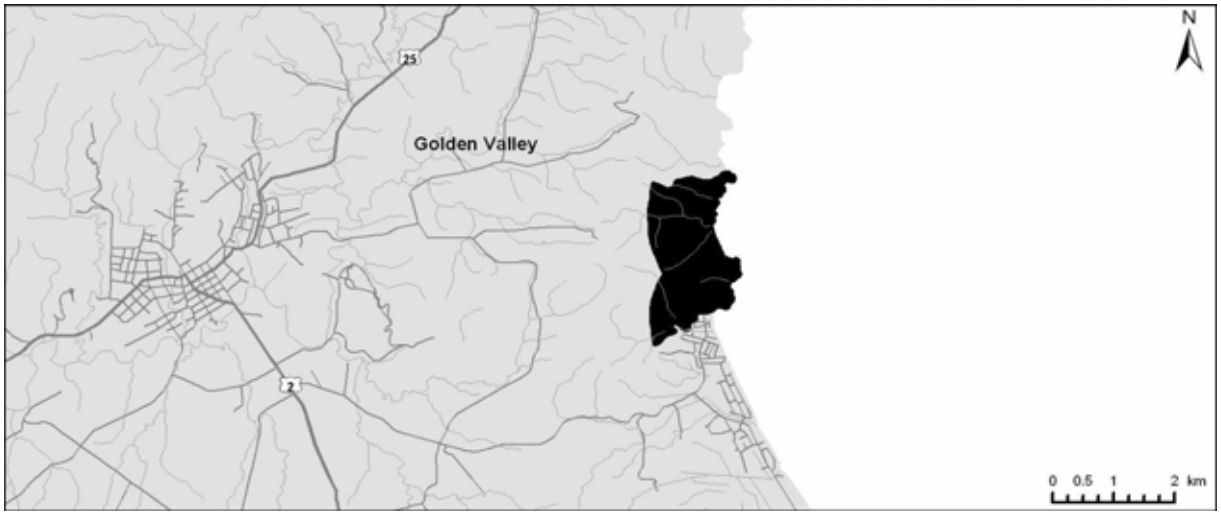
[1] Reaches its southernmost limit of distribution at Orokawa; endemic to the Coromandel Ecological Region.

References

NZPCN 2006; Humphries and Tyler 1995.

OROKAWA (PART)[1]

Site Number	SVHZ-1
Grid Reference (NZMG)	2770004 6419777
Local Authority	Western Bay of Plenty District Council
Ecological District	Waihi
Status	Protected (DOC, Orokawa Scenic Reserve) and unprotected parts
Site Area	273.5 ha
Altitudinal Range	0-204 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa forest.	Volcanic hard coast
Terrestrial	Pohutukawa-tawa-rewarewa-puriri-pigeonwood-mangeao-karaka-kohekohe forest.	Volcanic hard coast
Terrestrial	Five finger-rangiora-karamu/manuka-kanuka scrub.	Volcanic hard coast
Terrestrial	Pohutukawa treeland.	Volcanic hard coast
Terrestrial	Pohutukawa-karo-houpara treeland.	Volcanic hard coast
Terrestrial	*Helichrysum lanceolatum*-karo-kohuhu-taupata shrubland.	Volcanic hard coast
Terrestrial	Manuka shrubland.	Volcanic hard coast
Terrestrial	Wilding pines/indigenous secondary forest.	Volcanic hard coast
Terrestrial	Rewarewa/(pohutukawa)/whauwhaupaku forest.	Hillslope
Terrestrial/marine	Sandfield.	Beach sands
	(Current study; Beadel 1994a; Beadel and Mackinnon 1996)	

Indigenous Flora

Pimelea tomentosa (Chronically Threatened, Serious Decline) and *Hebe pubescens* var. *pubescens* (a plant endemic to the Coromandel Ecological Region) were present in the Scenic Reserve in 1985. On the eastern side of the Coromandel Peninsula *Hebe pubescens* subsp. *pubescens* reaches its southernmost limit of distribution at Orokawa..

[1] Part of Orokawa Scenic Reserve occurs outside the 'coastal environment' study area (i.e. further than 1 km inland of MHWS).

Indigenous Fauna Forest geckos have been recorded in Orokawa and the surrounding forested areas. Northern little blue penguins (Chronically Threatened, Gradual Decline) nest here (John Heaphy pers. comm. 2006).

Condition/Pressures Stands of wilding pines (radiata pine and maritime pine) are conspicuous and have the potential to further invade areas of secondary shrublands within the site (including the habitat of *Pimelea tomentosa*). Possums have had a major impact in the past, but the Department of Conservation now carries out pest control in this area (Nancy Willems pers. comm. 2006).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	L
	3.5	H
	3.6	H
Diversity and Pattern	3.7	L
Naturalness	3.8	M
Ecological Context	3.9	L
	3.10	M
Viability and Sustainability	3.11	H
	3.12	M
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance National

Significance Justification The large size and relatively good condition of this area of coastal forest contribute strongly to its national ranking. Orokawa Scenic Reserve is considered to be a representative, good quality example of the coastal vegetation of the Waihi Ecological District. In particular the areas of coastal forest (together with Homunga Scenic Reserve) are considered to be the best remaining examples in an Ecological District where much of the coastal zone has been cleared and converted to pasture (Humphreys and Tyler 1995; Beadel 1994a; current study).

Notes This site was previously ranked as nationally significant for its vegetation (Beadel 1994a).

References Miller 1984; Beadel 1994a; Humphreys and Tyler 1995; Beadel and Mackinnon 1996; current study.

5.3 Mayor Island Ecological District

Mayor Island Ecological District has one land mass: Tuhua (Mayor Island). Tuhua is the emergent summit of an isolated rhyolite volcano lying near the edge of the continental shelf about 26 km offshore in the Western Bay of Plenty. The island is roughly circular, with a diameter of about 4 km, and is surmounted by a large caldera (about 3 km in diameter). There are two crater lakes. Tuhua was connected to the mainland during the last glacial.

The entire island is within the coastal bioclimatic zone. The vegetation was extensively modified by Polynesian occupation during pre-European times. Modification continued following the arrival of the European and much of the vegetation on Tuhua has developed following burning during these times. No original forest remains, with most of the forest on the island's outer slopes being less than 180 years old. The present day vegetation, except where interrupted by cliffs and crater lakes, is generally forest composed primarily of three species; pohutukawa, rewarewa and kanuka. Kamahi (*Weinmannia racemosa*) is locally common. Covering the talus heaps on the inside of the caldera rim is a tall forest of enormous pohutukawa, puriri, kohekohe and local mangeao. Manuka is locally dominant on the crater floor. Grasses, New Zealand iceplant, whararikí and pohutukawa are common on sea cliffs. Common wetland species include *Baumea articulata*, *B. juncea,* raupo, giant spike sedge (*Eleocharis sphacelata*), *Carex secta, C. virgata*, manuka, sphagnum (*Sphagnum cristatum*), harakeke, *Baumea rubiginosa*, *B. arthrophylla* and *B. tenax*, and swamp kiokio (*Blechnum minus*). Grey willow is locally common. (Atkinson 1956, Bayley *et al.* 1955, Edmonds and Briggs, n.d.; Shaw and Hunt 1996, Hunt and Williams 2000)

Thirteen threatened and local plant taxa have been recorded on Tuhua, including four acutely threatened taxa, and these are listed in the following table.

Tuhua is home to a range of common and threatened indigenous wildlife, and is one of the few offshore New Zealand islands where Australasian bittern are found. It supports a particularly large population of bellbirds and its resident North Island kaka frequently visit mainland sites in the Coromandel and Kaimai Ranges. Grey-faced petrels represent a depauperate seabird fauna which would have suffered heavily from the impacts of introduced mammals.

Some of the indigenous herpetofauna remain, including moko skink (At Risk, Sparse), copper skink and unidentified gecko species (*Hoplodactylus* spp. – could be threatened) (Hunt and Williams 2000).

Tuhua's flora and fauna have presumably benefited from the recent removal of the island's suite of introduced pest mammals - Norway rats, kiore, feral cats and feral pigs - in 2000 (Towns and Broome 2003). Reintroductions of North Island robin (Heaphy 2003a) and brown teal (Heaphy 2006) have since been successfully undertaken.

Table 8: Threatened and notable species in Mayor Island Ecological District, coastal bioclimatic zone.

Scientific Name	Common Name	Threat Classification/ Significance
BIRDS		
Acutely Threatened		
Anas superciliosa superciliosa	grey duck	Nationally Endangered
Botaurus poiciloptilus	Australasian bittern	Nationally Endangered
Anas chlorotis "North Island"	brown teal	Nationally Endangered[1]
Nestor meridionalis septentrionalis	North Island kaka	Nationally Endangered
Chronically Threatened		
Larus bulleri	black-billed gull	Serious Decline
Larus novaehollandiae scopulinus	red-billed gull	Gradual Decline
Eudynamys taitensis	long-tailed cuckoo	Gradual Decline
Eudyptula minor iredalei	northern little blue penguin	Gradual Decline
Hemiphaga novaeseelandiae	kereru	Gradual Decline
VASCULAR PLANTS		
Acutely Threatened		
Linguella puberula	dwarf greenhood	Nationally Critical
Hibiscus trionum	native hibiscus	Nationally Critical
Rorippa divaricata		Nationally Endangered
Senecio scaberulus		Nationally Endangered
Chronically Threatened		
Marattia salicina	king fern	Serious Decline
Euphorbia glauca	shore spurge	Gradual Decline
Pimelea arenaria	sand pimelea	Gradual Decline
Cyclosorus interruptus		Gradual Decline
Ranunculus macropus	swamp buttercup	Gradual Decline
At Risk		
Blechnum norfolkianum		Sparse[1]
Pisonia brunoniana	parapara	Sparse
Sicyos australis	mawhai	Data Deficient
Nestegis apetala	coastal maire	Regionally uncommon, distributional limit[2]
Reptiles		
Chronically Threatened		
Oligosoma infrapunctatum	speckled skink	Gradual Decline
At Risk		
Oligosoma moco	moko skink	Sparse

Notes

1 Endemic to NZ and Norfolk Island and also reaches its southernmost limit on Tuhua (Hunt and Williams 2000).

2 Reaches its southern limit on Tuhua.

References

Beadel 1994a; NZPCN 2006; OSNZ 2006.

1 DOC has recently reintroduced this species to the island.

TUHUA (MAYOR ISLAND)

Site Number SVHZ-205
Grid Reference (NZMG) 2798898 6429852
Local Authority
Ecological District Mayor Island
Status Protected (DOC, Mayor Island Wildlife Sanctuary)
Site Area 1,328.0 ha
Altitudinal Range 0-83 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa forest.	Volcanic hard coast
Terrestrial	Steepland pohutukawa forest.	Volcanic hard coast
Terrestrial	Puriri-mahoe-pohutukawa forest.	Volcanic hard coast
Terrestrial	(Rewarewa)/pohutukawa-kohekohe-puriri forest.	Volcanic hard coast
Terrestrial	(Rewarewa)/pohutukawa-kanuka-kamahi forest.	Volcanic hard coast
Terrestrial	Rewarewa/kamahi-pohutukawa forest.	Volcanic hard coast
Terrestrial	Kanuka shrubland.	Volcanic hard coast
Terrestrial	Rewarewa-kanuka forest.	Volcanic hard coast
Terrestrial	(Rewarewa)/kanuka scrub.	Volcanic hard coast
Terrestrial	Manuka-*Coprosma lucida*-prickly mingimingi-mapou scrub⇔pohutukawa/manuka-*Coprosma lucida*-prickly mingimingi-mapou scrub.	Volcanic hard coast
Terrestrial	Kanuka-mingimingi-mapou-karamu-koromiko shrubland.	Volcanic hard coast
Terrestrial	Rewarewa/pohutukawa-kanuka forest⇔kanuka-whauwhaupaku-mapou-shining karamu shrubland.	Volcanic hard coast
Terrestrial	Mapou-kanuka-karo forest.	Volcanic hard coast
Terrestrial	Mapou-pohutukawa treeland.	Volcanic hard coast
Terrestrial	*Spinifex*-sea rocket-*Carex pumila* grassland.	Beach sand
Terrestrial	(Rewarewa)/pohutukawa-kohekohe-puriri-mangeao forest.	Volcanic hard coast
Terrestrial	Coastal cliff communities. (Shaw and Hunt 1996)	Volcanic hard coast
Palustrine	*Baumea* sedgeland.	Wetland
Palustrine	*Carex secta* sedgeland.	Wetland
Palustrine	Raupo reedland.	Wetland
Palustrine	*Eleocharis sphacelata* reedland. (Beadel 1994a)	Wetland

Indigenous Flora

Tuhua is a nationally significant site for pohutukawa forest free from the effects of possums (Beadel 1994a). The island has the largest flora of any of the Bay of Plenty islands (Clarkson and Spring-Rice 1992), which reflects its relatively large size and diversity of habitats. Since 1926 various plant species lists for the island have been compiled by different botanists (see Shaw and Hunt 1996 for a list of references).

Threatened plants recorded on the island include: Dwarf greenhood (*Linguella puberula* – Acutely Threatened, Nationally Critical), native hibiscus (*Hibiscus trionum* – Acutely Threatened, Nationally Critical), *Rorippa divaricata* (Acutely Threatened, Nationally Endangered), *Euphorbia glauca* (Chronically Threatened, Serious Decline), king fern (*Marattia salicina* – Chronically Threatened, Serious Decline), *Pimelea tomentosa* (Chronically Threatened, Serious Decline), swamp buttercup (*Ranunculus macropus* - Chronically Threatened, Gradual Decline), parapara (*Pisonia brunoniana* - At Risk, Sparse) and mawhai (*Sicyos australis* – Data Deficient) (Beadel 1994a), *Senecio scaberulus* (Acutely Threatened, Nationally Endangered), and *Cyclosorus interruptus* (Chronically Threatened, Gradual Decline) (Hunt and Williams 2000). *Blechnum norfolkianum* (At Risk, Sparse) occurs only in New Zealand and on Norfolk Island, and also reaches its southernmost limit on Tuhua (Hunt and Williams 2000). Parapara was last recorded in 1981 (Hunt and Williams 2000).

Coastal maire (*Nestegis apetala*) reaches its southern limit on Tuhua, where only a single specimen was recorded in 1986 (herbarium voucher NZFRI 15903).

Asplenium flaccidum subsp. *haurakiense* is present (NZFRI 20582; collected by Mike Wilcox in 1967).

Indigenous Fauna

The following indigenous species of bird are currently present (including nine threatened species): Australasian bittern (Acutely Threatened, Nationally Endangered), grey duck (Acutely Threatened, Nationally Endangered), NI kaka (Acutely Threatened, Nationally Endangered), brown teal (Acutely Threatened, Nationally Endangered), southern black-billed gull (Chronically Threatened, Serious Decline), kereru (Chronically Threatened, Gradual Decline), northern little blue penguin (Chronically Threatened, Gradual Decline), long-tailed cuckoo (Chronically Threatened, Gradual Decline) red-billed gull (Chronically Threatened, Gradual Decline), NZ kingfisher, pied shag, little shag, welcome swallow, tui, bellbird, Australasian harrier, grey warbler, North Island fantail, morepork, silvereye, papango, grey-faced petrel and North Island robin. Tuhua is one of the few offshore islands around NZ where Australasian bittern are found; it has a particularly large population of bellbirds and has one of the few remaining populations of North Island kaka in the western Bay of Plenty (Hunt and Williams 2000). Kaka frequently visit mainland sites in the Coromandel and Kaimai Ranges.

Following mammalian eradications, North Island robin were reintroduced in May 2003 (Heaphy 2003a), and brown teal were reintroduced in 2006 (Heaphy 2006). All the other species listed above are naturally present on Tuhua.

Some of the indigenous herpetofauna remain, including moko skink (At Risk,

Sparse), copper skink and unidentified gecko species (*Hoplodactylus* spp. – could be threatened) (Hunt and Williams 2000).

A total of 62 species of spider were recorded on Tuhua in 2003. Many of the species recorded are widely distributed throughout New Zealand. No species are endemic to Tuhua and six of the species found are introduced to New Zealand. It has been estimated that with further collecting, the total list of spider species will exceed 100 (Fitzgerald 2003).

Condition/Pressures

All introduced mammals which had been present (pigs, cats, Norway rats and kiore) were eradicated in 2000 (Heaphy 2003a).

There is a serious threat from introduced wasps on the island, although there has been a campaign by DOC to poison nests (Heaphy 2006).

Several invasive weeds are present, including maritime pine, radiata pine, pampas, Mexican devil, grey willow, fig, periwinkle, ragwort, inkweed and royal fern. There is a systematic weed management programme and pines are now almost eradicated (Hunt and Williams 2000; Heaphy 2006).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	H
	3.4	H
	3.5	H
	3.6	L
Diversity and Pattern	3.7	H
Naturalness	3.8	H
Ecological Context	3.9	H
	3.10	H
Viability and Sustainability	3.11	H
	3.12	H
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance National

Significance Justification

Tuhua is the largest offshore island in the Bay of Plenty (and the largest terrestrial natural area within the Bay of Plenty coastal bioclimatic zone). It is geologically and ecologically distinctive, and has previously been ranked as both nationally and internationally significant (Beadel 1994a; Kenny and Hayward 1996). It supports populations of acutely and chronically threatened species, some of which have been reintroduced. Two plants reach national distribution limits on the island. The ecological condition of the island has improved dramatically since the eradication of all mammalian pests in 2000 and there can be no doubt that this is one of the most important offshore island restoration projects nationally.

Notes

Obsidian or 'tuhua' is abundant on the island and was a valuable commodity in the pre-European Maori economy (Hunt and Williams 2000).

Tuhua is mostly Maori-owned (16/195 shares in the land are Crown-owned) and is administered by the Tuhua Trust Board operating under a 1993 trust deed which has as one of its objectives 'to protect and conserve wahi tapu, native plants and animals and any other areas of the land which many be regarded by the owners as having special or historical importance' (Hunt and Williams 2000).

Tuhua comprises twenty-one separate geological features of regional to international importance, all volcanic or geothermal in origin (Kenny and Hayward 1996).

References

Atkinson and Percy 1956; Bayley *et al.* 1956; Beadel 1994a; Kenny and Hayward 1996; Shaw and Hunt 1996; Hunt and Williams 2000; Heaphy 2006.

6. NORTHERN VOLCANIC PLATEAU ECOLOGICAL REGION

6.1 Overview

The Northern Volcanic Plateau Ecological Region comprises five Ecological Districts: Motiti, Tauranga, Otanewainuku, Rotorua Lakes and White Island. The region is characterised by its volcanic substrates and landforms. All of the Ecological Districts have coastal margins except the Rotorua Lakes Ecological District. Each Ecological District has a different volcanic history and landform. For example, Otanewainuku is a dissected ignimbrite plateau whilst White Island Ecological District comprises two volcanic islands and several rock stacks, one of which (Whakaari or White Island) is an active volcano. Motiti Ecological District also comprises several islands and rock stacks.

6.2 Tauranga Ecological District

Tauranga Harbour is the dominant feature of the Ecological District's coastal bioclimatic zone. It is one of the largest harbours in New Zealand, covering a total area of 218 square kilometres. It is a tidal estuarine lagoon impounded by a barrier island (Matakana Island) and two barrier tombolos, Mauao (Maunganui) at the southern entrance and Bowentown to the north. Low coastal hills occur around the inland margin of the harbour. The coastal strip comprises an extensive sand dune system, some of which has been developed for housing, pastoral farming and (on Matakana Island) forestry plantations. Extensive freshwater wetlands originally occurred behind the sand dunes, but most have been drained and there are only small remnant wetlands. There are two estuaries near Maketu, separated by Oreti Point.

The vegetation of Tauranga Ecological District has been substantially modified by humans since the fourteenth century (Stokes 1980). Around Tauranga Harbour there were extensive freshwater and estuarine wetlands, whilst in the eastern part of the district there were extensive swamps known as Kawa and Waihi. The Kawa and Waihi swamps have been extensively drained and developed for farming and only small remnants of the original vegetation remain.

The original wetlands in Tauranga Harbour would have included mangrove scrub and shrublands in the harbour and extending up stream channels, with local *Schoenoplectus pungens*. Behind the mangroves there would have been mosaics of oioi, sea rush and local *Baumea juncea*, grading into saltmarsh ribbonwood sedgelands and shrublands and manuka scrub and shrublands with local *Coprosma propinqua* subsp. *propinqua.* The major difference between the present day vegetation and the original cover is the vegetation that occurs inland from the band of manuka scrub. Originally at many sites, there were would have been freshwater wetlands, dominated by raupo, sedges (including *Carex* spp., *Gahnia xanthocarpa, Baumea* spp.), harakeke, swamp millet (*Isachne globosa*) and cabbage trees. Undoubtedly in places there would have been swamp forest dominated by kahikatea (*Dacrycarpus dacrydioides*); possibly with local pukatea (*Laurelia novae-zelandiae*) and swamp maire (*Syzygium maire*). Kahikatea stumps have been found in the swamps at Maketu (Stokes 1980). Only a very small proportion of the freshwater wetlands remain today and there is little or no swamp forest present. Many of the remaining freshwater wetlands have been invaded by grey willow (*Salix cinerea*). Reduced water levels and modification of the original vegetation cover by clearance, grazing and burning has encouraged this invasion (Beadel 1992a).

Two threatened ferns (*Cyclosorus interruptus,* Chronically Threatened Gradual Decline; *Thelypteris confluens*, Chronically Threatened, Gradual Decline), have nationally-significant populations on Matakana Island (Beadel 1992b), and also occur in a small remnant of the Kawa swamp near Maketu. A native buttercup *Ranunculus macropus* (Chronically Threatened, Gradual Decline) is found in the wetlands on Matakana Island.

Sand dune vegetation would have been dominated by spinifex and pingao, and these are still common in many places on the dune system. Two threatened sand dune plants which still occur in the district would probably have been more common; *Austrofestuca littoralis* (Chronically Threatened, Gradual Decline) and *Pimelea arenaria* (Chronically Threatened, Gradual Decline).

On Mauao, Bowentown Heads, Oreti Point, Moturiki Island, Motuotau Island and the hillslopes and headlands bordering Tauranga Harbour there would have been pohutukawa forest and tall coastal forest (canopy dominants including pohutukawa, puriri, karaka, rewarewa and kohekohe). However, only small areas of pohutukawa forest and treeland now remain. Minor areas of coastal shrubland dominated by taupata and *Melicytus novae-zelandiae* occur on Motuotau Island. *Melicytus novae-zelandiae* also occurs on Matakana Island.

Tauranga Harbour is one of the 'top ten' wintering sites for black stilt (Acutely Threatened, Nationally Critical), NZ dotterel, wrybill (Acutely Threatened, Nationally Vulnerable), banded dotterel (Chronically Threatened, Gradual Decline), and pied stilt (Dowding and Moore 2006). It is a significant winter roost site for pied oystercatcher, many of which (generally sub-adult birds) remain at Tauranga over spring/summer, when adults return to their inland South Island breeding grounds. Reef herons (Acutely Threatened, Nationally Vulnerable) feed in the waters around Sulphur Point, and up adjacent channels (John Heaphy pers. comm. 2006). Caspian tern (Acutely Threatened, Nationally Vulnerable) flocks have been recorded since 2003 (OSNZ 2006). Owen *et al*. (2006) recommended Tauranga Harbour be considered for RAMSAR status.

The following information was provided by Brian Chudleigh (OSNZ).

Large numbers of arctic migratory bird species roost in Tauranga Harbour outside their breeding seasons, from September to March – the most numerous being turnstone, godwit, and lesser knot. In addition, many juveniles of these species overwinter at Tauranga Harbour.

Wader species collectively utilise several known roosting sites around Tauranga harbour. Some sites are entirely above mean high water springs and therefore are continuously available, while other sites are available only for a certain number of days per month. Other sites identified, such as the Omokoroa golf course, are used only at spring high tides or during bad weather and/or storm surges. The largest and most important roosts have been identified as separate sites within this report – Yellow Point Sandbank, Matahui Point Intertidal Flats, Mangawhai Bay Intertidal Flats, Te Maunga, Tuapiro Estuary Sandspit, Egg Island Sandbank, and Waipu Bay Intertidal Flats.

The extensive intertidal flats in Tauranga Harbour are feeding areas for wading bird populations. Waders disperse throughout the harbour area to feed, although flats adjacent to important roost sites, e.g. Matahui Point would be particularly well used. It is likely that many regular feeding areas have not been identified because of the extensive size, convoluted shoreline, and difficulties of access to large areas within the harbour.

Lowland, near-coastal freshwater habitats around Tauranga Ecological District contain chronically threatened fish species such as long-finned eel and giant kōkopu.

Table 9: Threatened and notable species in Tauranga Ecological District, coastal bioclimatic zone.

Scientific Name	Common Name	Threat Classification/ Significance
BIRDS		
Acutely Threatened		
Himantopus novaezelandiae[1]	black stilt	Nationally Critical
Sterna nereis davisae[1]	fairy tern	Nationally Critical
Anas superciliosa superciliosa	grey duck	Nationally Endangered
Anas chlorotis "North Island"	brown teal	Nationally Endangered
Botaurus poiciloptilus	Australasian bittern	Nationally Endangered
Charadrius obscurus aquilonius	NZ dotterel	Nationally Vulnerable
Sterna caspia	Caspian tern	Nationally Vulnerable
Egretta sacra sacra	reef heron	Nationally Vulnerable
Anarhynchus frontalis	wrybill	Nationally Vulnerable
Chronically Threatened		
Larus novaehollandiae scopulinus	red-billed gull	Gradual Decline
Sterna striata striata	white-fronted tern	Gradual Decline
Eudyptula minor iredalei	northern little blue penguin	Gradual Decline
Charadrius bicinctus bicinctus	banded dotterel	Gradual Decline
At Risk		
Porzana pusilla affinis	marsh crake	Sparse
Gallirallus philippensis assimilis	banded rail	Sparse
Bowdleria punctata vealeae	North Island fernbird	Sparse
Other Notable Species		
Limosa lapponica	bar-tailed godwit	Migrant
Numenius madagascariensis	eastern curlew	Migrant
Numenius phaeopus	whimbrel	Migrant
Calidris canutus	lesser knot	Migrant
Arenaria interpres	turnstone	Migrant
VASCULAR PLANTS		
Chronically Threatened		
Pimelea tomentosa		Serious Decline
Euphorbia glauca	shore spurge	Gradual Decline
Austrofestuca littoralis	hinarepe, sand tussock	Gradual Decline
Desmoschoenus spiralis	pingao	Gradual Decline
Thelypteris confluens	marsh fern	Gradual Decline
Pimelea arenaria	sand pimelea	Gradual Decline
Cyclosorus interruptus		Gradual Decline
Ranunculus macropus	swamp buttercup	Gradual Decline
At Risk		
Mimulus repens	native musk	Sparse
Tetragonia tetragonioides	NZ spinach	Sparse

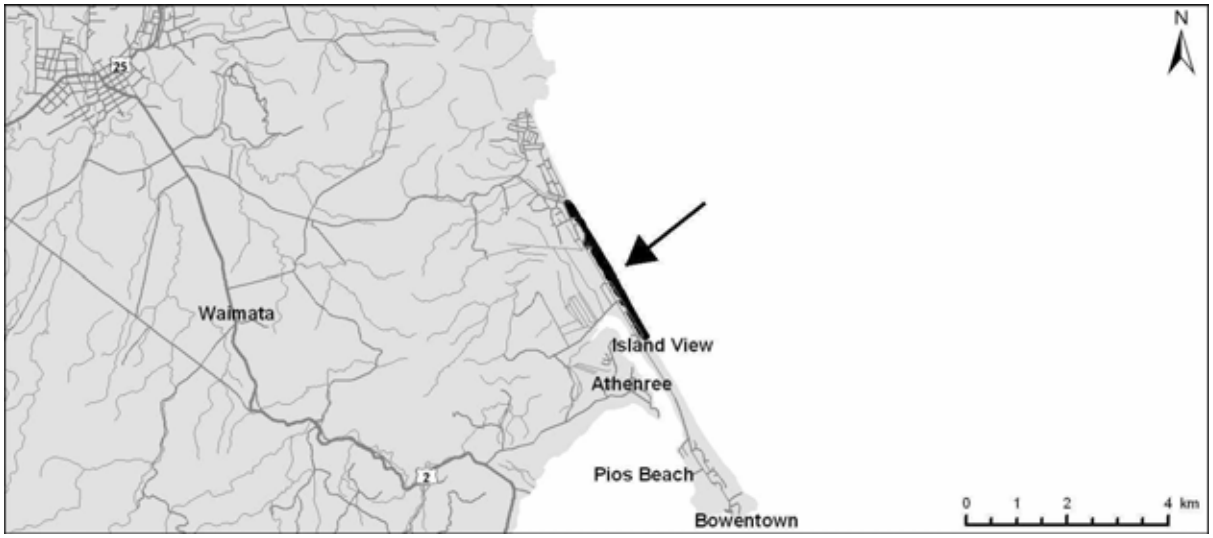
Scientific Name	Common Name	Threat Classification/ Significance
REPTILES		
Chronically Threatened		
Oligosoma infrapunctatum	speckled skink	Gradual Decline
At Risk		
Oligosoma moco	moko skink	Sparse
FRESHWATER FISHES		
Chronically Threatened		
Anguilla dieffenbachii	long-finned eel	Gradual Decline
Galaxias argenteus	giant kōkopu	Gradual Decline
Notable		
Galaxias maculatus[3]	inanga	Not Threatened

Notes
[1] Roosts but does not breed in Tauranga ED.
[2] Spawning sites on major rivers and estuaries.

References
Beadel 1990b; Mitchell 1990; Owen 1993; Beadel 1994a; NZPCN 2006; OSNZ 2006;

CENTRAL WAIHI BEACH

Site Number	SVHZ-2
Grid Reference (NZMG)	2771887 6415473
Local Authority	Western Bay of Plenty District Council
Ecological District	Tauranga
Status	Protected (WBOPDC reserve) and unprotected parts
Site Area	21.9 ha
Altitudinal Range	0-4 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Spinifex sandfield.	Sand dune
Terrestrial	Spinifex-pingao grassland.	Sand dune
Terrestrial	Spinifex-marram grassland	Sand dune
Terrestrial	*Ficinia nodosa*/pohuehue vineland.	Sand dune
Terrestrial	Gorse-lupin-pampas scrub.	Sand dune
Terrestrial	Gazania herbfield. (Current study)	Sand dune

Indigenous Flora Spinifex dominates the front face of the foredune, with scattered pingao (Chronically Threatened, Gradual Decline), particularly towards the southern end of the site.

Indigenous Fauna No specific fauna information.

Condition/Pressures Invasive species such as marram and pampas. The dunes around the mouth of Three Mile Creek are dominated by gorse, lupin, and pampas. The dunes north of Three Mile Creek also include a high component of exotic species, including garden escapes. Other invasive weeds in this site include *Asparagus sprengei*, agapanthus, marram grass, phoenix palm, and dimorphotheca.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	L
	3.6	H
Diversity and Pattern	3.7	L
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	L
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

Significance Justification Includes foredune areas and a population of chronically threatened pingao (which has probably been planted at the site). Part of a regionally significant geological feature. The site been degraded by development for residential housing and exotic plant species which dominate behind the foredune, and therefore it is ecologically significant at the local level.

Notes The site is a regionally significant example of a beach form shaped by long-term erosional processes (Kenny and Hayward 1996).

References Kenny and Hayward 1996; rapid field assessment (2006).

BOWENTOWN SAND DUNES AND BEACH

Site Number	SVHZ-3
Grid Reference (NZMG)	2773521 6412603
Local Authority	Western Bay of Plenty District Council
Ecological District	Tauranga
Status	Protected (WBOPDC reserve) and unprotected parts
Site Area	68.2 ha
Altitudinal Range	0-15 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	*Ficinia nodosa*/pohuehue vineland and sedgeland.	Dune and beach sands
Terrestrial	Pohuehue vineland.	Dune and beach sands
Terrestrial	Spinifex grassland.	Dune and beach sands
Terrestrial	Spinifex-*Ficinia nodosa*/pohuehue-*Calystegia soldanella-Lachnagrostis billardierei* sedge-vine-grassland.	Dune and beach sands
Terrestrial	Houpara/*Ficinia nodosa*/pohuehue vine-sedgeland.	Dune and beach sands
Terrestrial	Spinifex sandfield.	Dune and beach sands
Terrestrial	Spinifex-pingao sandfield.	Dune and beach sands
Terrestrial	Spinifex-(pingao) sandfield.	Dune and beach sands
Terrestrial	Banksia-(radiata pine)/houpara/*Ficinia nodosa* treeland and sedgeland.	Dune and beach sands
Terrestrial	Gorse scrub.	Dune and beach sands
Terrestrial	*Ficinia nodosa*-(lupin)/pohuehue sedgeland and vineland. (Beadel 1994a)	Dune and beach sands

Indigenous Flora

Pingao (Chronically Threatened, Gradual Decline) is locally common within this site. There is a 1983 record of sand pimelea (Chronically Threatened, Gradual Decline) (Beadel 1994a), however it is not known if it remains at the site.

This is one of the few sites in the Bay of Plenty where the giant rush *Juncus pallidus* occurs in dune hollows and ephemeral wetlands. There is also a small population of *Coprosma acerosa* (Greg Jenks pers. comm. 2006), which is considered to be regionally uncommon (Beadel 2006).

Indigenous Fauna This beach is a nesting area for NZ dotterel (Acutely Threatened, Nationally Vulnerable) and variable oystercatcher. Shore skinks are present (John Heaphy pers. comm. 2006).

Condition/Pressures There is an ever-increasing *Banksia integrifolia* infestation at this site, mainly concentrated at the northern end. Other invasive weeds include gorse, lupins, and pampas. Rabbits threaten the remaining *Coprosma acerosa* population (Greg Jenks pers. comm. 2006).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	L
	3.5	M
	3.6	H
Diversity and Pattern	3.7	H
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	M
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

Significance Justification This regionally significant site has high botanical values - a mosaic of sand dune vegetation typesis present including threatened and uncommon plants (pingao and *Coprosma acerosa*). However, it is degraded by invasive weeds which, if left uncontrolled, will continue to spread through the site. This site has high potential for restoration, including weed control. It is a regionally important breeding area for the acutely threatened northern NZ dotterel, and contains two chronically threatened plant species. Identified as part of a regionally significant geological feature.

Notes Regionally significant example of a beach form shaped by long-term erosional processes (Kenny and Hayward 1996). The vegetation of this site was previously ranked as regionally significant by Beadel (1994a).

References Beadel 1994a; Kenny and Hayward 1996; current study.

BOWENTOWN HEADS

Site Number SVHZ-4
Grid Reference (NZMG) 2774011 6410780
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Protected (WBOPDC reserve) and unprotected parts
Site Area 28.8 ha
Altitudinal Range 0-80 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa forest.	Volcanic hard coast
Terrestrial	Five finger-houpara-mapou-brush wattle forest. (Beadel 1994a)	Volcanic hard coast

Indigenous Flora *Tetragonia tetragonioides* (At Risk, Sparse) (Beadel 1994a).

Indigenous Fauna This is a nesting site for northern little blue penguin (Chronically Threatened, Gradual Decline) (John Heaphy pers. comm. 2006).

Condition/Pressures Secondary vegetation within the site and adjacent to it includes invasive species such as pampas and brush wattle. These areas may need to be managed to allow indigenous species to regenerate.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	M
	3.5	M
	3.6	H
Diversity and Pattern	3.7	L
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	L
Viability and Sustainability	3.11	M
	3.12	H
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

Significance Justification Pohutukawa forest was once common in Tauranga Ecological District, but has now been greatly reduced in extent and only small areas remain (e.g. Mauao, Kauri Point, Ngakautuakina Point, Matakana Point, Tuapiro, Motuhoa Island). This site includes good examples of remnant pohutukawa forest and secondary mixed forest. This site is also ecologically significant as a nesting area for a chronically threatened marine bird species, and an at risk plant species (*Tetragonia tetragonioides*).

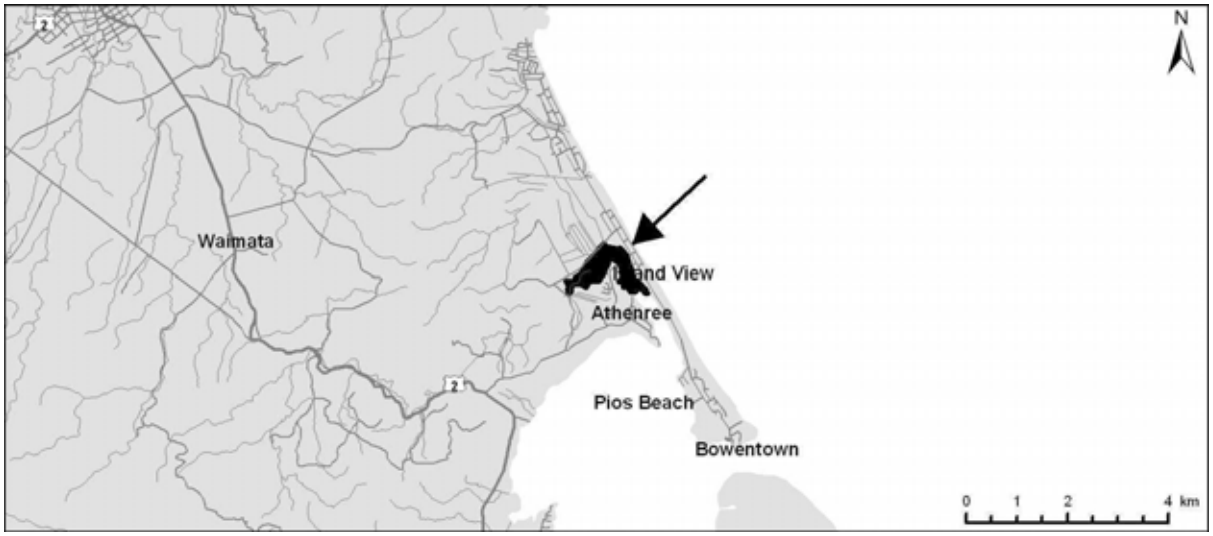
Notes Adjacent areas of gorse scrub contain scattered indigenous species (e.g. pohutukawa, manuka, cabbage tree). If these areas are allowed to continue to regenerate, gorse will become less dominant through natural succession processes. This has the potential to increase the indigenous biodiversity of the site and buffer the existing pohutukawa and secondary indigenous forest. Some control of invasive species may be required (e.g. pampas and brush wattle).

The vegetation of this site was previously ranked as being of District significance by Beadel (1994a) and was identified as a Category 1 natural heritage site in the Tauranga Ecological District (Beadel and Shaw 2000b).

References Beadel 1994a; Beadel and Shaw 2000b; current study.

ATHENREE

Site Number SVHZ-5
Grid Reference (NZMG) 2771864 6414111
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Protected (DOC, Athenree Wildlife Refuge)
Site Area 51.9 ha
Altitudinal Range 0-20 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Mangrove scrub.	Intertidal flat
Estuarine	Mangrove shrubland.	Intertidal flat
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	*Bolboschoenus fluviatilis* sedgeland.	Intertidal flat
Estuarine	Oioi rushland.	Intertidal flat
Palustrine	Harakeke flaxland.	Wetland
Palustrine	Raupo reedland.	Wetland
Palustrine	Manuka scrub.	Wetland
Palustrine	Estuarine margin vegetation.	Wetland
	(Beadel 1994a)	

Indigenous Flora The site comprises extensive areas of oioi rushland and sea rush tussockland with scattered saltmarsh ribbonwood. There are also smaller areas of freshwater wetlands on the margins, particularly towards the southern (upstream) end of the site, which include flax, raupo, and manuka. Mangrove scrub and shrublands are extensive towards the downstream end of the site and are scattered along the edge of the river channel.

Indigenous Fauna Regarded by Department of Conservation (J. Heaphy pers. comm.) as one of the most important saltmarsh areas in Tauranga Harbour. There are recent records for a range of threatened saltmarsh birds, e.g. Australasian bittern (Acutely Threatened, Nationally Endangered), spotless crake, banded rail and marsh crake (John Heaphy pers. comm. 2006).

Condition/Pressures Residential developments close to the margins of the site at Athenree and Island View may have adverse impacts on vegetation and fauna. Noted in 1992 (Owen 1993): weeds, dumping of road spoil.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	H
	3.4	M
	3.5	H
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	H
Ecological Context	3.9	M
	3.10	H
Viability and Sustainability	3.11	H
	3.12	H
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance National

Significance Justification Athenree is a nationally significant saltmarsh and freshwater wetland complex. It comprises high quality representative examples of vegetation characteristic of the Tauranga Ecological District. One acutely threatened bird species (Australasian bittern) and at least three at risk marshbird species are present. Pest plant impacts on the natural character of the site are realtively low.

Notes Identified as a Category 1 natural heritage site in the Tauranga Ecological District (Beadel and Shaw 2000b). The vegetation was identified as being of regional significance in Beadel (1994a). This site is part of North Tauranga Harbour Key Ecological Zone.

References Beadel 1992a; Owen 1993; Beadel 1994a; Beadel and Shaw 2000b; current study.

STEELE ROAD WETLANDS A

Site Number SVHZ-6
Grid Reference (NZMG) 2771312 6413321
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Unprotected
Site Area 9.9 ha
Altitudinal Range 20 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Palustrine	Grey willow forest.	Wetland
Palustrine	Manuka scrub.	Wetland
Palustrine	Cabbage tree-manuka forest. (Beadel 1992a and current study)	Wetland

Indigenous Flora The canopy is dominated by an exotic species (i.e. grey willow) with areas of manuka scrub and cabbage tree-manuka forest. The understorey varies according to water levels. Drier sites include dense hangehange with karamu, mamaku, ponga, swamp kiokio, and bush rice grass. At wetter sites swamp coprosma, *Baumea juncea* and *B. teretifolia* are prominent.

Indigenous Fauna The stream is habitat for inanga, short-finned eel, and giant kōkopu (Chronically Threatened, Gradual Decline) (Grove *et al.* 1999). A single fernbird was heard within the site (current study).

Condition/Pressures Invasive weeds include grey willow, pampas and Japanese honeysuckle. The landfill is a potential source of invasive weeds, and attracts cats and rats which may also impact upon the site.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	L
	3.5	L
	3.6	H
Diversity and Pattern	3.7	L
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	L
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

Significance Justification This site is degraded and the canopy is dominated by exotic species in places, however it is locally significant because freshwater wetlands have been greatly reduced in extent in the Tauranga Ecological District. There is a recent record of one at risk bird species, and a chronically threatened fish species has been recorded from the catchment of the stream which flows along the edge of the site.

Notes This vegetation in this site was ranked as being of District significance in Beadel 1994a (see Athenree 2).

References Beadel 1992a; Grove *et al.* 1999; current study.

STEELE ROAD WETLANDS B (PART)[1]

Site Number SVHZ-7
Grid Reference (NZMG) 2770863 6413541
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Unprotected
Site Area 5.5 ha
Altitudinal Range 20 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Palustrine	Manuka scrub.	Wetland
Palustrine	Cabbage tree-grey willow-manuka forest. (Beadel 1992a)	Wetland

Indigenous Flora No significant species recorded.

Indigenous Fauna This site is adjacent to the Waiau River. The river is habitat for a suite of indigenous freshwater species, including long-finned eel (Chronically Threatened, Gradual Decline) and giant kōkopu (Chronically Threatened, Gradual Decline) (Wildland Consultants 2006b). Therefore, this site is likely to have a role in maintaining instream habitat values. There is an unconfirmed report of North Island fernbird (At Risk, Sparse) in the nearby Steele Road Wetlands A (current study), and this species may also be present in Steele Road Wetlands B. Other species which have been recorded in the nearby wetlands along the Waiau River (see Site SVHZ-5) and which may be present in this site include Australasian bittern (Acutely Threatened, Nationally Endangered), marsh crake (At Risk, Sparse), spotless crake (At Risk, Sparse), and banded rail (At Risk, Sparse) (John Heaphy pers. comm. 2006).

Condition/Pressures Dominated by grey willow, which is a highly invasive species.

[1] Part of Steele Road Wetlands B occurs outside the 'coastal environment' study area (i.e. further than 1 km inland of MHWS).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	L
	3.6	H
Diversity and Pattern	3.7	L
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

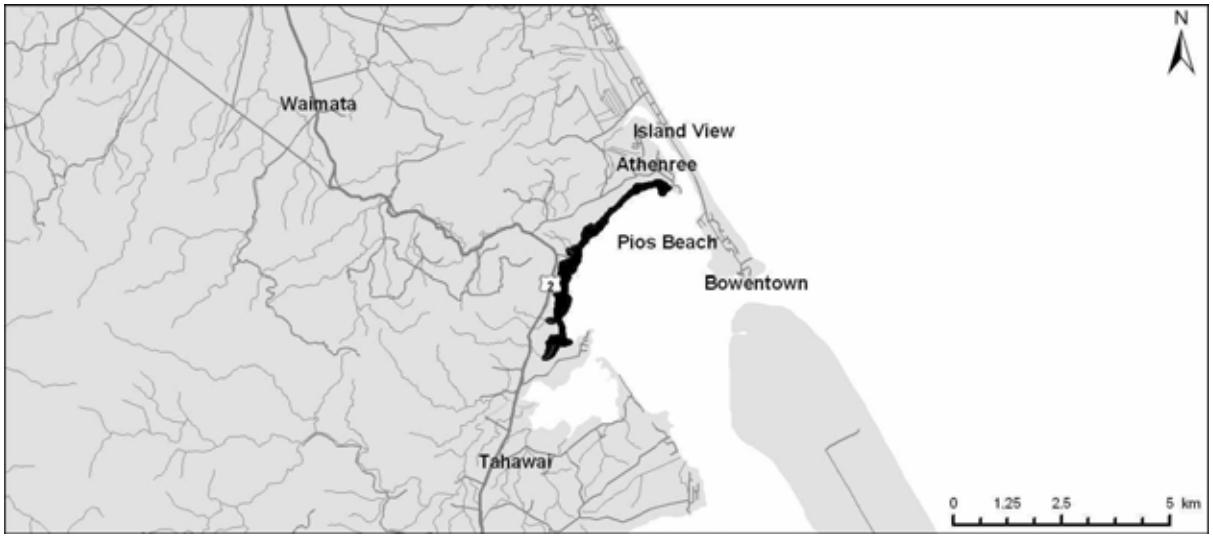
Significance Justification This site is degraded and dominated by exotic species, however it is locally significant because freshwater wetlands have been greatly reduced in extent in the Tauranga Ecological District. There is a recent record of one at risk bird species, and two chronically threatened fish species have been recorded from the catchment of the stream which flows along the edge of the site.

Notes The vegetation in this site was ranked as being of District significance in Beadel (1994a) (see Athenree 2).

References Beadel 1992a; Beadel 1994a; Wildland Consultants 2006b; current study.

HIKURANGI

Site Number SVHZ-8
Grid Reference (NZMG) 2770541 6410732
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Protected (WBOPDC reserve) and unprotected parts
Site Area 66.0 ha
Altitudinal Range 0-16 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Mangrove scrub and shrubland.	Interidal flat
Estuarine	Sea rush tussockland.	Interidal flat
Estuarine	Oioi rushland.	Interidal flat
Estuarine	*Baumea juncea*-sea rush-oioi sedgeland.	Interidal flat
Estuarine	*Baumea juncea* sedgeland.	Interidal flat
Estuarine/palustrine	Estuary margin vegetation.	Interidal flat, wetland
Estuarine	Spartina grassland.	Interidal flat
Palustrine	Manuka scrub and shrubland.	Wetland
Palustrine	Grey willow forest.	Wetland
	(Beadel 1992a)	

Indigenous Flora No significant species recorded.

Indigenous Fauna Australasian bittern (Acutely Threatened, Nationally Endangered) reported by adjoining landowner; banded rail and North Island fernbird (At Risk, Sparse) recorded in 1992 (Owen 1993).

Condition/Pressures Noted in 1992 (Owen 1993): weeds; organic rubbish dumping; illegal reclamation; stock access.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	M
Viability and Sustainability	3.11	M
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

Significance Justification The relatively large size of this site is offset by its long, narrow shape, lack of buffering from intensive land use, and extensive modification by a range of pressures. Further information is required on reports of acutely threatened bird species here. It has been classed as of local significance because of its large size and it comprises large typical examples of the estuarine vegetation of Tauranga Harbour.

References Beadel 1992a; Owen 1993.

NORTH TAURANGA HARBOUR

Site Number SVHZ-9
Grid Reference (NZMG) 2771918 6410565
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Unprotected
Site Area 1,047.2 ha
Altitudinal Range 0-7 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	*Zostera* spp. (seagrass) grassland.	Intertidal and sub-tidal flat
Marine	Worm field.	Subtidal channel
Marine	Worm field.	Intertidal flat
Marine	Cockle bed.	Intertidal flat
Marine	Pipi bed.	Subtidal channel
Marine	Horse mussel bed.	Subtidal channel
	(Park 1999; Stephen Park, Environment BOP, pers. comm. 2006; current study)	

Indigenous Flora This site contains extensive areas of high-density *Zostera* spp. (seagrass) beds (Park 1999).

Indigenous Fauna Contains extensive intertidal flats that function as feeding grounds for wader bird species (principally godwit and pied oystercatcher), including areas adjacent to known, major wader roosting areas (Brian Chudleigh pers. comm. 2006).

Condition/Pressures Sediment and nutrient runoff that decreases levels of light reaching seabed may have contributed significantly to a 34% reduction in the extent of seagrass beds in Tauranga Harbour between 1959 and 1996 (Park 1999).

Control and eradication efforts in recent years mean that *Spartina*, a significant weed of intertidal flats, now poses a potential rather than an actual threat.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	M
	3.5	H
	3.6	N/A
Diversity and Pattern	3.7	M
Naturalness	3.8	H
Ecological Context	3.9	H
	3.10	H
Viability and Sustainability	3.11	H
	3.12	H
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance National

Significance Justification The extensive intertidal flats found in the northern part of Tauranga Harbour are close to the major shorebird roosts at Yellow Point sandbank and Waikoura Point at the north-western end of Matakana Island, and are extensively used for feeding at low tide. This site also contains the second-largest area of high-density seagrass beds in the harbour. Tauranga Harbour as a whole is regarded as meeting criteria to be considered a Ramsar Wetland of International Importance (Owen *et al.* 2006), and this site is a particularly high-value component of it.

Notes This site is part of North Tauranga Harbour Key Ecological Zone.

References Beadel 1992a; Park 1999; Brian Chudleigh (OSNZ) pers. comm. 2006; Owen *et al.* 2006; current study.

YELLOW POINT SANDBANK

Site Number SVHZ-10
Grid Reference (NZMG) 2772748 6410433
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Unprotected
Site Area 9.8 ha
Altitudinal Range 0 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Sandfield.	Sandbank
Estuarine	*Zostera* spp. (seagrass) grassland. (Park 1999)	Intertidal and sub-tidal flat

Indigenous Flora This site includes small areas of seagrass, but is mainly unvegetated.

Indigenous Fauna Along with the north-west end of Matakana Island, Yellow Point sandbank is one of the most important roosting sites for waders (principally godwit and pied oystercatcher) in Tauranga Harbour, for example, counts of godwit commonly exceed 1000 individuals, and counts of pied oystercatcher commonly number in the hundreds. (John Heaphy and Brian Chudleigh pers. comm. 2006) (Owen *et al.* 2006).

Condition/Pressures Its situation as a sandbank in mid-harbour means direct human disturbance is low. The sandbank is subject to erosion and accretion, and is flooded by spring high tides, affecting its availabililty as a roost (Owen *et al.* 2006).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	H
	3.6	N/A
Diversity and Pattern	3.7	L
Naturalness	3.8	H
Ecological Context	3.9	H
	3.10	H
Viability and Sustainability	3.11	H
	3.12	H
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance National

Significance Justification This site is nationally significant because of the numbers and diversity of international and NZ migratory waders that flock there, and because, as a mid-harbour sandbank, direct human pressures are very low.

Notes This site is part of North Tauranga Harbour Key Ecological Zone.

References Park 1999; Brian Chudleigh (OSNZ) pers. comm. 2006; John Heaphy (DOC) pers. comm. 2006; Owen *et al.* 2006).

TUAPIRO

Site Number SVHZ-11
Grid Reference (NZMG) 2769626 6407804
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Protected (WBOPDC Reserve; WBOPDC Covenants) and unprotected parts
Site Area 54.3 ha
Altitudinal Range 0-20 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa forest.	Sedimentary coastal hinterland
Estuarine	Mangrove scrub and shrubland.	Intertidal flat
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	Oioi-saltmarsh ribbonwood shrub-sedgeland.	Intertidal flat
Estuarine	*Baumea juncea*-sea rush-oioi sedgeland.	Intertidal flat
Estuarine	Oioi rushland.	Intertidal flat
Estuarine	Sandspit vegetation. (Beadel 1994a)	Beach sands

Indigenous Flora No significant species recorded.

Indigenous Fauna Marsh crake (possibly) and North Island fernbird (both At Risk, Sparse) recorded in 1991-2 (Owen 1993).

Condition/Pressures Noted in 1991 and 1992 (Owen 1993): stock access; range of weeds present.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	M
	3.6	M
Diversity and Pattern	3.7	H
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	M
Viability and Sustainability	3.11	M
	3.12	H
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

Significance Justification Tuapiro is regionally significant because it contains good quality examples of pohutukawa forest and saltmarsh that are representative of the ecological character of the region. Pohutukawa forest was once common in Tauranga Ecological District, but has now been greatly reduced in extent and only small areas remain (e.g. Mauao, Kauri Point, Ngakautuakina Point, Matakana Point, Bowentown Heads, Motuhoa Island) (Beadel 1994a). It is also notable that the pohutukawa forest has a relatively intact understorey. This site provides reasonably good quality habitat for an at risk marshbird species.

Notes The vegetation of this site was previously ranked as being significant at the District scale in Beadel (1994a). Identified as a Category 1 natural heritage site in the Tauranga Ecological District (Beadel and Shaw 2000b).

References Owen 1993; Beadel 1994a; Beadel and Shaw 2000b.

TUAPIRO ESTUARY SANDSPIT

Site Number SVHZ-12
Grid Reference (NZMG) 2771124 6408513
Local Authority Western Bay of Plenty District
Ecological District Tauranga
Status Unprotected
Site Area 4.7 ha
Altitudinal Range 0 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Sandfield.	Sandspit
Estuarine	Intertidal flats. (Current study)	Intertidal flat

Indigenous Flora No significant flora recorded.

Indigenous Fauna This sandspit is periodically used as a neap high tide roost by waders such as bar-tailed godwit and pied oystercatcher (Brian Chudleigh pers. comm. 2006; Owen *et al.* 2006).

Condition/Pressures Increasing public use of the adjoining recreation reserve is increasing disturbance to this roost (Owen *et al.* 2006).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	L
	3.3	M
	3.4	L
	3.5	M
	3.6	M
Diversity and Pattern	3.7	L
Naturalness	3.8	M
Ecological Context	3.9	L
	3.10	H
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance National

Significance Justification This site is nationally significant because of the numbers and diversity of international and NZ migratory waders that regularly roost here on neap high tides (Owen *et al.* 2006). Surrounding sites 'Ongare' and 'Tuapiro' line the estuary and provide buffering and a wider diversity of habitat.

Notes Increasing public use of the adjoining recreation reserve is increasing disturbance to this roost (Owen *et al.* 2006).

References Brian Chudleigh (OSNZ) pers. comm. 2006; Owen *et al.* 2006.

ONGARE

Site Number SVHZ-13
Grid Reference (NZMG) 2771328 6407957
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Protected (WBOPDC reserve) and unprotected parts
Site Area 26.4 ha
Altitudinal Range 0-11 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Sandspit vegetation.	Beach sands
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	Oioi rushland.	Intertidal flat
Estuarine	*Baumea juncea* sedgeland.	Intertidal flat
Estuarine	Estuary margin vegetation.	Intertidal flat
Estuarine	Mangrove scrub and shrubland.	Intertidal flat
Estuarine	*Olearia solandri*/oioi rushland.	Intertidal flat
Terrestrial/palustrine	Manuka scrub and shrubland.	Sandspit, wetland
Terrestrial	Radiata pine/*Baumea juncea* forest.	Sandspit
Palustrine	(Cabbage tree)-(grey willow)/(manuka)/ *Baumea juncea*-*Juncus* spp.-*Carex* spp. rushland.	Wetland
Palustrine	Raupo-manuka reedland. (Current study and Beadel 1992a)	Wetland

Indigenous Flora

The site is dominated by species which are typical of estuarine wetlands in Tauranga harbour, and smaller examples of freshwater wetland. In 2003, the freshwater wetland east of the road was described as being dominated by grey willow with an understorey of *Baumea juncea*, manuka, mingmingi, swamp coprosma, kiokio, and bracken (Wildland Consultants 2003i). It appears that grey willow and crack willow have been controlled recently. No rare plant species have been recorded.

Indigenous Fauna

Banded rail and North Island fernbird (both At Risk, Sparse) were recorded here in 1992 (Owen 1993). North Island fernbird was recorded again in 2003 (Wildland Consultants 2003i). The sandy beach on the end of the point is a high tide roost for wading birds (John Heaphy pers. comm. 2006).

Condition/Pressures Wild ginger is present on the spit beneath the pines but appears to be being controlled. Pampas and blackberry are present on the margins of the site. Motorcyclists ride on the spit and beach, which has the potential to disturb wildlife and damage vegetation.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	M
Viability and Sustainability	3.11	M
	3.12	H
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

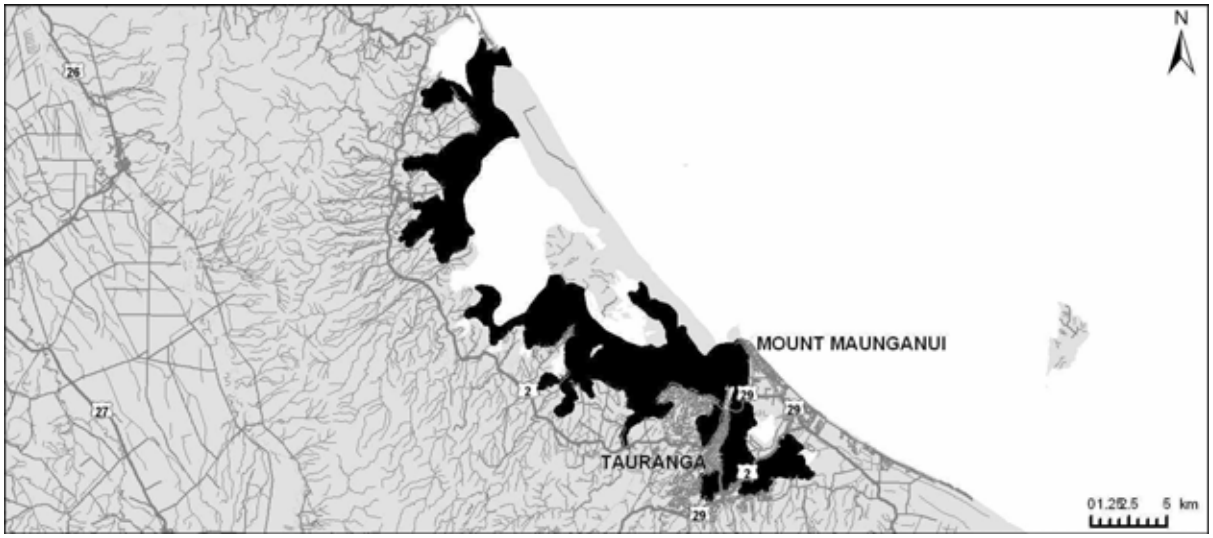
Relative Significance Local

Significance Justification This site comprises estuarine habitat typical of Tauranga Ecological District, however weeds and direct human impacts have significantly modified its condition. Two at risk bird species have been previously recorded here.

References Beadel 1992a; Owen 1993; Wildland Consultants 2003i.

TAURANGA HARBOUR

Site Number SVHZ-14
Grid Reference (NZMG) 2781044 6393562
Local Authority Western Bay of Plenty District Council and Tauranga City Council
Ecological District Tauranga
Status Unprotected
Site Area 10,830.5 ha
Altitudinal Range 0-20 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	*Baumea juncea* sedgeland.	Intertidal flat
Estuarine	Flax/*Baumea juncea*-oioi-marsh ribbonwood sedgeland.	Intertidal flat
Estuarine	Mangrove scrub and shrubland.	Intertidal flat
Estuarine	Mangrove scrub.	Intertidal flat
Estuarine	Mangrove shrubland.	Intertidal fla
Estuarine	Oioi rushland.	Intertidal flat
Estuarine	*Schoenoplectus pungens* sedgeland.	Intertidal flat
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	*Baumea juncea*-searush-oioi sedgeland.	Intertidal flat
Estuarine	Oioi-saltmarsh ribbonwood shrub-sedgeland.	Intertidal flat
Estuarine	Raupo reedland.	Intertidal flat
Estuarine	*Zostera* spp. grassland.	Intertidal and sub-tidal flat
Estuarine	Sandfield.	Intertidal flat
Marine	Worm field.	Subtidal channel
Marine	Worm field.	Intertidal flat
Marine	Cockle bed.	Intertidal flat
Marine	Scallop bed.	Subtidal channel
Marine	Pipi bed.	Subtidal channel
Marine	Horse mussel field.	Subtidal channel
	(Beadel 1992a; Stephen Park, Environment BOP, pers. comm. 2006; current study)	

Indigenous Flora No significant species recorded.

Indigenous Fauna

Several shorebird roosts are present in the Tauranga Harbour site – near the boat ramp at Pahoia Beach Road, at several sites around the Omokoroa peninsula, a small sandspit at the eastern end of Rangiwaea Island, a sandspit at the end of Kuka Road, around Motupuhi in the Waimapu Estuary, at several sites around the fringe of Welcome Bay e.g. Tye Park (Owen et al. 2006).

Condition/Pressures

Gross changes have been measured in the extent of intertidal mangrove and intertidal/subtidal *Zostera* spp. (seagrass) communities around Tauranga Harbour. Increased sedimentation caused by clearance of catchment indigenous vegetation and intensification of land-use, in turn raising the intertidal seabed and increasing nutrient inputs, is suggested as a possible explanation for the large observed increase in mangrove population between 1943 and 2001 (Park 2004). Sediment and nutrient runoff that decreases levels of light reaching seabed may have contributed significantly to a 34% reduction in the extent of seagrass beds in Tauranga Harbour between 1959 and 1996 (Park 1999).

Control and eradication efforts in recent years mean that *Spartina*, a significant weed of intertidal flats, now pose potential rather than actual threats.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	H
	3.6	N/A
Diversity and Pattern	3.7	H
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	H
Viability and Sustainability	3.11	H
	3.12	H
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

Significance Justification

Several parts of Tauranga Harbour have been identified separately as being of national significance (i.e. North Tauranga Harbour, Mid Tauranga Harbour, Tauranga Harbour at Motungaio Island, Waipu Bay Intertidal Flats and Te Maunga). These areas contain the best examples of seagrass beds or habitat for shorebird species throughout the entire harbour system This site represents the remaining parts of Tauranga Harbour, which are assessed as being of regional significance, and includes extensive seagrass beds, shorebird roosts, and habitat of ecological importance.

Notes	Tauranga Harbour as a whole is regarded as meeting the criteria to be considered a Ramsar Wetland of International Importance.
References	Beadel 1992a; Park 1999; Park 2004; Owen et al 2006; current study.

KAURI POINT

Site Number	SVHZ-15
Grid Reference (NZMG)	2773219 6405589
Local Authority	Western Bay of Plenty District Council
Ecological District	Tauranga
Status	Protected (WBOPDC Historic Reserve)
Site Area	12.1 ha
Altitudinal Range	0-40 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa forest.	Moderate-steep hillslope
Terrestrial	Pohutukawa/houpara-karaka/kakaha-kawakawa-karaka forest. (Current study)	Moderate-steep hillslope

Indigenous Flora Pohutukawa forest on moderate to steep faces adjacent to Tauranga Harbour.

Indigenous Fauna Possible though unconfirmed presence of moko skink (At Risk, Sparse), which inhabit some points in the inner Tauranga Harbour (John Heaphy pers. comm. 2006).

Condition/Pressures There is an infestation of wild ginger near the toilet block. The site appears to be fenced and ungrazed.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	L
	3.3	M
	3.4	L
	3.5	M
	3.6	L
Diversity and Pattern	3.7	L
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	M
Viability and Sustainability	3.11	M
	3.12	H
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

Significance Justification This site is regionally significant as it comprises a good quality, representative example of a regionally under-represented vegetation type (i.e. coastal pohutukawa forest). Pohutukawa forest was once common throughout Tauranga Ecological District, but has now been greatly reduced in extent and only small areas remain (e.g. Mauao, Bowentown Heads, Ngakautuakina Point, Matakana Point, Tuapiro, Motuhoa Island) (Beadel 1994a).

References Beadel 1994a; current study.

EGG ISLAND SANDBANK

Site Number	SVHZ-16
Grid Reference (NZMG)	2773196 6402311
Local Authority	Western Bay of Plenty District
Ecological District	Tauranga
Status	Protected (DOC Stewardship Area - Egg Island Crown Land) and unprotected parts
Site Area	236.5 ha
Altitudinal Range	0 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	*Zostera* spp. (seagrass) grassland.	Intertidal and sub-tidal flat
Estuarine	Sandfield.	Sandbank
Estuarine	Intertidal flats. (Park 1999)	Intertidal flat

Indigenous Flora No significant species recorded.

Indigenous Fauna Periodically used as a roost by waders, particularly godwit and pied oystercatcher (Brian Chudleigh pers. comm. 2006).

Condition/Pressures Its situation as a sandbank in mid-harbour means direct human disturbance of roosting birds is low.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	L
	3.3	M
	3.4	L
	3.5	L
	3.6	N/A
Diversity and Pattern	3.7	L
Naturalness	3.8	H
Ecological Context	3.9	L
	3.10	Y
Viability and Sustainability	3.11	M
	3.12	H
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance National

Significance Justification An extensive area of sandbank and seagrass beds where, by virtue of being a mid-harbour sandbank, direct human pressures are very low. Its national significance is because of the numbers and diversity of international and NZ migratory waders that flock here.

Notes This site is part of Mid Tauranga Harbour Key Ecological Zone.

References Park 1999; Brian Chudleigh (OSNZ) pers. comm. 2006.

STOKES ROAD COASTAL FOREST

Site Number SVHZ-17
Grid Reference (NZMG) 2769620 6403837
Local Authority Western Bay of Plenty District
Ecological District Tauranga
Status Protected (WBOPDC reserve) and unprotected parts
Site Area 26.6 ha
Altitudinal Range 0-60 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	(Maritime pine)/rewarewa-mamaku-brush wattle-mahoe scrub. (Current study)	Moderate hillslope

Indigenous Flora No information available.

Indigenous Fauna No information available.

Condition/Pressures Not known.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	L
Rarity or Distinctive Features	3.2	L
	3.3	L
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	L
Naturalness	3.8	L
Ecological Context	3.9	M
	3.10	M
Viability and Sustainability	3.11	M
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

Significance Justification A small example of modified secondary vegetation which acts as a protective buffer to the Katikati Inlet. Adventive species are locally common in the canopy.

References Current study.

KATIKATI INLET

Site Number SVHZ-18
Grid Reference (NZMG) 2768387 6403016
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Protected (WBOPDC reserve) and unprotected parts
Site Area 50.3 ha
Altitudinal Range 0-15 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Palustrine	Grey willow forest.	Wetland
Estuarine	Mangrove scrub.	Intertidal flat
Palustrine	Manuka shrubland.	Wetland
Estuarine	Mangrove shrubland.	Intertidal flat
Palustrine	Harakeke flaxland.	Wetland
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	Oioi-saltmarsh ribbonwood shrub-sedgeland.	Intertidal flat
Estuarine	Oioi rushland.	Intertidal flat
Palustrine	Raupo reedland.	Wetland
	(Beadel 1994a)	

Indigenous Flora No significant species recorded.

Indigenous Fauna Australasian bittern (Acutely Threatened, Nationally Endangered); banded rail, marsh crake, North Island fernbird (At Risk, Sparse) recorded in 1992 (Owen 1993).

Condition/Pressures Noted in 1992 (Owen 1993): stock access; *Spartina*; household garden refuse dumped.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	H
	3.4	L
	3.5	M
	3.6	N/A
Diversity and Pattern	3.7	H
Naturalness	3.8	H
Ecological Context	3.9	M
	3.10	M
Viability and Sustainability	3.11	H
	3.12	H
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

Significance Justification This inlet is a relatively large, good quality, representative example of the wetland vegetation of the Tauranga Harbour and is considered regionally significant (Beadel 1994a). Pressures operating on site are related to weeds and neighbouring land uses. One acutely threatened and three at risk bird species have been recorded here in the past.

Notes An area of pasture immediately south of the site, and adjacent to Uretara Stream, has been reflooded and is in the process of being restored to an estuarine wetland (Wildland Consultants 2006c).

Identified as a Category 1 natural heritage site in the Tauranga Ecological District (Beadel and Shaw 2000b).

References Owen 1993; Beadel 1994a; Beadel and Shaw 2000b; Wildland Consultants 2006c.

PARK ROAD ESTUARY

Site Number SVHZ-19
Grid Reference (NZMG) 2769742 6402621
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Protected (WBOPDC reserve) and unprotected parts
Site Area 37.4 ha
Altitudinal Range 0 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Palustrine	Manuka scrub.	Wetland
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	Oioi-saltmarsh ribbonwood shrub-sedgeland.	Intertidal flat
Estuarine	Harakeke/*Baumea juncea*-oioi-saltmarsh ribbonwood sedgeland.	Intertidal flat
Estuarine	Oioi rushland.	Intertidal flat
Estuarine	Sandspit vegetation.	Beach sands
Estuarine	Mangrove scrub and shrubland.	Intertidal flats
Estuarine	Mangrove-sea rush shrubland.	Intertidal flats
Terrestrial	Pampas tussockland.	Levee
Estuarine	Arrow grass-*Isolepis cernua*-glasswort herbfield.	Tidal channel
Terrestrial	Eucalyptus-radiata pine treeland (Beadel 1994a, Shaw *et al.* 1999)	Flat

Indigenous Flora No significant species recorded.

Indigenous Fauna Banded rail and North Island fernbird (At Risk, Sparse) present (Shaw *et al.* 1999).

Condition/Pressures Noted in 1992 (Owen 1993): reclamation; drainage; stock access; dumped orchard prunings. In 1999, grazing stock and dumping of refuse were still impacting upon the site (Shaw *et al.* 1999). Reed sweetgrass (*Glyceria maxima*) is present on the margins and forms the dominant cover in a few places in freshwater wetland on the margins of the site (Wildland Consultants 2005i).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	H
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	M
Viability and Sustainability	3.11	M
	3.12	H
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

Significance Justification Comprises a relatively large example of estuarine vegetation with a diverse array of habitats characteristic of Tauranga Ecological District. Also contains contiguous freshwater wetlands and two at risk bird species. Neighbouring land uses and several pest plant species are exerting negative pressures on the natural character of the site.

Notes Identified as a Category 1 natural heritage site in the Tauranga Ecological District (Beadel and Shaw 2000b).

References Owen 1993; Beadel 1994a; Shaw *et al.* 1999; Beadel and Shaw 2000b; Wildland Consultants 2005i.

TUTAETAKA ISLAND

Site Number SVHZ-20
Grid Reference (NZMG) 2770569 6400064
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Unprotected
Site Area 1.8 ha
Altitudinal Range 0 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa forest. (Beadel 1992a)	Island

Indigenous Flora No significant species recorded.

Indigenous Fauna No significant species recorded.

Condition/Pressures Not known.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	L
	3.3	L
	3.4	L
	3.5	L
	3.6	N/A
Diversity and Pattern	3.7	L
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	M
Viability and Sustainability	3.11	M
	3.12	H
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

Significance Justification This island comprises a locally significant, small example of pohutukawa forest. This forest type was formerly abundant on headlands and hillslopes around Tauranga Harbour, however it has been greatly reduced in extent.

Notes Vegetation was ranked as being of local significance in Beadel (1994a).

References Beadel 1992a; Beadel 1994a.

TETLEY ROAD INLET

Site Number SVHZ-21
Grid Reference (NZMG) 2769143 6400246
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Protected (WBOPDC reserve) and unprotected parts
Site Area 6.2 ha
Altitudinal Range 0-5 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Palustrine	Raupo reedland.	Wetland
Palustrine	Grey willow forest.	Wetland
Palustrine	Mosaic of freshwater vegetation.	Wetland
Estuarine	Oioi rushland.	Intertidal flat
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	Mangrove scrub.	Intertidal flat
	(Beadel 1992a and Owen 1993)	

Indigenous Flora No significant species recorded.

Indigenous Fauna Banded rail and spotless crake (At Risk, Sparse) were observed here in 1992 (Owen 1993). Upstream of the site, near Tetley Road, giant kōkopu (Chronically Threatened, Gradual Decline), banded kōkopu and short-finned eel have been recorded (Wildland Consultants 2005m).

Condition/Pressures Grey willow infestations in freshwater wetlands. Past damming of tidal inlet (Owen 1993).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	L
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	L
	3.6	H
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	M
Viability and Sustainability	3.11	M
	3.12	H
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

Significance Justification A small wetland and intertidal wetland system, containing vegetation types typical of Tauranga Ecological District, that has been modified by construction works and pest plant invasion. Chronically threatened giant kōkopu are known from upstream of the site, while two at risk bird species have been recorded here in the past.

References Beadel 1992a; Owen 1993; Wildland Consultants 2005m.

TE REREATUKAHIA

Site Number SVHZ-22
Grid Reference (NZMG) 2768586 6398205
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Protected (WBOPDC reserve) and unprotected parts
Site Area 18.7 ha
Altitudinal Range 0-17 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Riverine	Cabbage tree/manuka forest.	Wetland
Riverine	Grey willow forest.	Wetland
Riverine	Raupo reedland.	Wetland
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	Oioi-saltmarsh ribbonwood shrub-sedgeland.	Intertidal flat
Estuarine	Oioi rushland.	Intertidal flat
Estuarine	Manuka shrubland.	Intertidal flat
Estuarine	Manuka scrub.	Intertidal flat
Estuarine	Manuka-*Olearia solandri* scrub.	Intertidal flat
Estuarine	Mangrove scrub and shrubland.	Intertidal flat
Estuarine	Harakeke-*Olearia solandri*-saltmarsh ribbonwood-oioi shrubland.	Intertidal flat
Palustrine	*Baumea articulata* reedland. (Current study and Beadel 1992a)	Wetland

Indigenous Flora No significant species recorded.

Indigenous Fauna Australasian bittern (Acutely Threatened, Nationally Endangered) and North Island fernbird (At Risk, Sparse) were recorded here in 1992, using both riverine and estuarine vegetation, as well as adjacent, infilled land around the marae (Owen 1993).

Roosting and feeding site for brown teal (Acutely Threatened, Nationally Endangered); Caspian tern, wrybill (Acutely Threatened, Nationally Vulnerable); banded dotterel (Chronically Threatened, Gradual Decline); North Island fernbird (At Risk, Sparse) (OSNZ 2006).

Condition/Pressures Most weed problems in 1992 were noted on the small vegetated islets within the saltmarsh. The riverine wetlands were not fenced off and there was evidence of damage from cattle (Owen 1993). Since 1993 at least part of the riverine wetland has been fenced and planted, as has a steep face on the south side of the estuary (current study). Pampas is present on the margins of the site (current study).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	H
Ecological Context	3.9	M
	3.10	M
Viability and Sustainability	3.11	M
	3.12	H
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

Significance Justification This site contains a relatively diverse array of habitats, but parts of the site are modified by weeds and the site is exposed along its entire landward margin to pressures of adjacent intensive land use. Four acutely threatened and one chronically threatened bird species have been recorded here but additional information is needed to clarify their use of the site.

References Beadel 1992a, Owen 1993, OSNZ 2006.

WAITEKOHE STREAM MOUTH

Site Number SVHZ-23
Grid Reference (NZMG) 2770272 6398283
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Protected (WBOPDC reserve) and unprotected parts
Site Area 28.7 ha
Altitudinal Range 0 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	*Samolus repens* herbfield.	Beach sands
Terrestrial	Sandspit vegetation.	Beach sands
Palustrine	*Baumea articulata* reedland.	Wetland
Estuarine	Oioi-saltmarsh ribbonwood shrub-sedgeland.	Intertidal flat
Estuarine	Mangrove scrub and shrubland.	Intertidal flat
Estuarine	Oioi rushland.	Intertidal flat
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	Sea rush-oioi rushland.	Intertidal flat
	(Beadel 1992a)	

Indigenous Flora No significant species recorded.

Indigenous Fauna Australasian bittern (Acutely Threatened, Nationally Endangered), banded rail (At Risk, Sparse) and North Island fernbird (At Risk, Sparse) were recorded here in 1992 (Owen 1993).

Condition/Pressures Drainage/stop-banking, stock access, spartina, reclamation and dumping of refuse were pressures on this site in 1992 (Owen 1993).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	L
Viability and Sustainability	3.11	M
	3.12	H
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

Significance Justification A site of moderate size which is relatively close to other similar sites (e.g. Te Rereatukahia, Matahui Road). These features increase its ecological viability. Indigenous vegetation has been modified by human and weed impacts. One acutely threatened bird species has been recorded from here, but additional information is required on the nature and extent of current use of this site.

References Beadel 1992a; Owen 1993.

MATAHUI ROAD

Site Number SVHZ-24
Grid Reference (NZMG) 2770753 6396793
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Protected (WBOPDC reserve) and unprotected parts
Site Area 17.8 ha
Altitudinal Range 0 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	Mangrove scrub and shrubland.	Intertidal flat
Estuarine	*Schoenoplectus pungens* sedgeland.	Intertidal flat
Estuarine	Oioi rushland.	Intertidal flat
Estuarine	Harakeke/*Baumea juncea*-saltmarsh ribbonwood-oioi sedgeland. (Beadel 1992a)	Intertidal flat

Indigenous Flora No significant species recorded.

Indigenous Fauna Black stilt/hybrid (Acutely Threatened, Nationally Critical); wrybill (Acutely Threatened, Nationally Vulnerable) recorded roosting and feeding since 2003 (OSNZ 2006). Banded rail sign, North Island fernbird (both At Risk, Sparse), Australasian bittern (Acutely Threatened, Nationally Endangered) detected in 1992 (Owen 1993).

Condition/Pressures Noted in 1992 (Owen 1993): North Island fernbird recorded; stock access; weeds - pampas, wattle, blackberry.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	L
Viability and Sustainability	3.11	M
	3.12	H
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

Significance Justification This size of this site and its proximity to other similar sites (e.g. Te Rereatukahia and Waitekohe Stream Mouth) increase its ecological viability, however indigenous vegetation is modified by human and weed impacts. This is a regionally significant area because of recent observations of three acutely threatened bird species.

References Beadel 1992a; Owen 1993; OSNZ 2006.

MATAHUI POINT INTERTIDAL FLATS

Site Number SVHZ-25
Grid Reference (NZMG) 2773074 6398044
Local Authority Western Bay of Plenty District
Ecological District Tauranga
Status Unprotected
Site Area 15.8 ha
Altitudinal Range 0 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Intertidal flats.	Intertidal flat
Estuarine	Mosaic of estuary margin vegetation types. (Beadel 1992a)	Intertidal flat

Indigenous Flora No significant species recorded.

Indigenous Fauna One of the most important roosting sites for waders in Tauranga Harbour. This roost regularly hosts thousands of shorebirds, including migrating black stilts. Its position near the main Tauranga Harbour watershed means it is near to feeding areas exposed for the longest duration between high tides This site is available as a roosting site around twenty days per month as tides allow (Owen *et al.* 2006).

Condition/Pressures The relative isolation of this site and lack of facilities like boat ramps mean human disturbance factors are low.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	H
	3.4	L
	3.5	H
	3.6	N/A
Diversity and Pattern	3.7	L
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	H
Viability and Sustainability	3.11	H
	3.12	M
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance National

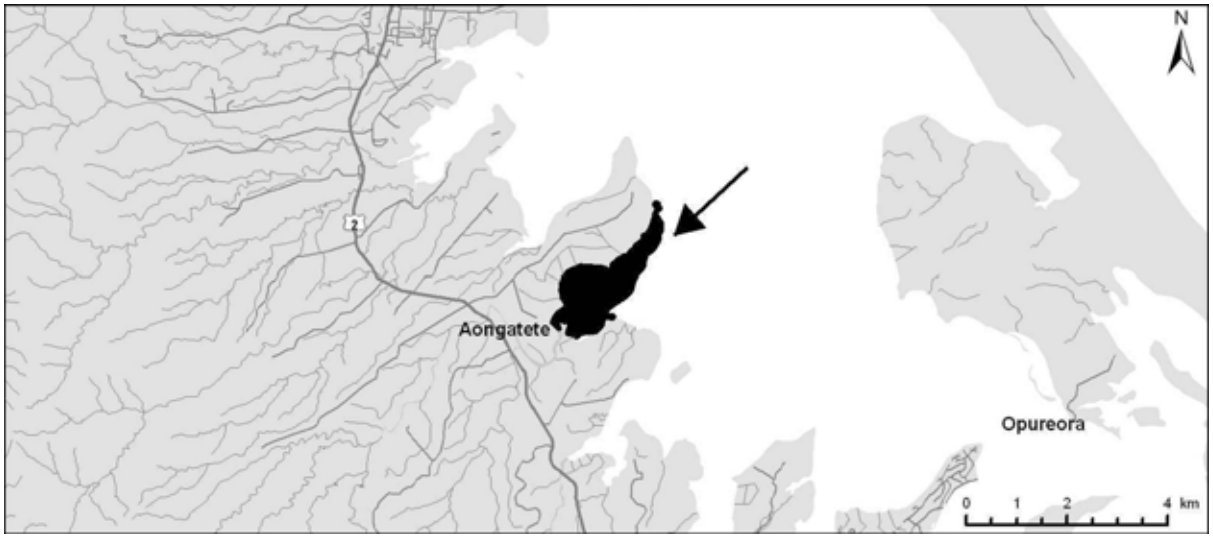
Significance Justification Site is of national significance as roosting habitat for large and diverse flocks of international and NZ migratory wader species. Pressure and disturbance on this site is low due to its remoteness from facilities like roads, boat ramps and other means of beach access.

Notes This site is part of Mid Tauranga Harbour Key Ecological Zone.

References Beadel 1992a; Brian Chudleigh (OSNZ) pers. comm. 2006; Owen *et al.* 2006.

AONGATETE ESTUARY

Site Number SVHZ-26
Grid Reference (NZMG) 2772199 6395892
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Protected (WBOPDC reserve) and unprotected parts
Site Area 177.4 ha
Altitudinal Range 0-3 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Mangrove scrub.	Intertidal flat
Estuarine	Mangrove shrubland.	Intertidal flat
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	Oioi-saltmarsh ribbonwood shrub-sedgeland.	Intertidal flat
Estuarine	Oioi rushland.	Intertidal flat
	(Beadel 1994a)	

Indigenous Flora No significant species recorded.

Indigenous Fauna Australasian bittern (Acutely Threatened, Nationally Endangered); banded rail, North Island fernbird (At Risk, Sparse) present in 1992 (Owen 1993).

Condition/Pressures Noted in 1992 (Owen 1993): stock access; stormwater discharge; weeds - pampas, wattles, wilding pines.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	H
	3.4	L
	3.5	H
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	H
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	H
	3.12	H
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance National

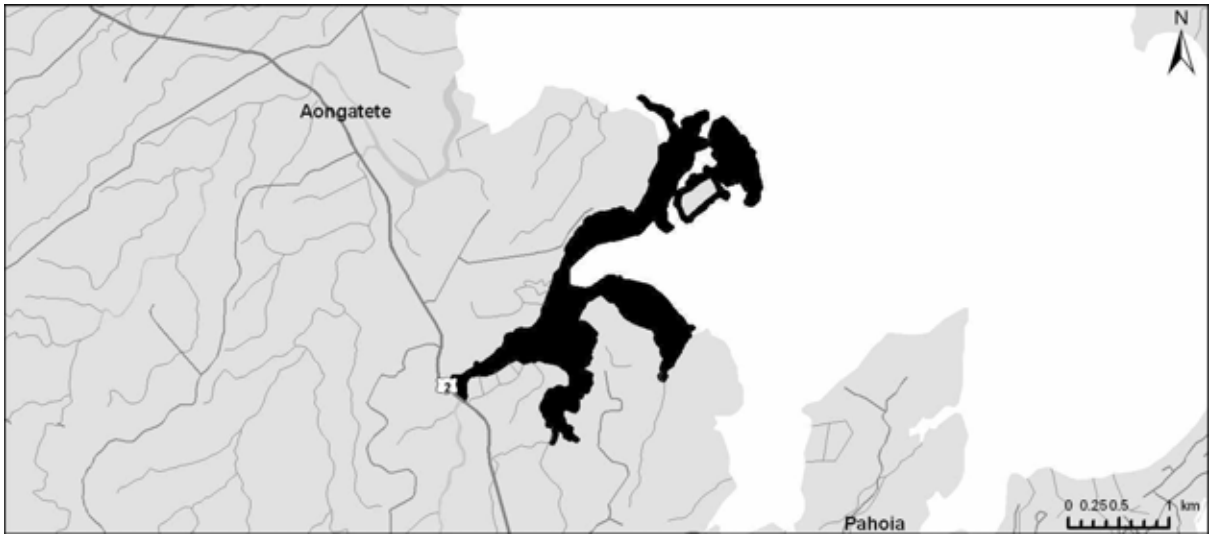
Significance Justification This site is nationally significant due to the high diversity and large extent of high quality mangrove and saltmarsh vegetation types found within this site. Its large size and relatively unified shape provide resilience against the range of pressures that are common to much of Tauranga Harbour. It contains large areas of representative mangrove stands which are diverse in stature and density, and is contiguous with saltmarsh of high quality characteristic of the Tauranga Harbour. Acutely threatened and at risk bird species recorded in the past are likely to persist in habitat of this size and quality.

Notes The vegetation was identified as being of national significance by Beadel (1994a). Identified as a Category 1 natural heritage site in the Tauranga Ecological District (Beadel and Shaw 2000b).

References Beadel 1992a; Owen 1993; Beadel 1994a; Beadel and Shaw 2000b.

WAINUI ESTUARY

Site Number SVHZ-27
Grid Reference (NZMG) 2772999 6393466
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Protected (WBOPDC reserve) and unprotected parts
Site Area 174.1 ha
Altitudinal Range 0-20 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Mangrove scrub.	Intertidal flat
Estuarine	Mangrove shrubland.	Intertidal flat
Palustrine	Manuka shrubland.	Wetland
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	Oioi-saltmarsh ribbonwood shrub-sedgeland.	Intertidal flat
Estuarine	*Baumea juncea*-saltmarsh ribbonwood-oioi sedgeland.	Intertidal flat
Estuarine	Oioi rushland.	Intertidal flat
Palustrine	Raupo reedland.	Wetland
Palustrine	*Baumea articulata* reedland.	Wetland
Palustrine	Kanuka-grey willow/harakeke flaxland.	Wetland
	(Beadel 1994a and Wildland Consultants 2005m)	

Indigenous Flora No significant species recorded.

Indigenous Fauna Australasian bittern (Acutely Threatened, Nationally Endangered), banded rail and North Island fernbird (At Risk, Sparse) were recorded in 1991 (Owen 1993), and are still likely to be present, however there is no recent information.

Condition/Pressures Noted in 1991 (Owen 1993): stock access; reclamation; agricultural effluent discharge; pampas.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	L
	3.5	M
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	H
Ecological Context	3.9	M
	3.10	L
Viability and Sustainability	3.11	H
	3.12	H
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

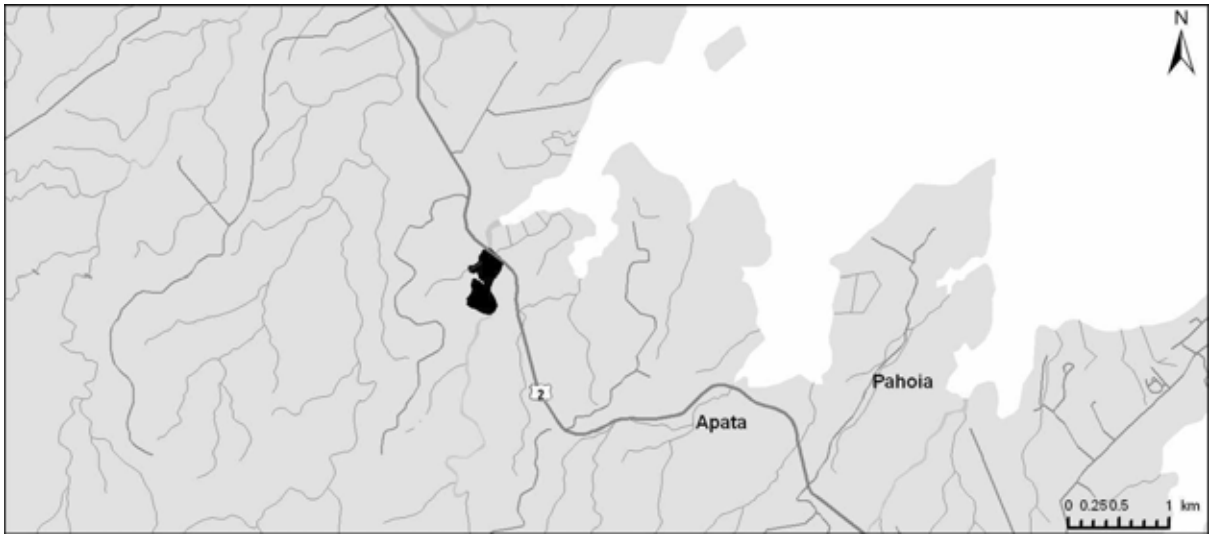
Relative Significance Regional

Significance Justification Relatively large example, albeit modified, of estuarine habitats. It also contains small examples of freshwater wetlands. Acutely threatened and at risk bird species recorded in the past are likely to persist in habitat of this size.

References Owen 1993; Beadel 1994a; Beadel and Shaw 2000b; Wildland Consultants 2005m.

WAINUI ESTUARY WETLANDS

Site Number	SVHZ-28
Grid Reference (NZMG)	2771364 6391877
Local Authority	Western Bay of Plenty District Council
Ecological District	Tauranga
Status	Protected (WBOPDC reserve) and unprotected parts
Site Area	9.3 ha
Altitudinal Range	12-20 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Palustrine	Grey willow forest.	Wetland
Palustrine	Manuka shrubland.	Wetland
Palustrine	Manuka-raupo-toetoe shrubland.	Wetland
Estuarine	Oioi-saltmarsh ribbonwood shrub-sedgeland.	Intertidal flat
Estuarine	Oioi rushland.	Intertidal flat
Estuarine	Oioi-*Baumea articulata* sedgeland.	Intertidal flat
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	*Olearia solandri*-saltmarsh ribbonwood-harakeke shrubland.	Estuarine
Palustrine	Raupo reedland.	Wetland
	(Current study and Beadel 1994a)	

Indigenous Flora No significant species recorded.

Indigenous Fauna Banded rail and North Island fernbird (At Risk, Sparse) recorded in 1991 (Owen 1993). Shortjaw kōkopu (Chronically Threatened, Gradual Decline) recorded in adjacent waterway in 1994 (NIWA 2006).

Condition/Pressures Owen (1993): stock access; weeds - grey willow, gorse. Currently there are still infestations of grey willow, pampas and gorse in and around the margins of the freshwater wetlands.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	M
	3.5	M
	3.6	M
Diversity and Pattern	3.7	H
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	M
	3.12	H
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

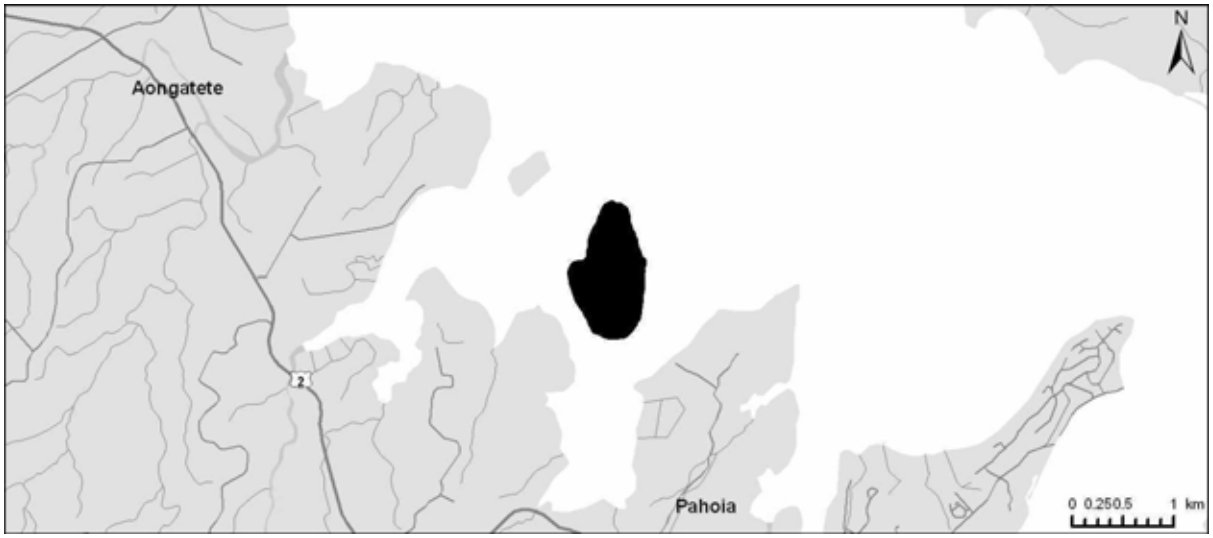
Relative Significance Regional

Significance Justification This site includes representative examples of estuarine and freshwater wetlands and the vegetation was ranked as being of regional significance by Beadel (1994a). Reasonably good quality habitat for the two at risk bird species recorded here.

References Owen 1993; Beadel 1994a; NIWA 2006.

TE HOPAI ISLAND

Site Number SVHZ-29
Grid Reference (NZMG) 2774553 6393180
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Unprotected
Site Area 64.1 ha
Altitudinal Range 0 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Mangrove scrub.	Intertidal flat
Palustrine/estuarine	Manuka scrub.	Wetland, intertidal flat
Palustrine/estuarine	Manuka-*Olearia solandri* scrub.	Wetland, intertidal flat
Palustrine/estuarine	Harakeke-*Olearia solandri*-saltmarsh ribbonwood-oioi shrubland.	Wetland, intertidal flat
Estuarine	Mangrove shrubland.	Intertidal flat
Estuarine	Mangrove-(glasswort) shrubland.	Intertidal flat
Estuarine	Oioi-saltmarsh ribbonwood shrub-sedgeland.	Intertidal flat
Estuarine	Glasswort herbfield.	Intertidal flat
Palustrine/estuarine	Ngaio/*Coprosma propinqua* subsp. *propinqua*-*Olearia solandri*-saltmarsh ribbonwood shrubland.	Wetland, intertidal flat
Palustrine/estuarine	*Olearia solandri*-*Coprosma propinqua* subsp. *propinqua*-toetoe/oioi-saltmarsh ribbonwood shrubland.	Wetland, intertidal flat
Palustrine/estuarine	*Coprosma propinqua* subsp. *propinqua*-toetoe-saltmarsh ribbonwood-*Olearia solandri*-manuka/oioi rushland.	Wetland, intertidal flat
Estuarine	Oioi-saltmarsh ribbonwood shrub-sedgeland.	Intertidal flat
Estuarine	*Olearia solandri*/oioi rushland.	Intertidal flat
Estuarine	Sandspit vegetation. (Beadel 1994a)	Intertidal flat

Indigenous Flora No significant species recorded.

Indigenous Fauna Banded rail and North Island fernbird (At Risk, Sparse) recorded in 1991 (Owen 1993).

Condition/Pressures Unknown.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	M
	3.3	H
	3.4	H
	3.5	H
	3.6	N/A
Diversity and Pattern	3.7	H
Naturalness	3.8	H
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	H
	3.12	H
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance National

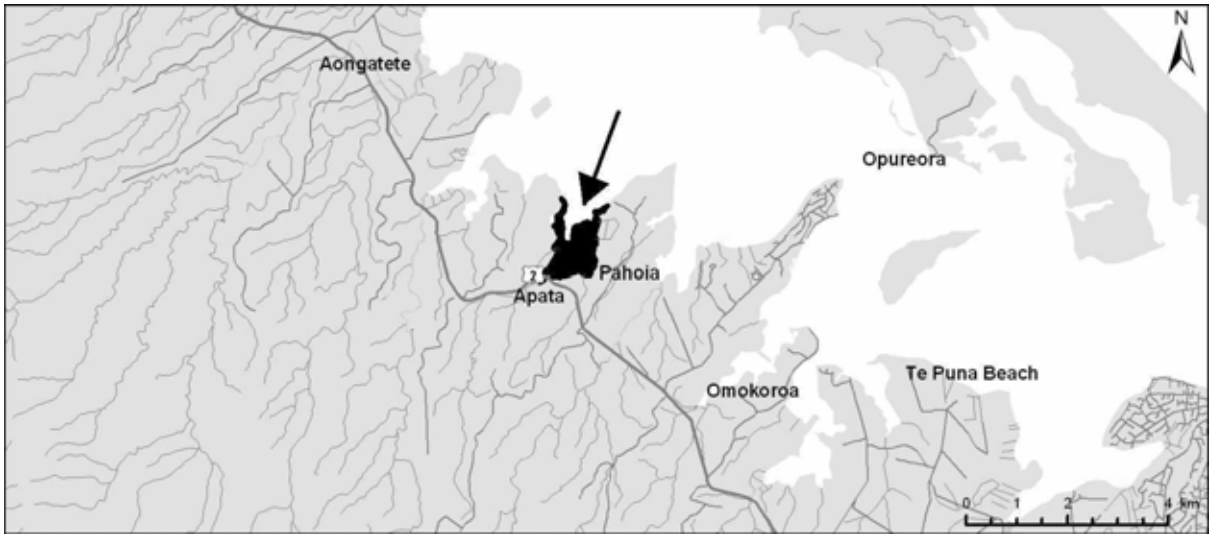
Significance Justification Te Hopai Island contains a high quality, diverse, representative vegetation sequence. It is probably the least modified substantial area of estuarine vegetation in Tauranga Harbour (Beadel 1992a). It provides habitat for two at risk bird species.

Notes Identified as a Category 1 natural heritage site in the Tauranga Ecological District (Beadel and Shaw 2000b), and the vegetation was ranked nationally significant by Beadel (1994a). This site is part of Mid Tauranga Harbour Key Ecological Zone.

References Beadel 1992a; Owen 1993; Beadel 1994a; Beadel and Shaw 2000b.

APATA ESTUARY

Site Number SVHZ-30
Grid Reference (NZMG) 2774412 6391358
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Unprotected
Site Area 74.1 ha
Altitudinal Range 0-20 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Palustrine	Grey willow forest.	Wetland
Palustrine	Raupo reedland.	Wetland
Estuarine	Mangrove scrub and shrubland.	Intertidal flat
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	Oioi rushland.	Intertidal flat
Estuarine	Sandspit vegetation.	Beach sands
	(Beadel 1992a; Beadel 1994a and current study)	

Indigenous Flora No significant species recorded.

Indigenous Fauna Banded rail, marsh crake and North Island fernbird (At Risk, Sparse) recorded in 1991 (Owen 1993).

Condition/Pressures Noted in 1991 (Owen 1993): stock access.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	M
	3.12	H
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

Significance Justification Apata Estuary contains a large, good quality stand of mangroves, with relatively narrow strips of saltmarsh along the margins. These indigenous vegetation and habitats are relatively common in Tauranga Harbour. Three at risk bird species have been recorded from here in the past.

References Beadel 1992a; Owen 1993; Beadel 1994a; Beadel and Shaw 2000b; current study.

NGAKAUTUAKINA POINT

Site Number SVHZ-31
Grid Reference (NZMG) 2776297 6392942
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Unprotected
Site Area 3.9 ha
Altitudinal Range 0-20 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa forest.	Hillslope/headland
Terrestrial	Mamaku-mahoe-gorse scrub. (Current study)	Hillslope/headland

Indigenous Flora The site is dominated by pohutukawa forest with smaller areas of secondary scrub. Indigenous species in the understorey of the pohutukawa forest include karaka, kawakawa, ponga, hangehange, *Gahnia* sp., and *Astelia banksii*. No notable species have been recorded.

Indigenous Fauna Possible though unconfirmed presence of moko skink (At Risk, Sparse), which inhabit some points in the inner Tauranga Harbour (John Heaphy pers. comm. 2006).

Condition/Pressures Exotic species include macrocarpa, brush wattle, wild ginger, ivy, pampas, and radiata pine. Adjacent residential properties may be a source of future weed invasions. Domestic cats and dogs may also be an issue, e.g. cats hunting moko skink. In the long-term, erosion of the coastal cliff may threaten the site.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	L
	3.3	L
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	L
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	L
Viability and Sustainability	3.11	L
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

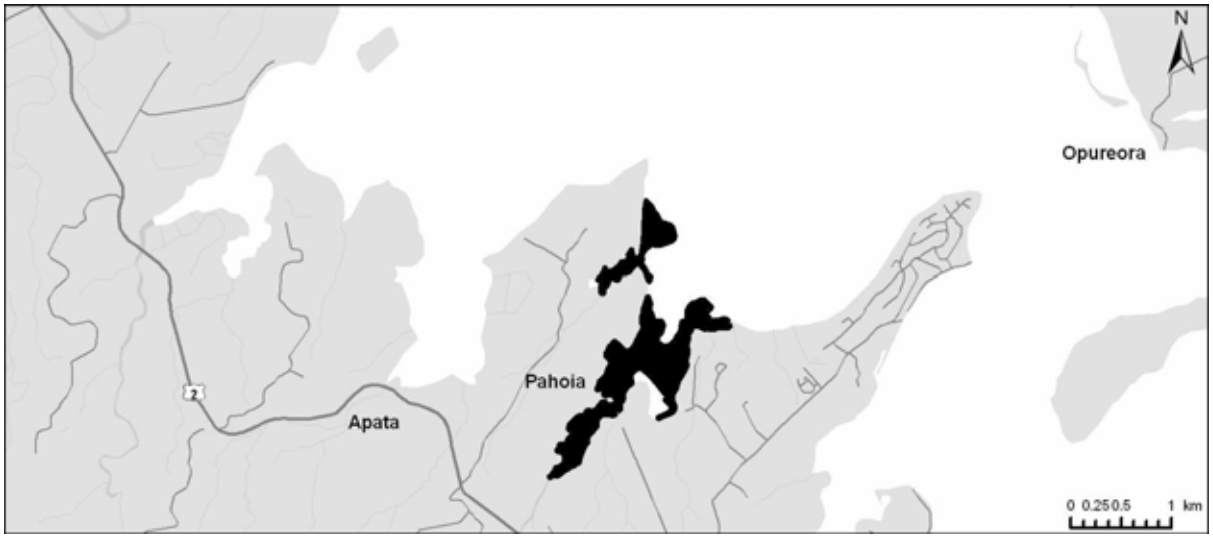
Relative Significance Local

Significance Justification The site is locally significant because it is a relatively small example of coastal pohutukawa forest. Pohutukawa forest was once common in Tauranga Ecological District, but has now been greatly reduced in extent and only small areas remain (e.g. Mauao, Kauri Point, Tuapiro, Matakana Point, Bowentown Heads, Motuhoa Island) (Beadel 1994a).

References Current study.

WAIPAPA ESTUARY

Site Number SVHZ-32
Grid Reference (NZMG) 2776341 6391212
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Protected (WBOPDC reserve) and unprotected parts
Site Area 76.7 ha
Altitudinal Range 0-43 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Palustrine	Grey willow forest.	Wetland
Estuarine	Mangrove scrub.	Intertidal flat
Palustrine	Manuka scrub.	Wetland
Estuarine	Mangrove shrubland.	Intertidal flat
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	Oioi-saltmarsh ribbonwood shrub-sedgeland.	Intertidal flat
Estuarine	Oioi rushland.	Intertidal flat
Palustrine	Raupo reedland.	Wetland
Estuarine	Sandspit vegetation.	Beach sands
Estuarine	Estuary margin vegetation.	Intertidal flat
Estuarine	*Olearia solandri*-oioi rushland.	Intertidal flat
Palustrine	Manuka-harakeke-toetoe shrubland. (Beadel 1992a and Beadel 1994a)	Wetland

Indigenous Flora No notable species have been recorded.

Indigenous Fauna Banded rail and North Island fernbird (At Risk, Sparse) were recorded in 1991 (Owen 1993). North Island fernbird were recorded again in 2006 (Wildland Consultants 2006a).

Condition/Pressures Recorded in 1991 (Owen 1993): stock access; weeds - woolly nightshade, grey willow, pampas, wilding pines.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	H
Naturalness	3.8	H
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	M
	3.12	H
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

Significance Justification Waipapa Estuary is regionally significant because it comprises relatively large, good quality representative examples of intertidal vegetation as well as small examples of freshwater wetlands contiguous with estuarine wetlands. There are recent or past records of two at risk bird species.

The vegetation to the west of the railway bridge is a representative, relatively large example of high quality oioi rushland inland from the main harbour adjacent to a tidal stream (Beadel 1994a).

Notes Identified as a Category 1 natural heritage site in the Tauranga Ecological District (Beadel and Shaw 2000b).

Reference Beadel 1992a; Owen 1993; Beadel 1994a; Beadel and Shaw 2000b; Wildland Consultants 2006a.

WAIPAPA ESTUARY WETLAND

Site Number SVHZ-33
Grid Reference (NZMG) 2776327 6391162
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Unprotected
Site Area 3.2 ha
Altitudinal Range 15-20m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Palustrine	Grey willow forest. (Beadel 1992a)	Wetland

Indigenous Flora No notable species have been recorded.

Indigenous Fauna No specific fauna information.

Condition/Pressures Heavy grey willow infestation.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	L
Rarity or Distinctive Features	3.2	L
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	L
Naturalness	3.8	L
Ecological Context	3.9	M
	3.10	L
Viability and Sustainability	3.11	L
	3.12	L
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

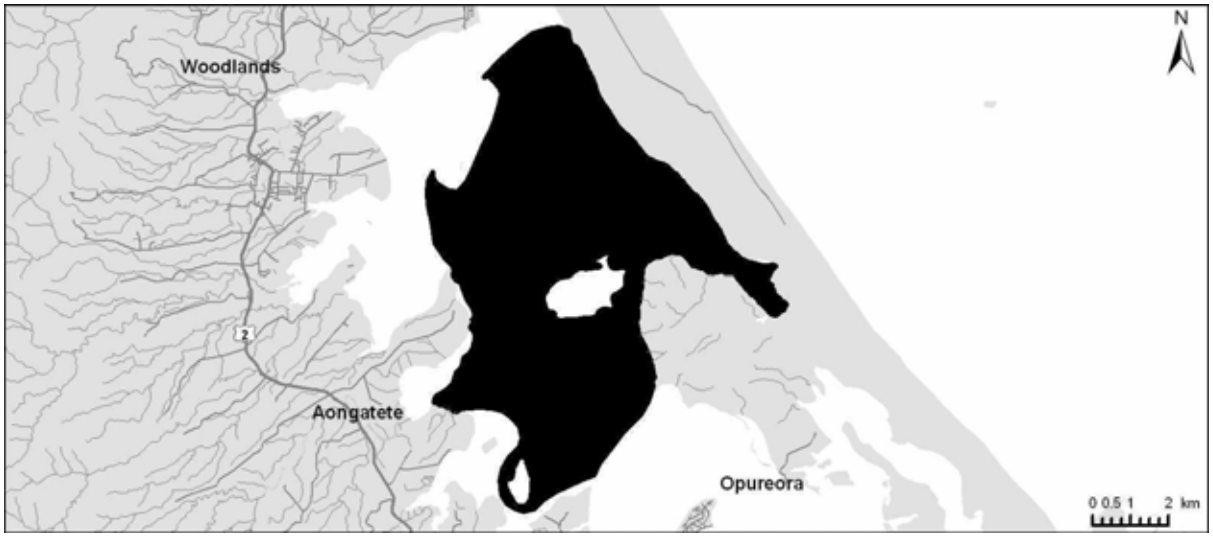
Relative Significance Local

Significance Justification This small freshwater wetland is dominated by grey willow, however it is locally significant due to its proximity to the Waipapa Estuary, which has similar freshwater wetlands around its margins contiguous with large areas of saltmarsh, and remaining wetlands are important for the maintenance of wetland bird populations. Freshwater wetlands have been greatly reduced within the Tauranga Ecological District.

Reference Beadel 1992a.

MID TAURANGA HARBOUR

Site Number SVHZ-34
Grid Reference (NZMG) 2775707 6399023
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Unprotected
Site Area 5,107.66 ha
Altitudinal Range 0-20 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	*Zostera* spp. grassland.	Intertidal and sub-tidal flat
Estuarine	Sandspit	Intertidal flat
Marine	Worm field.	Subtidal channel
Marine	Worm field.	Intertidal flat
Marine	Cockle bed.	Intertidal flat
Marine	Pipi bed.	Subtidal channel
Marine	Scallop bed.	Subtidal channel
Marine	Horse mussel field.	Subtidal channel
	(Beadel 1992a; Stephen Park, Environment BOP, pers. comm. 2006; current study)	

Indigenous Flora This site contains the most extensive areas of high-density *Zostera* spp. beds in Tauranga Harbour.

Indigenous Fauna Contains extensive intertidal flats that function as feeding grounds for wader bird species (principally godwit and pied oystercatcher), including areas adjacent to known, major wader roosting areas (Brian Chudleigh pers. comm. 2006).

Condition/Pressures Sediment and nutrient runoff that decreases levels of light reaching seabed may have contributed significantly to a 34% reduction in the extent of seagrass beds in Tauranga Harbour between 1959 and 1996 (Park 1999).

Control and eradication efforts in recent years mean that *Spartina*, a significant weed of intertidal flats, now poses a potential rather than an actual threat.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	H
	3.6	N/A
Diversity and Pattern	3.7	H
Naturalness	3.8	H
Ecological Context	3.9	H
	3.10	H
Viability and Sustainability	3.11	H
	3.12	H
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance National

Significance Justification The extensive intertidal flats found in the central part of Tauranga Harbour are close to major shorebird roosts (e.g. Matahui Point). This site also contains the second-largest area of high-density sea-grass beds in the harbour. Tauranga Harbour as a whole is regarded as meeting criteria to be considered a Ramsar Wetland of International Importance (Owen *et al.* 2006), and this site is a particularly high value component of it.

Notes This site is part of Mid Tauranga Harbour Key Ecological Zone.

References Beadel 1992a; Park 1999; Brian Chudleigh (OSNZ) pers. comm. 2006; current study.

MANGAWHAI BAY

Site Number	SVHZ-35
Grid Reference (NZMG)	2778358 6390309
Local Authority	Western Bay of Plenty District Council
Ecological District	Tauranga
Status	Protected (WBOPDC reserve) and unprotected parts
Site Area	16.9 ha
Altitudinal Range	0-12 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Mangrove scrub and shrubland.	Intertidal flat
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	Oioi rushland.	Intertidal flat
Estuarine/terrestrial	Sandspit habitat. (Beadel 1992a)	Sandspit

Indigenous Flora No notable species have been recorded.

Indigenous Fauna There is a high tide roost for wading birds at the northern end of this site (John Heaphy pers. comm. 2006). *Oligosoma* sp. skink and banded rail (At Risk, Sparse) sign recorded in 1991 (Owen 1993).

Condition/Pressures Dogs and people often disturb birds at the high tide roost (John Heaphy pers. comm. 2006). Recorded in 1991 (Owen 1993): stock access; mangrove destruction; reclamation; range of weed species present.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	L
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	L
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

Significance Justification Mangawhai Bay is locally significant because it includes, within a small site, good examples of indigenous vegetation (estuarine wetlands) which are relatively common in Tauranga Harbour. Direct human impacts and pest plants have exerted significant pressure on the natural character of the site. One at risk bird species has been recorded from here. This site acts as a protective buffer to the nationally significant Mangawhai Bay Intertidal Flats wader roosting area.

References Beadel 1992a; Owen 1993.

MANGAWHAI BAY INTERTIDAL FLATS

Site Number SVHZ-36
Grid Reference (NZMG) 2778756 6390372
Local Authority Western Bay of Plenty District
Ecological District Tauranga
Status Unprotected
Site Area 124.4 ha
Altitudinal Range 0-6 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	*Zostera* spp.(seagrass) grassland.	Intertidal and sub-tidal flat
Estuarine	Sandfield.	Sandbank
Estuarine	Intertidal flats. (Park 1999)	Intertidal flat

Indigenous Flora Sea grass beds are present (Park 1999).

Indigenous Fauna One of the most important roosting sites for waders (principally godwit and pied oystercatcher) in Tauranga Harbour, e.g. November/December 1999 census by OSNZ recorded 2,500 godwit; June/July 2000 OSNZ census recorded around 500 pied oystercatcher. The nearby Omokoroa golf course is infrequently used as a roost during unusually high spring tides or during bad weather/storm surges (Brian Chudleigh pers. comm. 2006). A sand bank roost at this site, used since around 2000, is the least subject to disturbance of the shorebird roosts around Omokoroa peninsula (Owen *et al.* 2006).

Condition/Pressures No information.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	L
	3.3	M
	3.4	L
	3.5	H
	3.6	H
Diversity and Pattern	3.7	L
Naturalness	3.8	H
Ecological Context	3.9	H
	3.10	H
Viability and Sustainability	3.11	H
	3.12	H
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance National

Significance Justification This site is one of the most important roosting sites for waders in Tauranga Harbour because of the large numbers and diversity of international and New Zealand migratory waders that flock here.

References Park 1999; Brian Chudleigh (OSNZ) pers. comm. 2006; Owen *et al.* 2006.

MANGAWHAI BAY INLET

Site Number SVHZ-37
Grid Reference (NZMG) 2777137 6388569
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Protected (WBOPDC reserve) and unprotected parts
Site Area 7.9 ha
Altitudinal Range 0-20 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Oioi-saltmarsh ribbonwood shrub-sedgeland.	Intertidal flat
Estuarine	Oioi rushland.	Intertidal flat
Estuarine	Sea rush tussockland.	Intertidal flat
Palustrine	Grey willow forest.	Wetland
Palustrine	Manuka shrubland.	Wetland
Palustrine	Raupo reedland.	Wetland
Estuarine	Mangrove scrub and shrublands. (Beadel 1992a)	Intertidal flat

Indigenous Flora No notable species have been recorded.

Indigenous Fauna Banded rail, North Island fernbird (At Risk, Sparse) recorded in 1991 (Owen 1993).

Condition/Pressures In 2006, pampas was noted on the margins and stock have access to at least parts of the site.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	L
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	M
	3.12	H
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

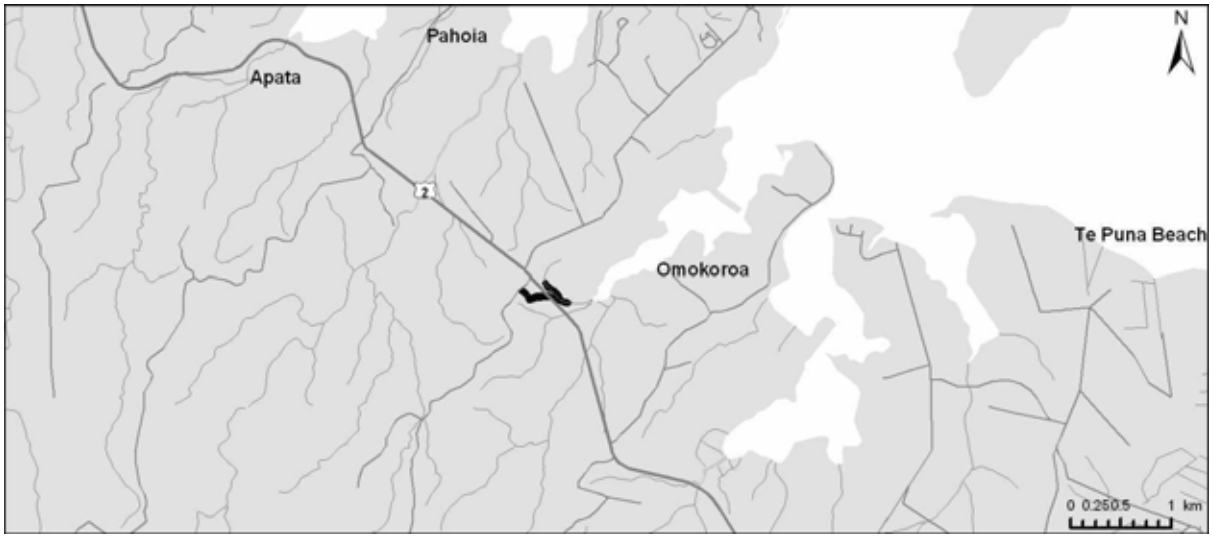
Relative Significance Local

Significance Justification Mangawhai Bay Inlet is locally significant as a small site that includes examples of indigenous vegetation (estuarine wetlands) which are typical of the vegetation of Tauranga Harbour, and small examples of freshwater wetlands. Stock access and pest plants are current pressures impacting on the natural character of the site. Two at risk bird species have been recorded from here.

References Beadel 1992a; Owen 1993; current study.

OMOKOROA WETLANDS

Site Number SVHZ-38
Grid Reference (NZMG) 2776374 6388330
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Unprotected
Site Area 1.4 ha
Altitudinal Range 20-35 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Palustrine	Grey willow/raupo forest.	Wetland
Palustrine	Grey willow-(ti kouka)/raupo treeland.	Wetland
Palustrine	Raupo reedland. (Current study)	Wetland

Indigenous Flora No field survey has been undertaken within this site for threatened or uncommon species.

Indigenous Fauna Long-finned eel (Chronically Threatened, Gradual Decline) has been recorded in small streams at the south end of Mangawhai Bay (Wildland Consultants 2006a). This site contains suitable habitat for spotless crake, which may be present.

Condition/Pressures The site is relatively long and narrow and is not fenced from adjacent pasture.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	L
Rarity or Distinctive Features	3.2	L
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	L
Naturalness	3.8	M
Ecological Context	3.9	L
	3.10	L
Viability and Sustainability	3.11	L
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

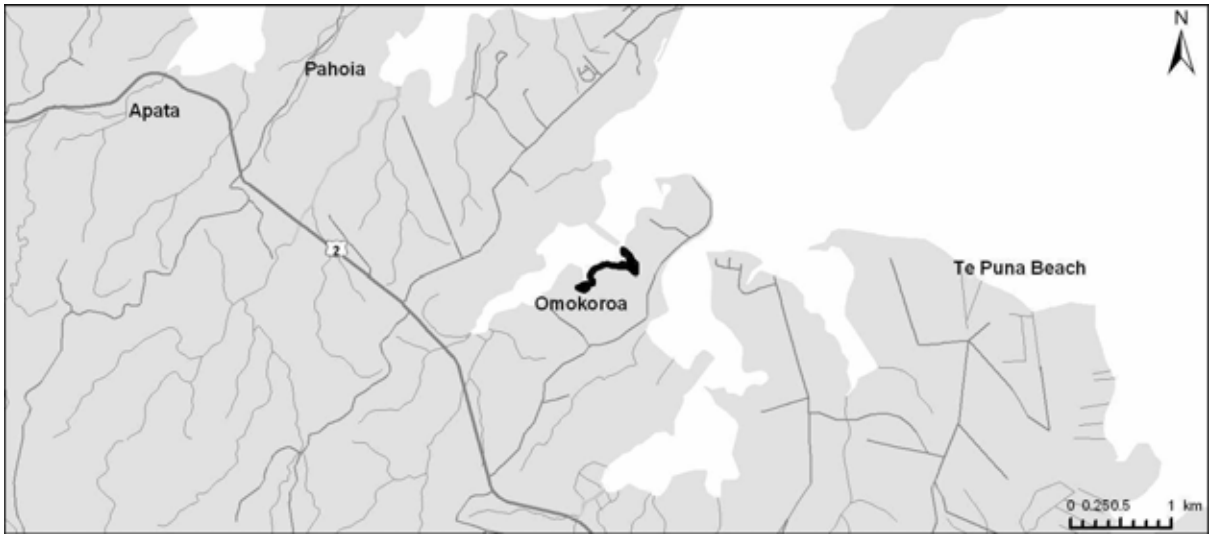
Relative Significance Local

Significance Justification The site is locally significant because it is an example of a habitat type which has been greatly reduced in extent at all scales (i.e. freshwater wetlands). It acts as a protective buffer to Mangawhai Bay and provides habitat for indigenous species of freshwater fish. It is degraded and an exotic species dominates the canopy in places, the site has the potential for restoration.

References Wildland Consultants 2006a; current study.

OMOKOROA

Site Number SVHZ-39
Grid Reference (NZMG) 2778260 6388911
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Unprotected
Site Area 2.4 ha
Altitudinal Range 0-6 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Mangrove scrub and shrublands.	Intertidal flat
Estuarine	Oioi rushland.	Intertidal flat
Estuarine	Sea rush tussockland. (Beadel 1992a)	Intertidal flat

Indigenous Flora No notable species have been recorded.

Indigenous Fauna Banded rail (At Risk, Sparse) recorded in 1991 (Owen 1993).

Condition/Pressures Recorded in 1991 (Owen 1993): stock access; encroaching weeds.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	L
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	L
	3.12	H
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

Significance Justification Omokoroa is locally significant because it includes small examples of indigenous vegetation (estaurine wetlands) which are typical of the vegetation of Tauranga Harbour. Two at risk bird species were recorded in 1991.

References Beadel 1992a; Owen 1993.

JESS ROAD

Site Number	SVHZ-40
Grid Reference (NZMG)	2778790 6388145
Local Authority	Western Bay of Plenty District Council
Ecological District	Tauranga
Status	Protected (DOC, Jess Road Wildlife Management Reserve) and unprotected parts
Site Area	28.6 ha
Altitudinal Range	0-17 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Mangrove scrub and shrubland.	Intertidal flat
Estuarine	Sea rush-mangrove rushland.	Intertidal flat
Estuarine	Mudflat.	Intertidal flat
Estuarine	Dead manuka scrub.	Intertidal flat
Palustrine	Constructed pond.	Wetland
Palustrine	*Carex geminata* sedgeland.	Wetland
Palustrine	Raupo reedland.	Wetland
Terrestrial	Exotic scrub and shrubland.	Constructed bund
	(Wildland Consultants 2005c and 2006e)	

Indigenous Flora No notable species have been recorded.

Indigenous Fauna Banded rail (At Risk, Sparse) recorded in 1991 (Owen 1993) and on several occasions since 2003 (OSNZ 2006). Other relatively common indigenous species of birds which were recorded at the site in 1996 include kingfisher, pukeko, spur-winged plover, white-faced heron, pied stilt, and paradise shelduck (Shaw 2002d).

Condition/Pressures The site is divided by a railway embankment with a flood-gate (now permanently open). The part of the site to the west of the railway embankment began being reflooded with saltwater in 1998, after being drained and grazed for many decades (Wildland Consultants 2005c). It now comprises large areas of intertidal mudflats with densely establishing mangroves seedlings, substantial areas of dead manuka and remnant patches of sea rush. Some illegal earthworks were carried out here in 2001 (Shaw 2002d).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	L
Naturalness	3.8	L
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

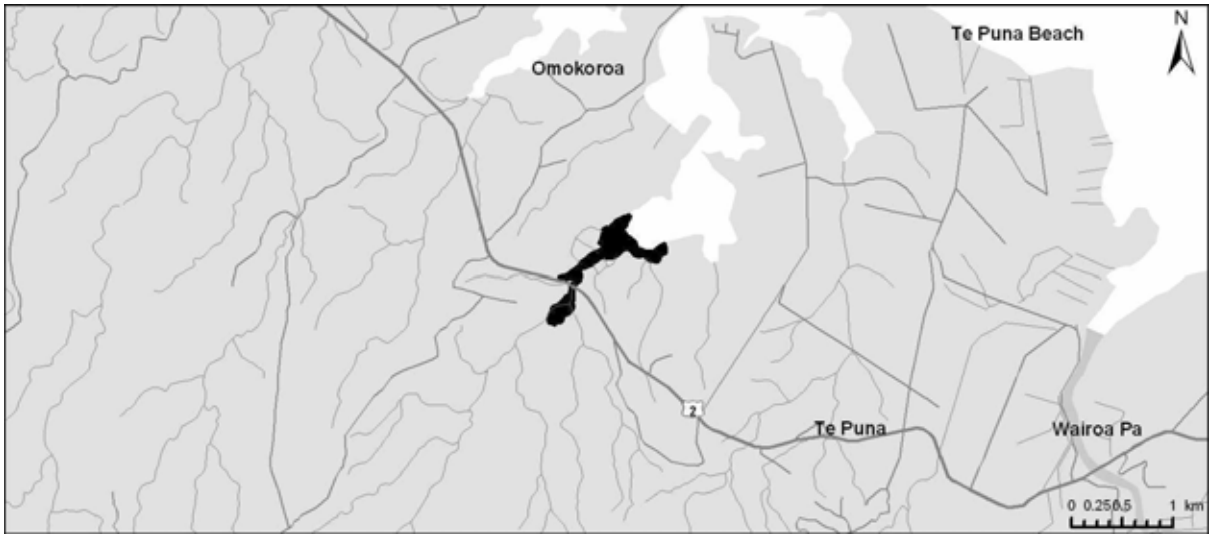
Significance Justification Jess Road is locally significant because it includes examples of indigenous vegetation types (estuarine wetlands) which are typical of the vegetation of Tauranga Harbour, and small examples of freshwater wetlands. One at risk bird species is currently known from this site. The part of this site which is west of the railway line (i.e. within the Wildlife Management Reserve) is highly modified and degraded but is currently being restored by DOC.

Notes Beadel (1996) provides a detailed description of the vegetation in the inlet as it was ten years ago, and Shaw (2002d) details changes over the periods 1998-2001 and 2001-2002. The Te Puna Estuary Managers Group and DOC are currently involved in restoration of the Jess Road site, along with other parts of the wider Te Puna Estuary (Wildland Consultants 2005c).

References Beadel 1992a; Owen 1993; Beadel (1996); OSNZ 2006; Shaw 2002d; Wildland Consultants 2005c; Wildland Consultants 2006e.

TE PUNA ESTUARY

Site Number SVHZ-41
Grid Reference (NZMG) 2778195 6386670
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Unprotected
Site Area 16.8 ha
Altitudinal Range 0-20 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	(Saltmarsh ribbonwood)/oioi-sea rush rushland.	Intertidal flat
Estuarine	Mangrove shrubland.	Intertidal flat
Estuarine	Mixed intertidal vegetation (raupo, saltmarsh ribbonwood, harakeke, oioi and mangrove seedlings).	Intertidal flat
Riverine	Manuka/raupo-toetoe scrub.	Wetland
Riverine	Grey willow-manuka/(gorse)/pasture forest. (Wildland Consultants 2005c)	Wetland

Indigenous Flora No notable species have been recorded.

Indigenous Fauna Banded rail (sign only), North Island fernbird (At Risk, Sparse) recorded in 1991 (Owen 1993).

Condition/Pressures Saltwater paspalum (*Paspalum vaginatum*) is encroaching from the land into the margins of the mangrove shrubland in this site. Grazing animals have access to the freshwater wetlands. Grey willow is encroaching on the margins of the manuka/raupo-toetoe scrub (Wildland Consultants 2005c). A serious infestation of pampas was noted in 2005 (Wildland Consultants 2005c). Also recorded in 1991 (Owen 1993): extensive reclamation.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	L
	3.6	H
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	M
	3.12	H
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

Significance Justification Te Puna Estuary is locally significant because it includes examples of indigenous vegetation types (estuarine and freshwater wetlands) that are typical of the vegetation of Tauranga Harbour. Two at risk bird species were recorded in 1991. Stock and pest plants are current pressures operating on the site.

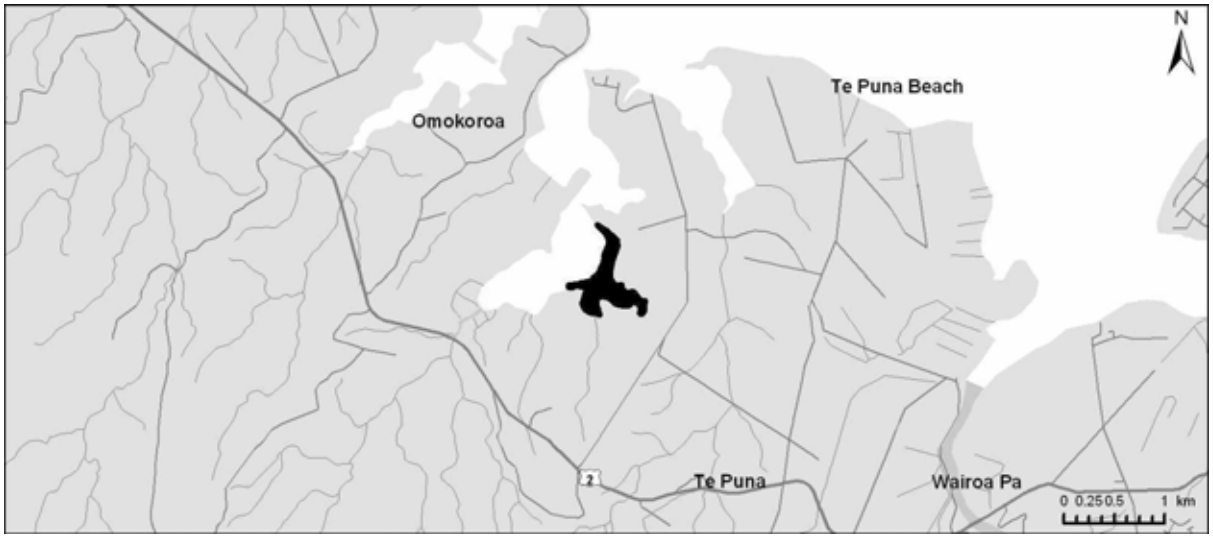
Notes The vegetation of the small manuka-dominated wetland on the Te Puna Stream mouth was recognised by Beadel (1994a) as a site of District significance. 'Manuka forest would once have been relatively common adjacent to tidal streams of Tauranga Harbour, but has been greatly reduced in extent. This site comprises a good quality example of this type' (Beadel 1994a).

If further investigations show that threatened species regularly used this site, its significance would be elevated (it is potentially a habitat of North Island fernbird, banded rail and marsh crake).

References Beadel 1994a; Wildland Consultants 2005c.

SNODGRASS ROAD INLET

Site Number SVHZ-42
Grid Reference (NZMG) 2779417 6386972
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Protected (WBOPDC reserve) and unprotected parts
Site Area 17.1 ha
Altitudinal Range 0-20 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Mangrove scrub and shrubland.	Intertidal flat
Palustrine	Grey willow forest.	Wetland
Estuarine	Raupo reedland.	Intertidal flat
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	Oioi rushland.	Intertidal flat
	(Beadel 1992a)	

Indigenous Flora No notable species have been recorded.

Indigenous Fauna Banded rail (At Risk, Sparse) recorded in 1991 (Owen 1993).

Condition/Pressures Noted in 1991 (Owen 1993): stock access; weeds present.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	L
	3.6	N/A
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	L
Viability and Sustainability	3.11	M
	3.12	H
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

Significance Justification Snodgrass Road Inlet is locally significant because it includes examples of indigenous vegetation (estuarine wetlands) which are typical of the vegetation of Tauranga Harbour, and modified examples of freshwater wetlands. One at risk bird species has been recorded here in the past.

References Beadel 1992a; Owen 1993; Wildland Consultants 2005c.

NEWNHAM ROAD

Site Number SVHZ-43
Grid Reference (NZMG) 2779600 6387793
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Protected (WBOPDC reserve) and unprotected parts
Site Area 5.1 ha
Altitudinal Range 0-4 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Mangrove scrub and shrubland.	Intertidal flat
Terrestrial	Sandspit.	Beach sand
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	Oioi rushland.	Intertidal flat
Terrestrial	Manuka scrub.	Alluvial plain
	(Beadel 1992a, Wildland Consultants 2005c)	

Indigenous Flora No notable species have been recorded.

Indigenous Fauna Australasian bittern (Acutely Threatened, Nationally Endangered); banded rail sign recorded, North Island fernbird (At Risk, Sparse) possibly detected in 1990 (Owen 1993).

Condition/Pressures Noted in 1990 (Owen 1993): rubbish dumping; various weed species present.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	L
Viability and Sustainability	3.11	M
	3.12	H
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

Significance Justification Newnham Road is locally significant because it includes examples of indigenous vegetation (estuarine wetlands) which are typical of the Tauranga Harbour. One nationally endangered and two at risk bird species have been recorded in the past.

References Beadel 1992a; Owen 1993; Wildland Consultants 2005c.

WAIKARAKA ESTUARY

Site Number SVHZ-44
Grid Reference (NZMG) 2780624 6388100
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Protected (WBOPDC reserve) and unprotected parts
Site Area 12.9 ha
Altitudinal Range 0-14 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Oioi rushland.	Intertidal flat
Estuarine	Sea rush tussockland	Intertidal flat
Estuarine	Mangrove scrub and shrubland.	Intertidal flat
Terrestrial	Manuka scrub.	Alluvial plain
Estuarine	Grey willow forest.	Wetland
Terrestrial	Manuka shrubland.	Alluvial plain
Estuarine	Oioi-sea rush-*Baumea juncea* sedgeland (Beadel 1992a, Wildland Consultants 2003d)	Intertidal flat

Indigenous Flora No significant species have been recorded.

Indigenous Fauna Australasian bittern (Acutely Threatened, Nationally Endangered) sign, banded rail, North Island fernbird (At Risk, Sparse) recorded in 1991 (Owen 1993).

Condition/Pressures Much of the catchment has been cleared for agricultural, horticultural, and residential development. Indigenous coastal forest on margins has been replaced by tree privet, Lombardy poplar, eucalyptus, and woolly nightshade. Sedimentation and eutrophication has led to a reduction in sea grass beds. Numerous weed infestations are present (e.g. grey willow) and there are ad hoc structures around the estuarine margins (e.g. retaining walls). The Waikaraka Estuary Management Group has been actively restoring this site since 2003 (Wildland Consultants 2003d).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	M
	3.12	H
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

Significance Justification Waikaraka Estuary is locally significant because it includes examples of indigenous vegetation types which are typical of the vegetation of Tauranga Harbour, within a relatively small site. One nationally endangered and two at risk bird species have been recorded in the past.

References Beadel 1992a; Owen 1993; Wildland Consultants 2003d.

WAIPA ROAD

Site Number SVHZ-45
Grid Reference (NZMG) 2780577 6388989
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Unprotected
Site Area 4.5 ha
Altitudinal Range 0-9 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Mangrove shrubland.	Intertidal flat
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	Oioi rushland.	Intertidal flat
Estuarine	Oioi-sea rush-*Baumea juncea* sedgeland.	Intertidal flat
	(Beadel 1992a, Wildland Consultants 2003d)	

Indigenous Flora No notable species recorded

Indigenous Fauna Banded rail and North Island fernbird (At Risk, Sparse) recorded in 1991 (Owen 1993).

Condition/Pressures Pampas, gorse, blackberry, and saltwater paspalum present. This site is part of an area being restored by the Waikaraka Estuary Management Group (Wildland Consultants 2003d).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	L
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

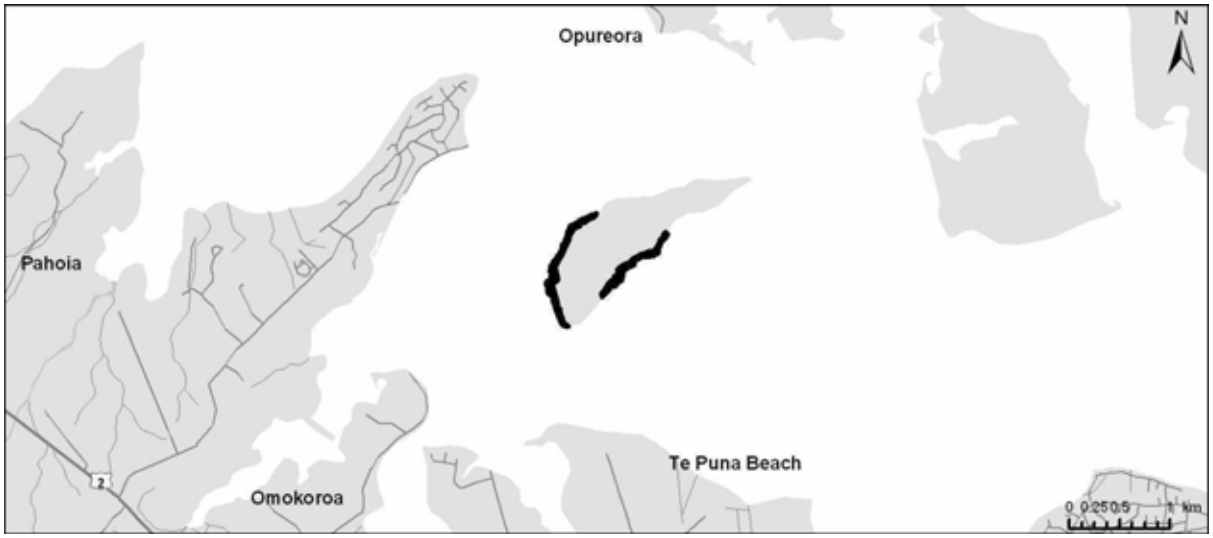
Relative Significance Local

Significance Justification Waipa Road is locally significant because it is small example of vegetation/habitat types which are typical of the indigenous biodiversity of the Tauranga Ecological District. Two at risk bird species have been recorded here in the past. It also has a range of pressures typical of many natural areas around Tauranga Harbour.

References Beadel 1992a; Owen 1993; Wildland Consultants 2003d.

MOTUHOA ISLAND

Site Number SVHZ-46
Grid Reference (NZMG) 2780858 6390876
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Unprotected
Site Area 8.2 ha
Altitudinal Range 0-20 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa forest. (Beadel 1994a)	Cliff, steep hillslope

Indigenous Flora Pohutukawa forest.

Indigenous Fauna Shore skink (not threatened) (John Heaphy pers. comm. 2006).

Condition/Pressures No information.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	L
	3.3	L
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	L
Naturalness	3.8	M
Ecological Context	3.9	L
	3.10	L
Viability and Sustainability	3.11	L
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

Significance Justification 'Pohutukawa forest was once abundant on hillslopes and headlands around Tauranga Harbour. This is a good example of the remaining areas of pohutukawa forest within the ecological district' Beadel (1994a).

Notes The vegetation of this site was previously ranked as being of local significance in Beadel (1994a).

References Beadel (1994a).

KUKA ROAD WETLANDS

Site Number SVHZ-47
Grid Reference (NZMG) 2781574 6388791
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Unprotected
Site Area 7.7 ha
Altitudinal Range 14-20 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Palustrine	Raupo reedland.	Wetland
Palustrine	Grey willow forest.	Wetland
Terrestrial	Manuka shrubland. (Beadel 1992a)	Wetland

Indigenous Flora No significant species recorded.

Indigenous Fauna No significant species recorded.

Condition/Pressures Noted in 1991 (Owen 1993): stock access; range of weed species present

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	L
Rarity or Distinctive Features	3.2	L
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	L
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	L
Viability and Sustainability	3.11	L
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

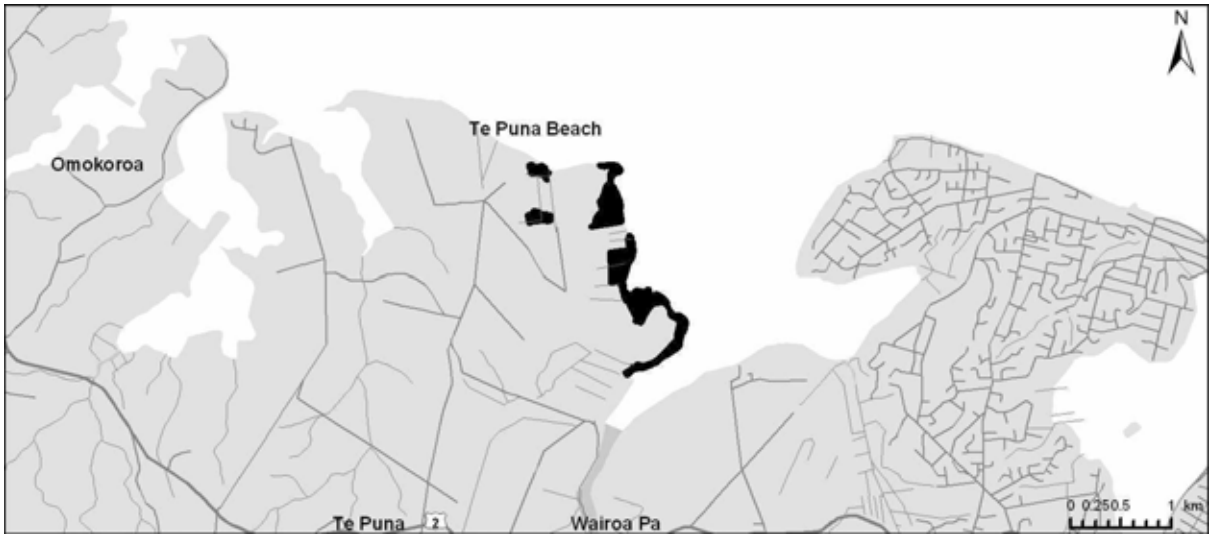
Relative Significance Local

Significance Justification This site is locally significant as it is freshwater wetland, a habitat type that has been significantly decreased in extent throughout New Zealand, albeit one that is modified by stock access and the presence of a range of weed species.

References Beadel 1992a; Owen 1993.

OIKIMOKE

Site Number SVHZ-48
Grid Reference (NZMG) 2783123 6387646
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Protected (WBOPDC reserve) and unprotected parts
Site Area 29.3 ha
Altitudinal Range 0-20 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Palustrine	Grey willow forest.	Wetland
Palustrine	Manuka shrubland.	Wetland
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	Oioi rushland.	Intertidal flat
Estuarine	Mangrove scrub and shrubland.	Intertidal flat
Estuarine	Oioi-*Baumea juncea* sedgeland. (Beadel 1992a)	Intertidal flat

Indigenous Flora No notable species have been recorded.

Indigenous Fauna The small sandspit at the northern end of the site is a nesting area for NZ dotterel (Acutely Threatened, Nationally Vulnerable) (John Heaphy pers. comm. 2006). Sandspit at Oikimoke Point and shoreline to the south are roosts for a range of shorebird species (Owen *et al.* 2006). Banded rail, Australasian bittern, spotless crake and North Island fernbird were recorded in 1991 (Owen 1993).

Condition/Pressures Noted in 1991 (Owen 1993): some reclamation; stock access; *Spartina*, woolly nightshade, pampas, wattle, grey willow present.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	L
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	M
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

Significance Justification Oikimoke is locally significant because it includes typical examples of indigenous vegetation types which are relatively common in Tauranga Harbour.

The comparative size of this site is offset by its degree of fragmentation and convoluted shape which increase its exposure to pressures such as invasive weeds and surrounding intensive land uses. It may be a locally-important breeding site for acutely threatened northern NZ dotterel, while other acutely threatened and at risk bird species have been recorded here in the past. If these species remain at the site and use it on a regular basis.

References Beadel 1992a; Owen 1993; Owen *et al.* 2006.

WAIROA RIVER

Site Number SVHZ-49
Grid Reference (NZMG) 2783412 6385816
Local Authority Tauranga City Council, Western Bay of Plenty District Council
Ecological District Tauranga
Status Unprotected
Site Area 38.1 ha
Altitudinal Range 0-20 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Gorse-pampas-harakeke-saltmarsh ribbonwood/sea rush-oioi-mangrove tussockland.	Intertidal flat
Estuarine	Sea rush-oioi-(pasture) tussockland.	Intertidal flat
Estuarine	Sea rush-(pasture) tussockland.	Intertidal flat
Estuarine	Mangrove shrubland.	Intertidal flat
Estuarine	Saltmarsh ribbonwood shrubland.	Intertidal flat
Estuarine	Mangrove scrub.	Intertidal flat
Palustrine	Manuka scrub.	Wetland
Terrestrial	Gorse-woolly nightshade scrub.	Hillslope
Estuarine	Oioi-*Baumea juncea* sedgeland.	Intertidal flat
Estuarine	Oioi rushland.	Intertidal flat
Estuarine	Oioi-saltmarsh ribbonwood shrub-sedgeland.	Intertidal flat
Estuarine	*Coprosma propinqua* subsp. *propinqua*/oioi rushland.	Intertidal flat
Palustrine	Raupo-oioi-*Baumea articulata* reedland.	Wetland
Palustrine	*Baumea articulata-Bolboschoenus fluviatilis*-raupo reedland.	Wetland
Terrestrial	Brush wattle-mamaku-ti kouka forest.	Hillslope
Palustrine	Grey willow forest.	Wetland
Terrestrial	She oak-wattle treeland. (Wildland Consultants 2005j)	Hillslope

Indigenous Flora No significant species recorded.

Indigenous Fauna Australasian bittern (Acutely Threatened, Nationally Endangered); banded rail, North Island fernbird, spotless crake (At Risk, Sparse) recorded in 1990 (Owen 1993). Grey duck (Acutely Threatened, Nationally Endangered), red-

billed gull (Chronically Threatened, Gradual Decline) and North Island fernbird have been recorded at this site within the last four years (Wildland Consultants 2002a; 2005j).

Condition/Pressures

The following weed species are present within the site in suitable habitat: smilax, she-oak, black wattle, tree privet, Chinese privet, woolly nightshade, grey willow, blackberry, brush wattle, gorse and pampas (Wildland Consultants 2005j).

Weed species present within the site that have increased in abundance and distribution since 2000 include brush wattle, she-oak, and possibly black wattle. Grey willow, pampas, and tree privet are widespread in suitable habitat but there has been no detectable change in their distribution and abundance since 2000. This is probably a reflection of the fact that they were widespread in 2000 and already occupied almost all suitable habitats and micro-sites (Wildland Consultants 2005j).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	L
	3.5	L
	3.6	H
Diversity and Pattern	3.7	H
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance

Regional

Significance Justification

A site of reasonable size and a diverse range of indigenous vegetation types that it is of regional significance. This site contains a representative example of freshwater wetland vegetation adjacent to a river channel (Beadel 1994a). Two acutely threatened, one chronically threatened, and three at risk bird species have been recorded at the site, several within the last four years.

Notes

This site is ranked as a Category 1 Special Ecological Site (SES) in Tauranga City (Wildland Consultants 2005j) and the vegetation was identified as being of District significance by Beadel (1994a).

Identified as a Category 1 natural heritage site in the Tauranga Ecological District (Beadel and Shaw 2000b).

References

Owen 1993; Beadel 1994a; Beadel and Shaw 2000b; Wildland Consultants 2005j.

MATUA ESTUARY – YORKE PARK

Site Number SVHZ-50
Grid Reference (NZMG) 2785897 6387185
Local Authority Tauranga City Council
Ecological District Tauranga
Status Protected (TCC reserve) and unprotected parts
Site Area 49.1
Altitudinal Range 0-20 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Gorse-pampas-harakeke-saltmarsh ribbonwood/sea rush-oioi-mangrove tussockland.	Intertidal flat
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	Sea rush-mangrove-oioi-saltmarsh ribbonwood tussockland.	Intertidal flat
Estuarine	Sea rush-oioi-mangrove tussockland.	Intertidal flat
Estuarine	Mangrove scrub.	Intertidal flat
Estuarine	Manuka scrub.	Intertidal flat
Estuarine	Akeake-manuka-tarata-kohuhu-ti kouka-ngaio-koromiko-harakeke scrub.	Intertidal flat
Estuarine	Mangrove shrubland.	Intertidal flat
Estuarine	Oioi-sea rush sedgeland.	Intertidal flat
Estuarine	(Grey willow)/(manuka)/oioi-sea rush-(raupo) sedgeland.	Intertidal flat
Estuarine	Oioi-sea rush sedgeland.	Intertidal flat
Estuarine	Oioi-sea rush sedgeland.	Intertidal flat
Estuarine	Raupo reedland.	Wetland
Estuarine	Oioi rushland.	Intertidal flat
Estuarine	Japanese honeysuckle/*Carex geminata* vineland.	Intertidal flat
Estuarine	Manuka-raupo shrubland.	Intertidal flat
Estuarine	Mangrove loamfield. (Wildland Consultants 2005j)	Intertidal flat

Indigenous Flora No notable species have been recorded.

Indigenous Fauna Australasian bittern (Acutely Threatened, Nationally Endangered); banded rail, North Island fernbird (At Risk, Sparse) recorded in 1990 (Owen 1993).

Condition/Pressures Noted in 1990 (Owen 1993): stock access; extensive reclamation and drain works; range of weeds present; stormwater run-off. Past modification (e.g. extensive drains, grazing and fences) was noted as having a strong impact in this saltmarsh in 1992, however recovery and improvement in condition was beginning to happen (Beadel 1994a).

Wildland Consultants (2005j) noted the following weed species on site: arum lily, wild ginger, she-oak, Taiwan cherry, tradescantia, black wattle, Chinese privet, Japanese honeysuckle, grey willow, blackberry, brush wattle, gorse and pampas.

The northern end of Matua saltmarsh is the subject of a community restoration project which has carried out weed control and reduced the distribution and abundance of pampas and wild ginger (and also probably of other species). Wild ginger, gorse, and brush wattle are present on the railway embankment and on the margins of the drains, especially towards the centre of the saltmarsh. In contrast, weed control does not appear to have been undertaken in the Yorke Park part, and grey willow and pampas remain common. (Wildland Consultants 2005j)

The following activities have impacted on the site: drainage has had a minor negative impact, planting has had a minor positive impact, and restoration works and weed control have had a moderate positive impact (Wildland Consultants 2005j).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	L
	3.5	L
	3.6	H
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	L
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

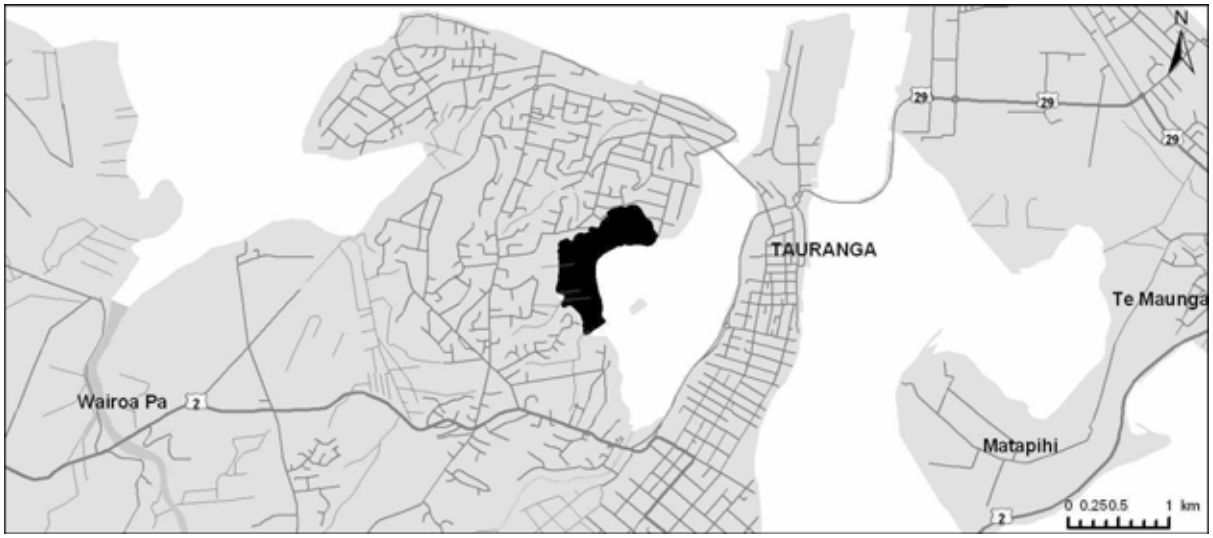
** H = High, M = Medium, L = Low.

Relative Significance Regional

Significance Justification	A substantial site supporting a diverse range of vegetation types, including representative examples of indigenous estuarine wetlands and small examples of freshwater wetlands. A wide range of pest plants are present, but the effects of these and other pressures are being alleviated by active restoration efforts. One acutely threatened and two at risk bird species have been recorded from here.
Notes	This site is ranked as a Category 1 Special Ecological Site (SES) in Tauranga City and is the subject of a community-led restoration project (Wildland Consultants 2005j). Identified as a Category 1 natural heritage site in the Tauranga Ecological District (Beadel and Shaw 2000b).
References	Owen 1993; Beadel 1994a; Beadel and Shaw 2000b; Wildland Consultants 2005j.

WAIKAREAO ESTUARY 1

Site Number SVHZ-51
Grid Reference (NZMG) 2787799 6386419
Local Authority Tauranga City Council
Ecological District Tauranga
Status Protected (TCC reserve) and unprotected parts
Site Area 42.5 ha
Altitudinal Range 0-22 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Grey willow forest.	River flat
Estuarine	Grey willow-manuka-(ti kouka)/raupo-pampas treeland.	River flat
Estuarine	*Coprosma propinqua* subsp. *propinqua*-manuka-pampas shrubland.	Intertidal flat
Estuarine	Mangrove shrubland.	Intertidal flat
Estuarine	Mangrove shrubland.	Intertidal flat
Estuarine	Mamaku-tarata-Taiwan cherry-kohuhu-titoki-karaka-makomako scrub.	River flat
Estuarine	Saltmarsh ribbonwood/oioi-sea rush sedgeland.	Intertidal flat
Estuarine	Manuka/oioi-sea rush-saltmarsh ribbonwood sedgeland.	Intertidal flat
Estuarine	(Manuka)/oioi-sea rush-saltmarsh ribbonwood sedgeland.	Intertidal flats
Estuarine	Mangrove loamfield. (Wildland Consultants 2005j)	Intertidal flat

Indigenous Flora No notable species have been recorded.

Indigenous Fauna Banded rail and North Island fernbird (At Risk, Sparse) recorded in 1990 (Owen 1993), and North Island fernbird in 2002 and 2005 (Wildland Consultants 2002a; 2005j). Shorebirds roost along the saltmarsh edges, especially on neap tides (Owen *et al.* 2006).

Condition/Pressures The following weed species are present within the site: plectranthus, reed sweetgrass, tuber ladder fern, climbing asparagus, silver poplar, arum lily, wild ginger, moth plant, she-oak, Taiwan cherry, tradescantia, black wattle,

tree privet, Chinese privet, grey willow, brush wattle, gorse and pampas (Wildland Consultants 2005j).

In this site the distribution of wild ginger and tradescantia has increased over recent years. Grey willow and Taiwan cherry remain abundant and widespread, and are canopy dominants on the northern, landward, side of the site. Invasive weeds present on the margin of the wetland and at the base of the hillslope include pampas, Japanese honeysuckle, tuber ladder fern, Chinese privet, arum lily, and reed sweetgrass (Wildland Consultants 2005j).

The following activities have impacted on the site: drainage has had a minor negative impact and planting has had a minor positive impact (Wildland Consultants 2005j).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	L
	3.6	H
Diversity and Pattern	3.7	H
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

Significance Justification This is a substantial, relatively compact site with diverse indigenous vegetation. The large number of weed species present probably reflects its urban setting, as do the impacts of direct human activity. There are current records of two at risk bird species at this site.

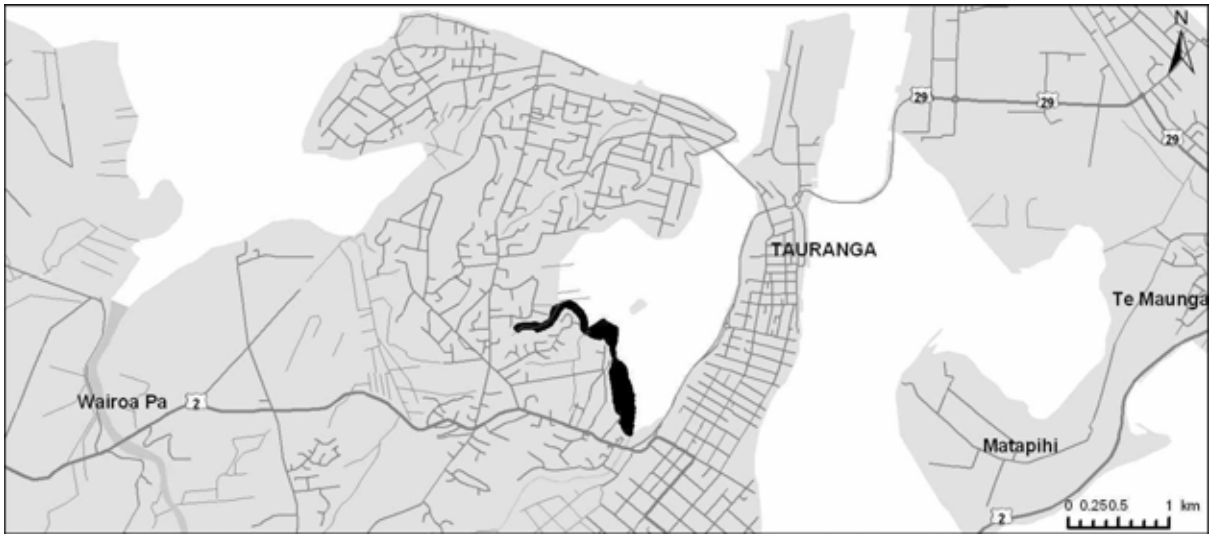
Notes This site is ranked as a Category 1 Special Ecological Site (SES) in Tauranga City (Wildland Consultants 2005j) and the vegetation was identified as being of District significance by Beadel (1994a).

Identified as a Category 1 natural heritage site in the Tauranga Ecological District (Beadel and Shaw 2000b).

References Owen 1993; Beadel 1994a; Beadel and Shaw 2000b; Wildland Consultants 2002a; Wildland Consultants 2005j; Owen *et al.* 2006.

WAIKAREAO ESTUARY 2

Site Number SVHZ-52
Grid Reference (NZMG) 2787880 6385366
Local Authority Tauranga City Council
Ecological District Tauranga
Status Protected (TCC reserve) and unprotected parts
Site Area 15.1 ha
Altitudinal Range 0-20 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Mangrove scrub.	Intertidal flat
Estuarine	Mamaku treefernland.	Intertidal flat
Estuarine	Mangrove shrubland.	Intertidal flat
Estuarine	*Olearia solandri*-harakeke-saltmarsh ribbonwood-oioi-*Baumea juncea*-pampas-grey willow shrubland.	Intertidal flat
Estuarine	Mangrove loamfield.	Intertidal flat
Estuarine	Oioi-saltmarsh ribbonwood shrub-sedgeland.	Intertidal flat
Estuarine	Oioi-sea rush-(saltmarsh ribbonwood) sedgeland.	Intertidal flat
Estuarine	Grey willow/pampas-harakeke tussockland.	Intertidal flat
Estuarine	Sea rush-oioi tussockland.	Intertidal flat
Riverine	Grey willow/raupo forest.	Wetland
Terrestrial	Whau-karamu-taupata-manuka-karo-harakeke shrubland.	Gully
Terrestrial	Mamaku/kawakawa shrubland.	Gully
Riverine	Pampas-harakeke-manuka-*Coprosma propinqua* subsp. *propinqua*/raupo-bracken-(*Baumea articulata*) shrub-tussockland. (Wildland Consultants 2005j)	Wetland

Indigenous Flora No notable species have been recorded

Indigenous Fauna Banded rail (At Risk, Sparse) recorded in 1990 (Owen 1993). Fernbird (At Risk, Sparse) was present in 2005.

Condition/Pressures Noted in 1990 (Owen 1993): reclamation and drainage works; domestic rubbish dumping; grey willow, wattle and *Spartina spp. p*resent.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	L
	3.6	H
Diversity and Pattern	3.7	H
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

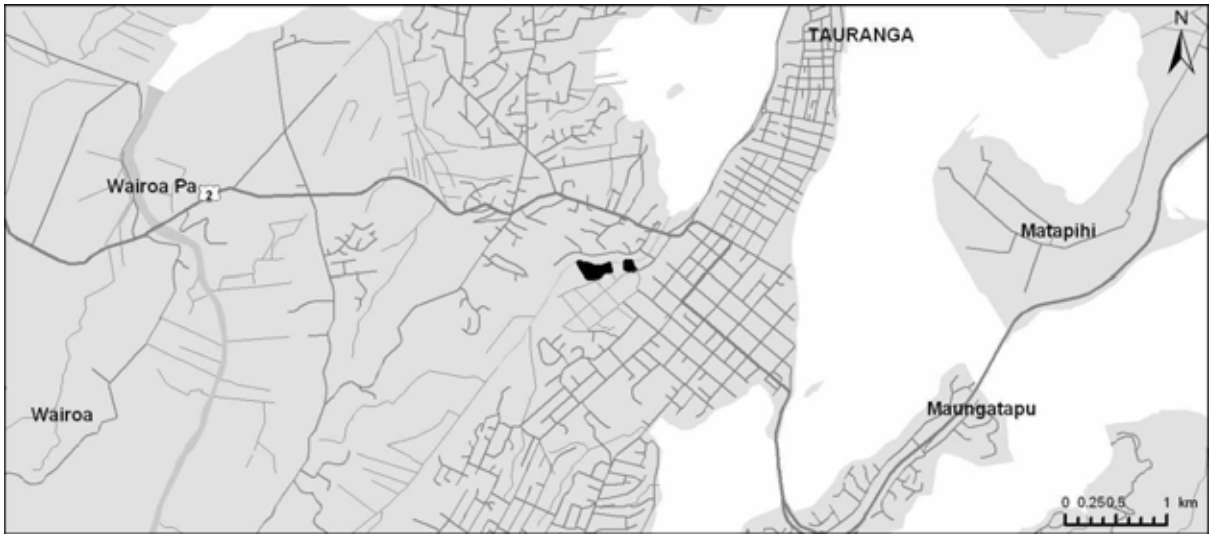
Significance Justification Waikareao Estuary 2 is locally significant because it includes, on a relatively small site, examples of indigenous vegetation which are typical of the indigenous biodiversity of Tauranga Harbour. One at risk bird species has been recorded from here in the past.

Notes This site is ranked as a Category 2 Special Ecological Site (SES) in Tauranga City (Wildland Consultants 2005j).

References Owen 1993; Wildland Consultants 2005j.

KOPURERUA STREAM WETLAND (PART)[1]

Site Number SVHZ-53
Grid Reference (NZMG) 2787455 6384185
Local Authority Tauranga City Council
Ecological District Tauranga
Status Unprotected
Site Area 2.9 ha
Altitudinal Range 20 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Palustrine	Grey willow forest. (Wildland Consultants 2005j)	Wetland

Indigenous Flora No notable species have been recorded.

Indigenous Fauna Unknown.

Condition/Pressures The site is dominated by an invasive exotic species i.e. grey willow. Fragmentation/edge effects as a consequence of road construction.

[1] Most of the area known as "Kopurerua Stream Wetland" occurs outside the 'coastal environment' study area (i.e. further than 1 km inland of MHWS).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	L
Rarity or Distinctive Features	3.2	L
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	L
Naturalness	3.8	L
Ecological Context	3.9	M
	3.10	L
Viability and Sustainability	3.11	L
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

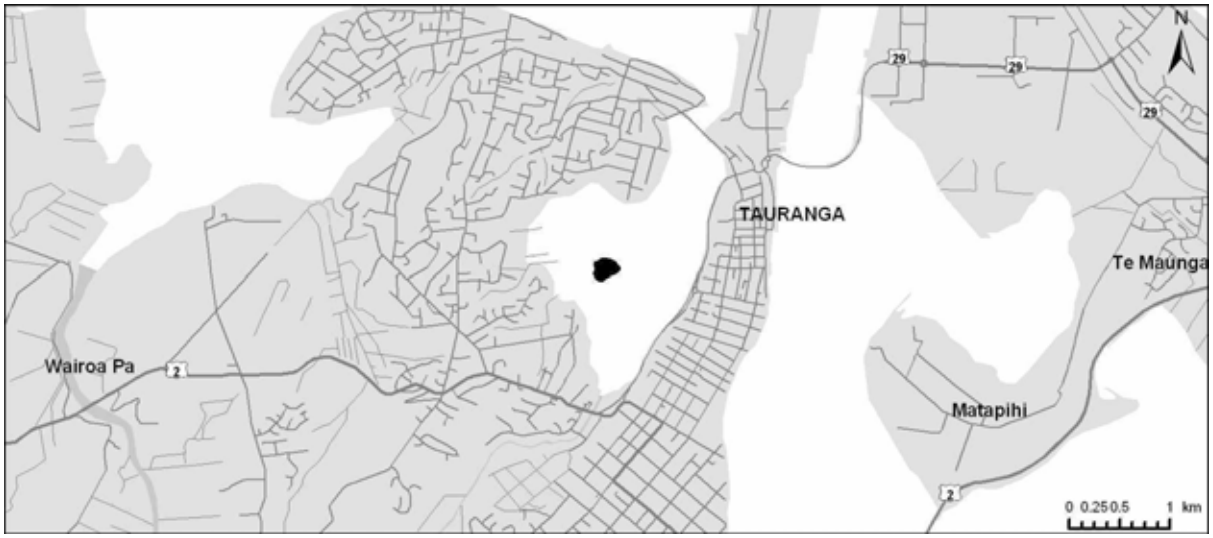
Significance Justification A highly modified site that is of local ecological significance for being part of a much larger (65 ha) freshwater wetland which extends up the Kopurerua Valley a further 2.8 km. Freshwater wetlands have been greatly reduced in extent in New Zealand.

Notes This site is ranked as a Category 2 Special Ecological Site (SES) in Tauranga City (Wildland Consultants 2005j).

References Wildland Consultants 2005j.

MOTUOPAE ISLAND

Site Number SVHZ-54
Grid Reference (NZMG) 2788188 6385972
Local Authority Tauranga City Council
Ecological District Tauranga
Status Unprotected
Site Area 2.2 ha
Altitudinal Range 0 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Manuka scrub.	Marine island
Terrestrial	(Brush wattle)-mamaku/gorse-woolly nightshade-mahoe-hangehange scrub.	Marine island
Estuarine	Sea rush-oioi tussockland.	Intertidal flat
Terrestrial	Pampas-(gorse) tussockland. (Wildland Consultants 2003a and 2005j)	Marine island

Indigenous Flora No notable species have been recorded.

Indigenous Fauna No specific fauna information.

Condition/Pressures Scattered pampas and gorse occur amongst the sea rush-oioi tussockland. Saltwater paspalum is present along the margins of this type. Dense pampas and scattered gorse are present on the terrestrial parts of the island. A restoration plan for the island was prepared for Huria Management Trust Lands in 2003 (Wildland Consultants 2003a).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	L
	3.3	L
	3.4	L
	3.5	L
	3.6	H
Diversity and Pattern	3.7	L
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	L
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

Significance Justification Motuopae is locally significant because, though small, it is an island comprising an example of indigenous vegetation and habitat which is characteristic of the indigenous biodiversity of Tauranga Ecological District.

Notes This site is ranked as a Category 2 Special Ecological Site (SES) in Tauranga City (Wildland Consultants 2005j). There is an urupa on Motuopae, however the part of the island where the urupa is located has been excluded from this site (the vegetation cover was mainly invasive weeds in 2003 (Wildland Consultants 2003a)).

References Wildland Consultants 2003a and 2005j.

WAIMAPU ESTUARY WALKWAY

Site Number SVHZ-55
Grid Reference (NZMG) 2788643 6382856
Local Authority Tauranga City Council
Ecological District Tauranga
Status Protected (TCC reserve) and unprotected parts
Site Area 2.3 ha
Altitudinal Range 0-7 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Palustrine	Grey willow-manuka forest.	Wetland
Palustrine	Raupo-pampas-harakeke-*Baumea articulata*/oioi-mangrove-sea rush sedge-tussockland.	Wetland
Estuarine	*Schoenoplectus pungens* sedgeland.	Intertidal flat
Palustrine	*Baumea articulata*-harakeke-raupo reedland.	Wetland
Estuarine	Mangrove loamfield.	Estuarine
Estuarine	Mangrove shrubland.	Estuarine
Estuarine	Oioi-sea rush sedgeland.	Estuarine
Terrestrial	Akeake-manuka-tarata-kohuhu-ti kouka-ngaio-koromiko-harakeke scrub.	Gentle hillslope
Terrestrial	Mamaku-tree privet treeland.	Gentle hillslope
Palustrine	Grey willow forest.	Wetland
	(Wildland Consultants 2005j)	

Indigenous Flora No notable species have been recorded.

Indigenous Fauna Resident's report of North Island fernbird (At Risk, Sparse) in 1990 (Owen 1993).

Condition/Pressures Ecological management requirements for part of the walkway were identified in 1994 (Beadel 1994e).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	L
	3.3	L
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	H
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	L
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

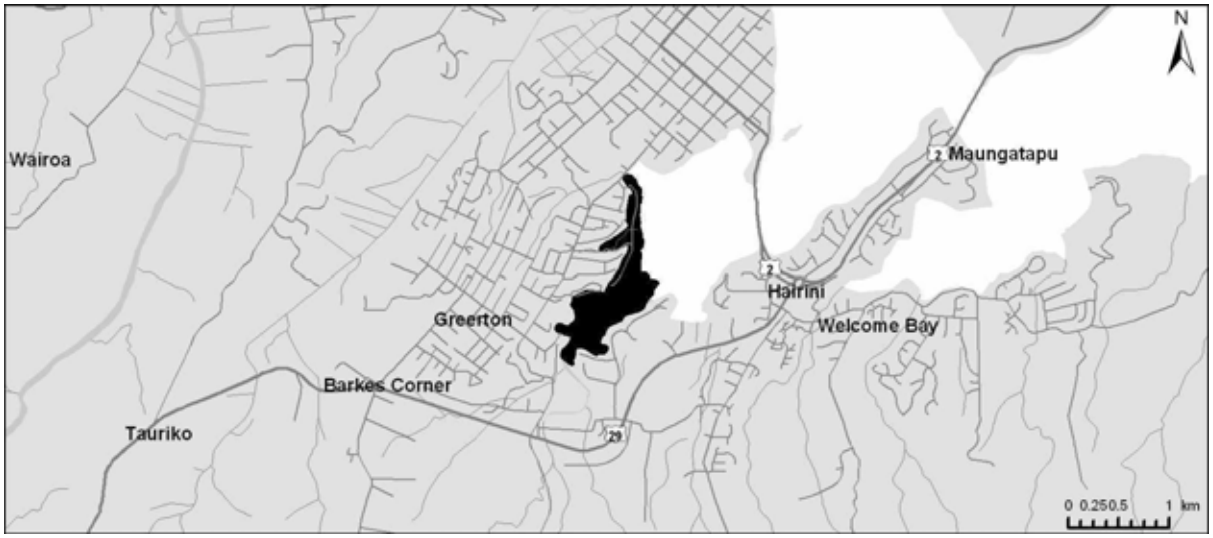
Significance Justification The site is locally significant because, though small, it is a typical example of indigenous vegetation and habitat types which are relatively common in the Tauranga Ecological District. The range of pressures, including weed species, present reflects its urban setting. There is an unconfirmed report of one at risk bird species.

Notes This site is ranked as a Category 2 Special Ecological Site (SES) in Tauranga City (Wildland Consultants 2005j).

References Owen 1993; Beadel 1994e; Wildland Consultants 2005j.

WAIMAPU ESTUARY

Site Number SVHZ-56
Grid Reference (NZMG) 2787786 6381442
Local Authority Tauranga City Council
Ecological District Tauranga
Status Protected (TCC reserve) and unprotected parts
Site Area 45.9 ha
Altitudinal Range 0-20 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Mangrove scrub.	Intertidal flat
Terrestrial	Puriri/mamaku-mahoe/kawakawa treeland.	Hillslope
Terrestrial	Brush wattle-mamaku-ti kouka forest.	Hillslope
Palustrine	Grey willow-manuka forest.	Wetland
Palustrine	Grey willow forest.	Wetland
Palustrine	Manuka scrub.	Wetland
Estuarine	*Coprosma propinqua* subsp. *propinqua* shrubland.	Intertidal flat
Estuarine	Mangrove shrubland.	Intertidal flat
Palustrine	Grey willow/pampas-harakeke tussockland	Wetland
Palustrine	Harakeke-pampas-raupo-gorse-*Coprosma propinqua* subsp. *propinqua*/sea rush-oioi-(saltmarsh ribbonwood)-(*Baumea articulata*) shrub-tussockland.	Wetland
Estuarine	Sea rush-harakeke-saltmarsh ribbonwood-*Coprosma propinqua* subsp. *propinqua* tussockland.	Intertidal flat
Estuarine	Sea rush-mangrove-oioi-saltmarsh ribbonwood tussockland.	Intertidal flat
Estuarine	Sea rush-oioi tussockland.	Intertidal flat
Estuarine	Oioi-*Baumea articulata* sedgeland.	Intertidal flat
Estuarine	Oioi rushland.	Intertidal flat
Estuarine	Oioi-*Baumea articulata*-saltmarsh ribbonwood sedgeland.	Intertidal flat
Estuarine	Oioi-sea rush sedgeland.	Intertidal flat
Estuarine	Oioi-saltmarsh ribbonwood shrub-sedgeland.	Intertidal flat
Estuarine	Arrow grass herbfield.	Intertidal flat
Estuarine	(*Coprosma propinqua* subsp. *propinqua*)-	Intertidal flat

Hydrosystem	Vegetation/Habitat Type	Landform
	(manuka)/*Baumea articulata*-mangrove-oioi-(sea rush)/arrow grass herbfield.	
Palustrine	Grey willow/*Coprosma propinqua* subsp. *propinqua* forest.	Wetland
Terrestrial	Mamaku-brush wattle-(Taiwan cherry)-(mahoe)-(hawthorn) treefernland. (Wildland Consultants 2005j)	Hillslope

Indigenous Flora No significant species recorded.

Indigenous Fauna Banded rail (At Risk, Sparse) recorded in 1990 (Owen 1993) and North Island fernbird (At Risk, Sparse) recorded in 2002 and 2005 (Wildland Consultants 2002a and 2005j). White-fronted tern (Chronically Threatened, Gradual Decline) and several common coastal bird species were also recorded at the site in 2002 (Wildland Consultants 2002a).

Condition/Pressures The following weed species are currently present within the site: arum lily, wild ginger, Taiwan cherry, tree privet, Chinese privet, Japanese honeysuckle, woolly nightshade, grey willow, blackberry, brush wattle, gorse and pampas. (Wildland Consultants 2005j)

The abundance and distribution of brush wattle and Japanese honeysuckle increased between 2000 and 2005. No change was detected in the abundance and distribution of grey willow, tree privet, and pampas (Wildland Consultants 2005j).

The following activities have impacted on the site: dumping of organic waste has had a minor negative impact, drainage has had a moderate minor negative impact and weed control has had a minor positive impact (Wildland Consultants 2005j).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	L
	3.6	H
Diversity and Pattern	3.7	H
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	H
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

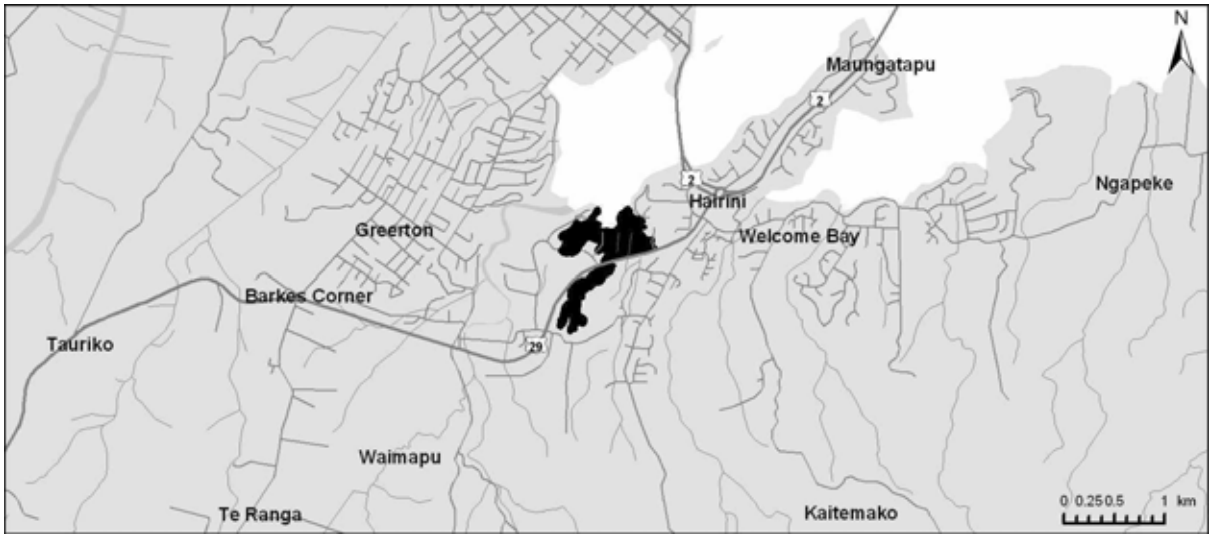
* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance	National
Significance Justification	Relatively large site which comprises a representative example of the estuarine and freshwater vegetation in Tauranga Ecological District. It contains the best example of coastal *Coprosma propinqua* subsp. *propinqua* shrubland in the Bay of Plenty.
Notes	This site is ranked as a Category 1 Special Ecological Site (SES) in Tauranga City (Wildland Consultants 2005j) and was identified as a Category 1 natural heritage site in the Tauranga Ecological District (Beadel and Shaw 2000b).
References	Owen 1993; Beadel and Shaw 2000b; Wildland Consultants 2002a and 2005j.

POIKE

Site Number SVHZ-57
Grid Reference (NZMG) 2788473 6380941
Local Authority Tauranga City Council
Ecological District Tauranga
Status Protected (TCC reserve) and unprotected parts
Site Area 31.1 ha
Altitudinal Range 0-23 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Palustrine	Grey willow forest.	Wetland
Palustrine	Grey willow-manuka forest.	Wetland
Palustrine	Manuka scrub.	Wetland
Terrestrial	(Wattle)/mamaku-Japanese honeysuckle-gorse scrub.	Intertidal flat
Palustrine	*Coprosma propinqua* subsp. *propinqua* shrubland.	Wetland
Terrestrial	Manuka-(pohutukawa)-(akeake)-(mingimingi) shrubland.	Hillslope
Estuarine	Mangrove shrubland.	Intertidal flat
Terrestrial	Pampas tussockland.	Hillslope
Palustrine	Grey willow/pampas-harakeke tussockland.	Wetland
Estuarine	Oioi-sea rush-(saltmarsh ribbonwood) sedgeland.	Intertidal flat
Estuarine	Oioi-sea rush sedgeland.	Intertidal flat
Estuarine	Mangrove loamfield.	Intertidal flat
Estuarine	Oioi-saltmarsh ribbonwood-harakeke-*Baumea juncea* sedgeland. (Wildland Consultants 2005j)	Intertidal flat

Indigenous Flora No significant species recorded.

Indigenous Fauna Banded rail, spotless crake, North Island fernbird (At Risk, Sparse) were recorded in 1990 (Owen 1993) and North Island fernbird were recorded again in 2002 and 2005 (Wildland Consultants 2002a and 2005j). White-fronted tern (Chronically Threatened, Gradual Decline) and several common coastal birds were also recorded in 2002 (Wildland Consultants 2002a).

Condition/Pressures The following weed species are currently present within the site: *Pinus* spp.,

tree privet, Chinese privet, Japanese honeysuckle, woolly nightshade, grey willow, blackberry, brush wattle, gorse and pampas (Wildland Consultants 2005j). Owen (1993) reported spartina from the site but this has not been seen in recent years.

The abundance and distribution of pampas and Japanese honeysuckle have increased in the site in recent years. Grey willow, tree privet, and radiata pine may also have spread (Wildland Consultants 2005j).

The following activities have impacted on the site: Vegetation clearance has had a moderate negative impact and dumping of inorganic and organic waste, and drainage has had a minor negative impact on the site (Wildland Consultants 2005j).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	L
	3.6	H
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	L
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

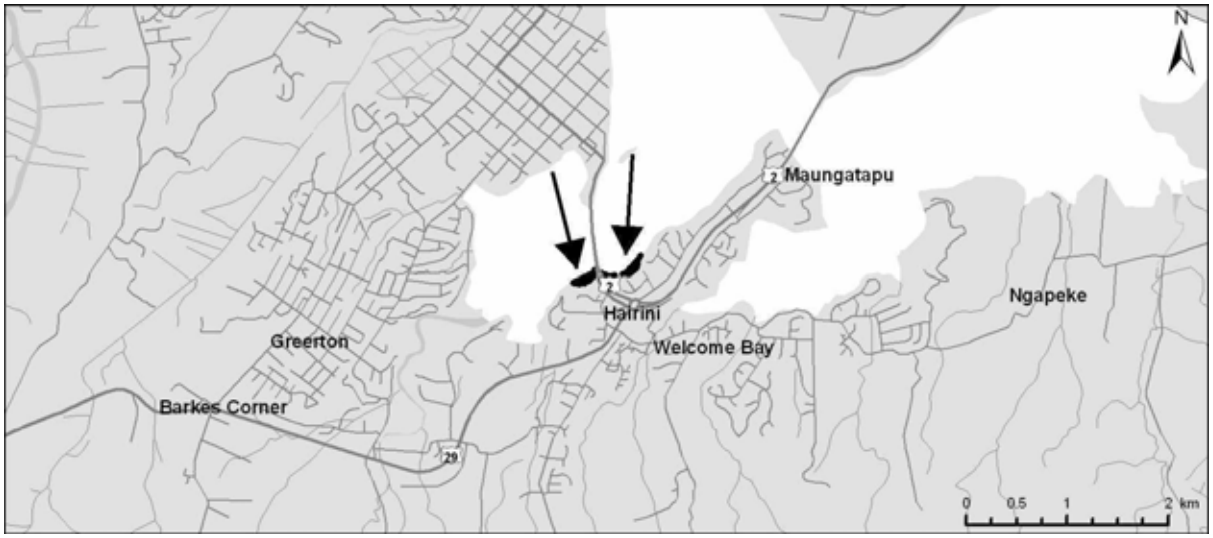
Significance Justification This site is of regional significance because of the diverse vegetation communities present in combination with other features, including its large size and close proximity to the Waimapu Estuary site. It is a moderate sized diverse example of estuarine and freshwater wetland vegetation of Tauranga Harbour. It supports at least one at risk bird species, and one chronically threatened and one at risk bird species have been recorded in the past. Pest plant infestations in the freshwater parts of the site appear to be increasing in extent.

Notes This site is ranked as a Category 1 Special Ecological Site (SES) in Tauranga City (Wildland Consultants 2005j).

References Owen 1993; Wildland Consultants 2002a and 2005j.

HAIRINI

Site Number SVHZ-58
Grid Reference (NZMG) 2789357 6381824
Local Authority Tauranga City Council
Ecological District Tauranga
Status Unprotected
Site Area 2.1 ha
Altitudinal Range 0-14 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Palustrine	Grey willow forest.	Wetland
Estuarine	Saltmarsh ribbonwood shrubland.	Intertidal flats
Palustrine	Grey willow/gorse-*Coprosma propinqua* subsp. *propinqua*-manuka-harakeke shrubland.	Wetland
Estuarine	Mangrove/*Schoenoplectus pungens* sedgeland.	Intertidal flats
Estuarine	Oioi rushland.	Intertidal flats
Estuarine	Oioi-*Baumea articulata* sedgeland.	Intertidal flats
Estuarine	*Schoenoplectus pungens* sedgeland.	Intertidal flats
Palustrine	*Baumea articulata* reedland. (Wildland Consultants 2005j)	Wetland

Indigenous Flora No notable species have been recorded.

Indigenous Fauna Hairini is a neap high tide roost for shorebirds (Owen *et al.* 2006).

Condition/Pressures Unknown.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	L
	3.3	L
	3.4	L
	3.5	L
	3.6	H
Diversity and Pattern	3.7	H
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	L
Viability and Sustainability	3.11	L
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

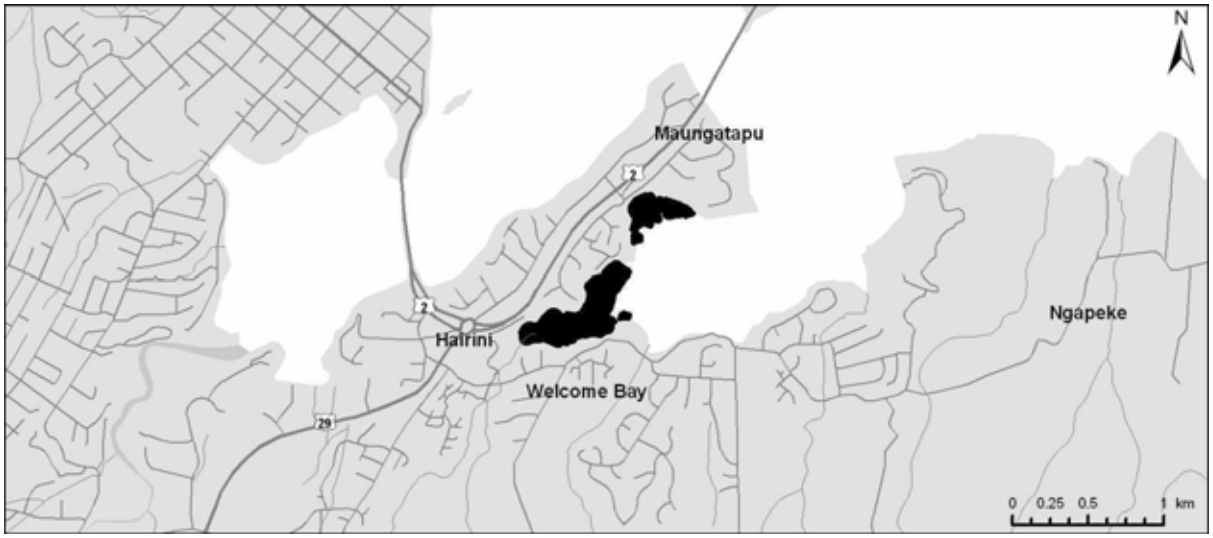
Significance Justification The site is locally significant because, though small, it contains indigenous vegetation and habitat types which are typical of the indigenous biodiversity of Tauranga Ecological District (ED). It includes small examples of freshwater wetland, which is a habitat that has been greatly reduced in extent in the ED.

Notes This site is ranked as a Category 2 Special Ecological Site (SES) in Tauranga City (Wildland Consultants 2005j).

References Wildland Consultants 2005j; Owen *et al.* 2006.

KAITEMAKO STREAM MOUTH

Site Number SVHZ-59
Grid Reference (NZMG) 2790509 6381783
Local Authority Tauranga City Council
Ecological District Tauranga
Status Protected (TCC reserve) and unprotected parts
Site Area 19.3 ha
Altitudinal Range 0-20 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	*Bolboschoenus fluviatilis* reedland.	Intertidal flats
Palustrine	Manuka shrubland.	Wetland
Estuarine	Mangrove shrubland.	Intertidal flats
Palustrine	Manuka-harakeke-ti kouka-(raupo)-(oioi) shrubland.	Wetland
Palustrine	Grey willow/manuka-raupo shrubland.	Wetland
Estuarine	Oioi-saltmarsh ribbonwood shrub-sedgeland.	Intertidal flats
Estuarine	Oioi-sea rush sedgeland.	Intertidal flats
Estuarine	Oioi-saltmarsh ribbonwood sedgeland.	Intertidal flats
Palustrine	Grey willow/manuka treeland.	Wetland
Estuarine	Mangrove scrub.	Intertidal flats
Estuarine	Oioi rushland.	Intertidal flats
Estuarine	Mangrove loamfield.	Intertidal flats
	(Wildland Consultants 2005j)	

Indigenous Flora No notable species have been recorded.

Indigenous Fauna Banded rail, North Island fernbird (At Risk, Sparse) recorded in 1990 (Owen 1993).

Condition/Pressures Noted in 1990 (Owen 1993): weeds - wattle, grey/crack willow, gorse; drainage works; stormwater discharge; mangrove removal for boat access.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	H
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

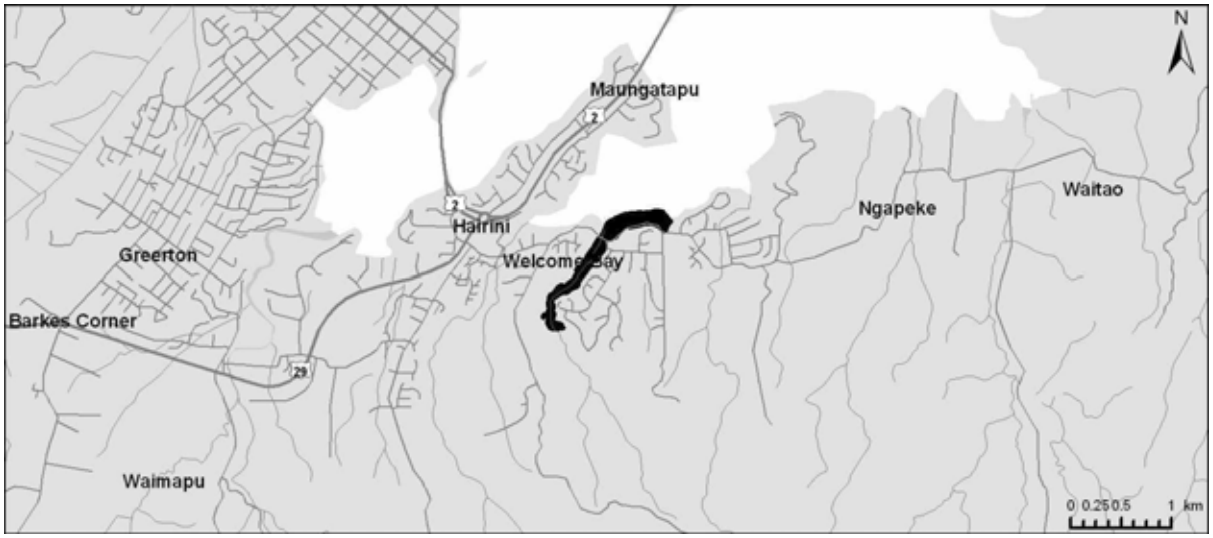
Significance Justification Kaitemako Stream Mouth is locally significant because it includes examples of indigenous vegetation (estuarine wetlands) which are relatively common in Tauranga Harbour. Although the site is relatively large, it is highly fragmented and there are a wide range of pressures operating typical of urban estuaries. Two at risk bird species have been recorded in the past and are likely to still be present.

Notes This site is ranked as a Category 2 Special Ecological Site (SES) in Tauranga City (Wildland Consultants 2005j).

References Owen 1993; Wildland Consultants 2005j.

WELCOME BAY

Site Number SVHZ-60
Grid Reference (NZMG) 2790871 6381235
Local Authority Tauranga City Council
Ecological District Tauranga
Status Protected (TCC reserve) and unprotected parts
Site Area 15.0 ha
Altitudinal Range 0-20 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Whau-karamu-ngaio-(tarata)-(manuka)-(pohutukawa)-(taupata)/kikuyu grass-cocksfoot shrubland.	Intertidal flat
Estuarine	Mangrove scrub.	Intertidal flat
Estuarine	Oioi rushland.	Intertidal flat
Estuarine	Oioi-*Baumea articulata* sedgeland.	Intertidal flat
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	Mangrove shrubland.	Intertidal flat
Riverine	Grey willow/raupo-harakeke-purei treeland.	River flat
Estuarine	Raupo reedland.	Intertidal flat
Riverine	Akeake-manuka-tarata-kohuhu-ti kouka-ngaio-koromiko-harakeke scrub.	River flat
Riverine	Gorse-pampas tussock-shrubland.	River flat
Riverine	Mamaku-Taiwan cherry treefernland. (Wildland Consultants 2005j)	River flat

Indigenous Flora No notable species have been recorded.

Indigenous Fauna No marsh birds recorded in 1990 (Owen 1993).

Condition/Pressures Noted in 1990 (Owen 1993): drainage works, organic rubbish dumping; weeds - taro, *Tradescantia,* wild ginger, banana passionfruit, woolly nightshade.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	L
	3.3	M
	3.4	L
	3.5	L
	3.6	H
Diversity and Pattern	3.7	H
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

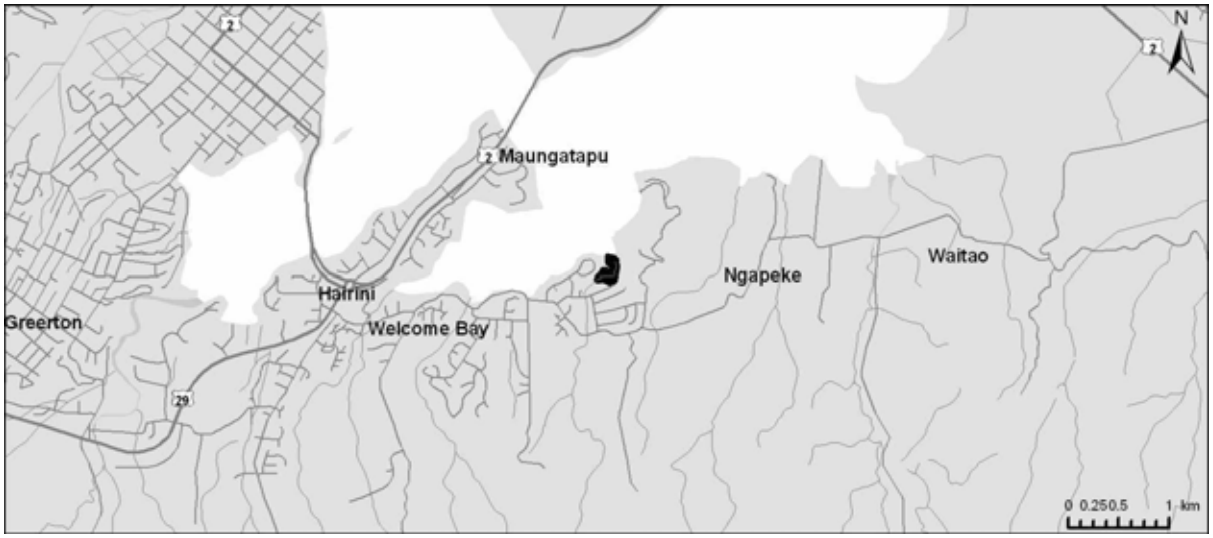
Significance Justification The site is locally significant because it comprises indigenous vegetation and habitat types which are typical of the indigenous biodiversity of the Tauranga Ecological District. This site is moderate in size, long and narrow in shape, and impacted by a range of weeds and urban pressures.

Notes This site is ranked as a Category 2 Special Ecological Site (SES) in Tauranga City (Wildland Consultants 2005j).

References Owen 1993; Wildland Consultants 2005j.

TYE PARK INLET

Site Number SVHZ-61
Grid Reference (NZMG) 2792216 6381662
Local Authority Tauranga City Council
Ecological District Tauranga
Status Unprotected
Site Area 2.5 ha
Altitudinal Range 0-11 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Sandfield.	Intertidal flat
Estuarine	Oioi rushland.	Intertidal flat
Estuarine	Mangrove scrub.	Intertidal flat
Estuarine	Mangrove-oioi-sea rush scrub. (Wildland Consultants 2005j)	Intertidal flat

Indigenous Flora No significant species recorded.

Indigenous Fauna Banded rail (At Risk, Sparse) recorded in 1990 (Owen 1993).

Condition/Pressures Pampas is present on the margins of the site. The site is surrounded by exotic vegetation (e.g. brush wattle-woolly nightshade scrub to the east and mown grass to the west) and residential development.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	M
	3.3	L
	3.4	L
	3.5	L
	3.6	N/A
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	L
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

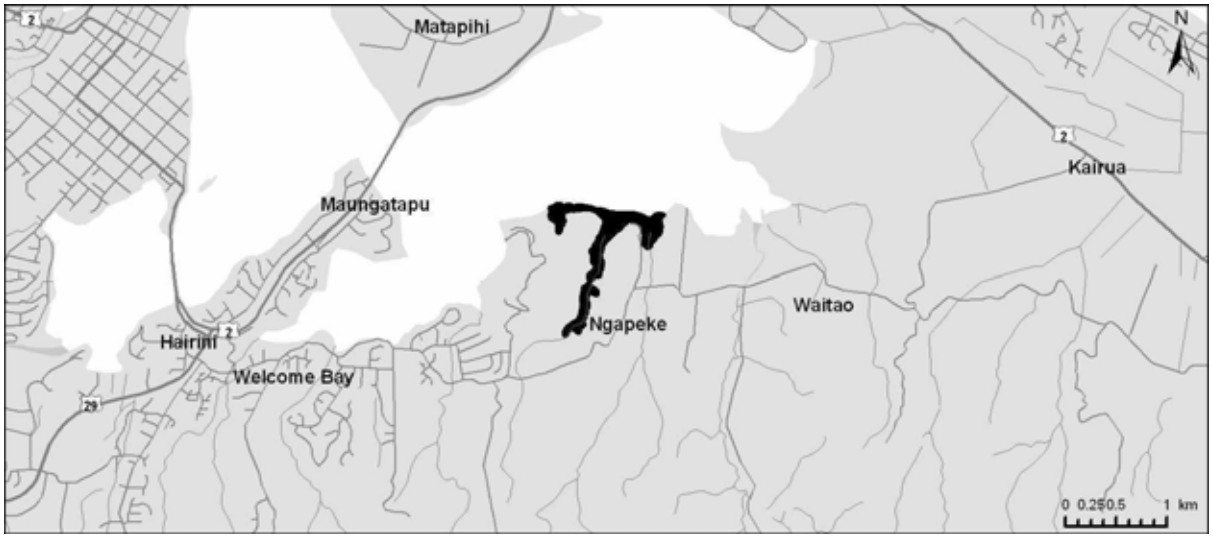
Significance Justification Tye Park Inlet is locally significant because it contains small examples of indigenous mangrove scrub and estuarine wetlands, which occur widely in Tauranga Harbour. There is one record of an at risk bird species.

Notes This site is ranked as a Category 2 Special Ecological Site (SES) in Tauranga City (Wildland Consultants 2005j).

References Owen 1993; Wildland Consultants 2005j.

NGAPEKE ROAD WETLANDS

Site Number SVHZ-62
Grid Reference (NZMG) 2793522 6382435
Local Authority Tauranga City Council
Ecological District Tauranga
Status Protected (TCC reserve) and unprotected parts
Site Area 20.3 ha
Altitudinal Range 0-20 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Sandfield.	Intertidal flat
Estuarine	Oioi-sea rush sedgeland.	Intertidal flat
Estuarine	Mangrove loamfield.	Intertidal flat
Estuarine	Sea rush-oioi-mangrove tussockland.	Intertidal flat
Estuarine	Harakeke-pampas-manuka-saltmarsh ribbonwood/sea rush-oioi tussockland.	Intertidal flat
Estuarine	Sea rush-oioi tussockland.	Intertidal flat
Estuarine	Mangrove shrubland.	Intertidal flat
Estuarine	Manuka-(raupo) shrubland.	Intertidal flat
Estuarine	Manuka-grey willow/harakeke-*Baumea juncea*-saltmarsh ribbonwood shrubland.	Intertidal flat
Palustrine	Grey willow/manuka-raupo scrub.	Wetland
Palustrine	Grey willow forest. (Wildland Consultants 2005j)	Wetland

Indigenous Flora No notable species have been recorded.

Indigenous Fauna Banded rail sign, North Island fernbird (At Risk, Sparse) recorded in 1990 (Owen 1993).

Condition/Pressures Gorse, grey willow, blackberry, pampas, and she-oak (Owen 1993, Wildland Consultants 2005j).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	H
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

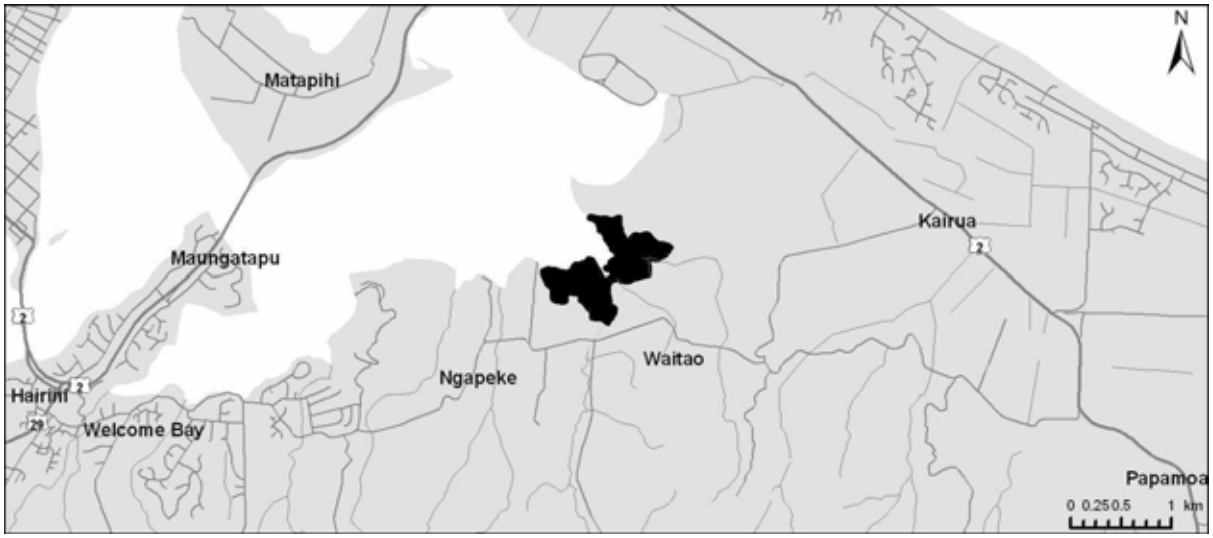
Significance Justification Ngapeke Road Wetland is locally significant because it includes examples of indigenous vegetation types which occur widely in Tauranga Harbour. The site is narrow and convoluted, which decreases its resilience to the range of pressures operating on it. Two at risk bird species have been recorded here.

Notes This site is ranked as a Category 2 Special Ecological Site (SES) in Tauranga City (Wildland Consultants 2005j).

References Owen 1993; Wildland Consultants 2005j.

WAITAO STREAM

Site Number SVHZ-63
Grid Reference (NZMG) 2795010 6382694
Local Authority Tauranga City Council
Ecological District Tauranga
Status Protected (TCC reserve) and unprotected parts
Site Area 43.6 ha
Altitudinal Range 0-14 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Palustrine	Grey willow forest.	Wetland
Palustrine	Ti kouka/grey willow-manuka forest.	Wetland
Estuarine/palustrine	Manuka scrub.	Intertidal flat/wetland
Estuarine	Mangrove shrubland.	Intertidal flat
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	Oioi-saltmarsh ribbonwood shrub-sedgeland.	Intertidal flat
Estuarine	Oioi-sea rush sedgeland.	Intertidal flat
Estuarine	Mangrove loamfield.	Intertidal flat
Estuarine	*Bolboschoenus fluviatilis* reedland.	Intertidal flat
Estuarine	Sea rush-oioi-mangrove tussockland.	Intertidal flat
	(Wildland Consultants 2005j)	

Indigenous Flora No significant species recorded.

Indigenous Fauna Banded rail and North Island fernbird (At Risk, Sparse) recorded in 1990 (Owen 1993) and again in 2002 (Wildland Consultants 2002a).

Condition/Pressures Noted in 1990: stock access; drainage works; *Spartina* and other weeds present (Owen 1993), including banana passionfruit, moth plant, she-oak, black wattle, *Pinus* spp., woolly nightshade, grey willow, blackberry, brush wattle, gorse and pampas (Wildland Consultants 2005j).

There was no detectable increase in the abundance of grey willow, pampas, or pines in this site between 2000 and 2005. Pampas is present on the margins of the site and on raised areas, such as where spoil from drains has been dumped. Grey willow is common in one vegetation type and pines

remain uncommon at the site. However, she-oak is established in the sea rush tussockland (Wildland Consultants 2005j).

Activities such as vegetation clearance and drainage have had a minor negative impact on the site (Wildland Consultants 2005j).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	L
	3.6	H
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	L
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

Significance Justification A substantial site, with a diverse range of vegetation types that are representative of the Tauranga Ecological District. It is also valuable as a protective buffer to the nationally significant Te Maunga wader roost. Repeated surveys have recorded two at risk bird species.

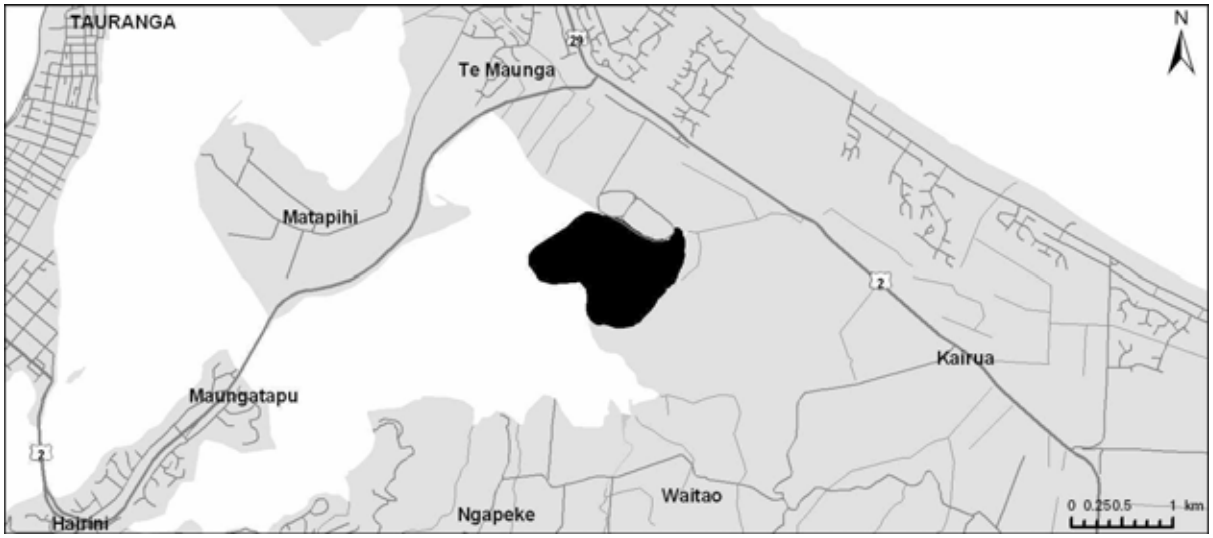
Notes Ranked as a Category 1 Special Ecological Site (SES) in Tauranga City (Wildland Consultants 2005j).

Identified as a Category 1 natural heritage site in the Tauranga Ecological District (Beadel and Shaw 2000b).

References Owen 1993; Beadel and Shaw 2000b; Wildland Consultants 2002a and 2005j.

TE MAUNGA

Site Number SVHZ-64
Grid Reference (NZMG) 2794873 6384083
Local Authority Western Bay of Plenty District
Ecological District Tauranga
Status Unprotected
Site Area 97.8 ha
Altitudinal Range 0 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	*Zostera* spp.(seagrass) grassland.	Intertidal and sub-tidal flat
Estuarine	Intertidal flats. (Park 1999)	Intertidal flat

Indigenous Flora No notable species known.

Indigenous Fauna This area, adjacent to the sewage works at Te Maunga, is the major shorebird roost in Rangataua Bay (Owen *et al.* 2006).

Condition/Pressures Unknown.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	L
	3.3	M
	3.4	L
	3.5	L
	3.6	n/a
Diversity and Pattern	3.7	L
Naturalness	3.8	H
Ecological Context	3.9	H
	3.10	H
Viability and Sustainability	3.11	H
	3.12	H
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

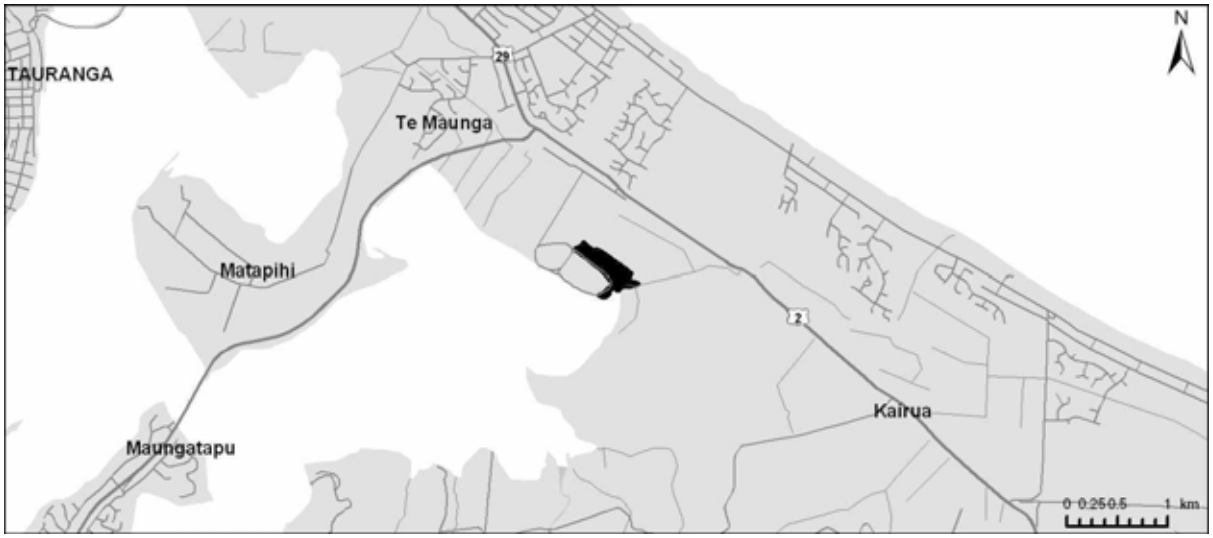
Relative Significance National

Significance Justification A relatively large and compact site containing significant areas of seagrass beds. The main significance of this site lies in its function as a roost and feeding ground for international and NZ migrant wader and shorebird species.

References Park 1999; Owen *et al.* 2006.

MANGATAWA

Site Number SVHZ-65
Grid Reference (NZMG) 2795461 6384595
Local Authority Tauranga City Council
Ecological District Tauranga
Status Unprotected
Site Area 8.3 ha
Altitudinal Range 0-4 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Sea rush-oioi tussockland.	Intertidal flat
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	Mangrove shrubland.	Intertidal flat
Estuarine	Mangrove scrub.	Intertidal flat
Estuarine	Oioi-*Bolboschoenus fluviatilis* sedgeland.	Intertidal flat
Estuarine	Mangrove loamfield.	Intertidal flat
	(Wildland Consultants 2005j)	

Indigenous Flora No notable species have been recorded.

Indigenous Fauna Banded rail (At Risk, Sparse) present in 1990 (Owen 1993).

Condition/Pressures Noted in 1990 (Owen 1993): stock access; gorse, pampas; drainage and reclamation works; stormwater discharge.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	L
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	L
Viability and Sustainability	3.11	L
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

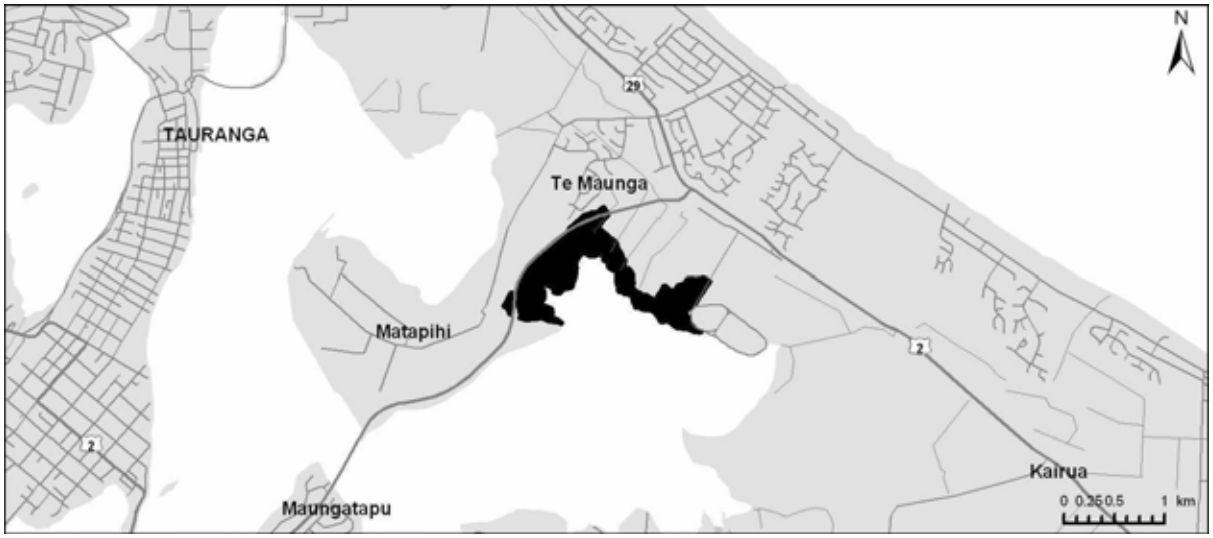
Significance Justification Mangatawa is locally significant because it comprises estuarine vegetation typical of the vegetation of Tauranga Harbour. There is one record of an at risk bird species.

Notes This site is ranked as a Category 2 Special Ecological Site (SES) in Tauranga City (Wildland Consultants 2005j).

References Owen 1993; Wildland Consultants 2005j.

RANGATAUA BAY

Site Number SVHZ-66
Grid Reference (NZMG) 2793818 6385100
Local Authority Tauranga City Council
Ecological District Tauranga
Status Unprotected
Site Area 66.2 ha
Altitudinal Range 0-7 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	*Ficinia nodosa*-sea rush/*Samolus repens*-glasswort tussockland.	Intertidal flat
Estuarine	Saltmarsh ribbonwood/sea rush-*Ficinia nodosa* tussockland.	Intertidal flat
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	Sea rush-oioi tussockland.	Intertidal flat
Estuarine	Ti kouka/pampas tussockland.	Intertidal flat
Estuarine	Saltmarsh ribbonwood/sea rush-*Ficinia nodosa*/*Samolus repens*-glasswort tussockland.	Intertidal flat
Estuarine	Saltmarsh ribbonwood/oioi-sea rush sedgeland.	Intertidal flat
Estuarine	Mangrove shrubland.	Intertidal flat
Estuarine	Manuka scrub.	Intertidal flat
Estuarine	Mangrove scrub.	Intertidal flat
Palustrine	Ti kouka/grey willow-manuka forest.	Wetland
Palustrine	Grey willow forest.	Wetland
Estuarine	Sandfield.	Intertidal flat
Estuarine	Mangrove loamfield.	Intertidal flat
	(Wildland Consultants 2005j)	

Indigenous Flora No notable species have been recorded.

Indigenous Fauna Banded rail, North Island fernbird (At Risk, Sparse) recorded in 1990 (Owen 1993).

Condition/Pressures Noted in 1990 (Owen 1993): stock access; *Spartina*, grey willow, pampas; drainage and reclamation works; motorway stormwater discharge.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	L
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

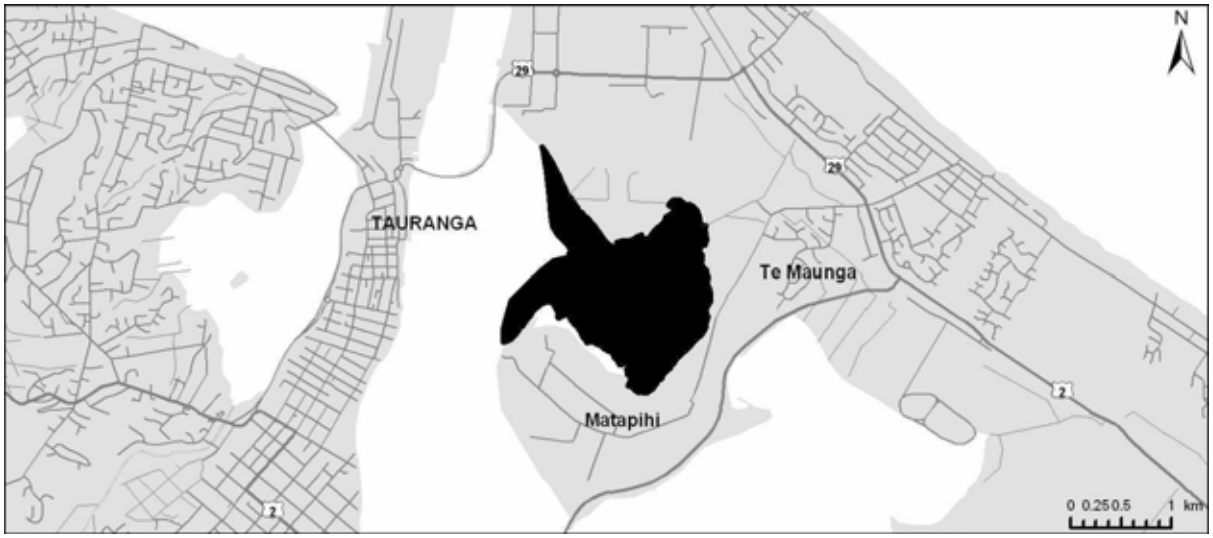
Significance Justification Rangataua Bay is locally significant because it includes estuarine wetland vegetation typical of the vegetation of Tauranga Harbour. It provides a protective buffer to the nationally significant Te Maunga wader roost.

Notes This site is ranked as a Category 2 Special Ecological Site (SES) in Tauranga City (Wildland Consultants 2005j).

References Owen 1993; Wildland Consultants 2005j.

WAIPU BAY INTERTIDAL FLATS

Site Number SVHZ-67
Grid Reference (NZMG) 2792015 6385881
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Protected (TCC reserve) and unprotected parts
Site Area 216.72 ha
Altitudinal Range 0-6 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	*Zostera* spp.(seagrass) grassland.	Intertidal and sub-tidal flat
Estuarine	Searush tussockland.	Intertidal flats
Estuarine	Intertidal flats.	Intertidal flats
	(Beadel 1992a; Park 1999)	

Indigenous Flora This site contains extensive areas of *Zostera* spp. (seagrass) beds.

Indigenous Fauna This site is a roost for large numbers (i.e. thousands) of trans-equatorial migrant bird species, e.g. bar-tailed godwit, eastern curlew, whimbrel, lesser knot and turnstone, especially at Maheka Point. Grassy areas of nearby Tauranga airport are used as spring tide roosts (John Heaphy, Brian Chudleigh pers. comm. 2006; Owen *et al.* 2006).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	L
	3.3	M
	3.4	L
	3.5	L
	3.6	N/A
Diversity and Pattern	3.7	L
Naturalness	3.8	H
Ecological Context	3.9	H
	3.10	H
Viability and Sustainability	3.11	H
	3.12	H
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance National

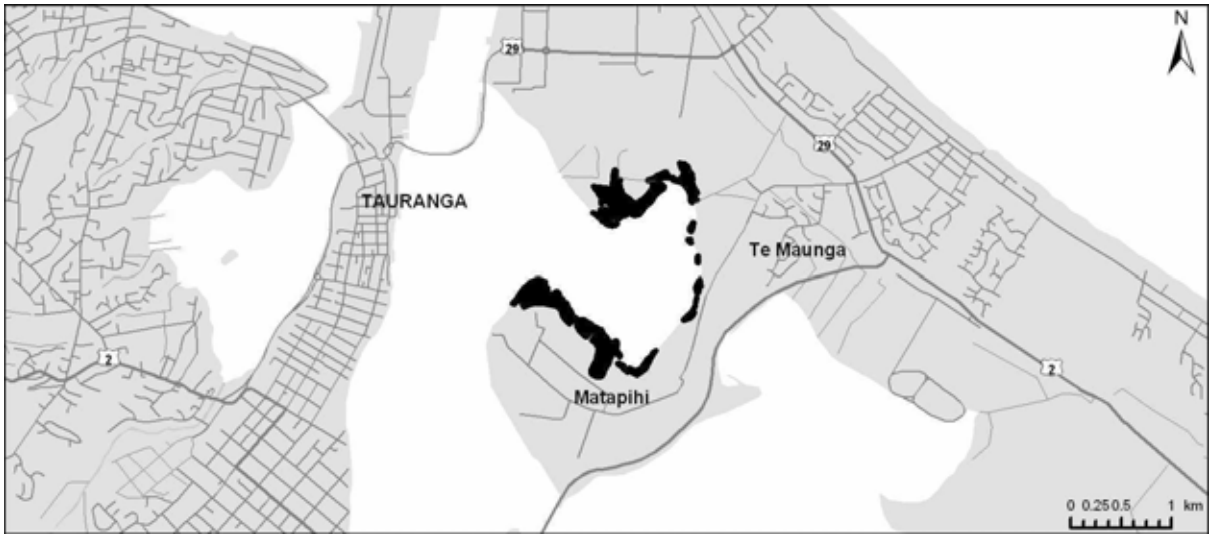
Significance Justification This site is of national significance as roosting habitat for large and diverse flocks of international migratory wader species. It also contains significant beds of seagrass.

Notes This site is part of Waipu Bay Key Ecological Zone.

References Park 1999; Brian Chudleigh (OSNZ) pers. comm. 2006; John Heaphy (DOC) pers. comm.; Owen *et al.* 2006.

WAIPU BAY MARGINS

Site Number SVHZ-68
Grid Reference (NZMG) 2791953 6385871
Local Authority Tauranga City Council
Ecological District Tauranga
Status Unprotected
Site Area 38.10 ha
Altitudinal Range 0-14 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Palustrine	Grey willow forest.	Wetland
Palustrine	Grey willow-manuka forest.	Wetland
Palustrine	Grey willow/manuka treeland.	Wetland
Estuarine	Manuka scrub.	Intertidal flats
Estuarine	Mangrove shrubland.	Intertidal flats
Estuarine	*Ficinia nodosa*-sea rush tussockland.	Intertidal flats
Palustrine	Raupo reedland.	Wetland
Estuarine	Mangrove loamfield.	Intertidal flats
Estuarine	Sea rush tussockland.	Intertidal flats
Estuarine	Sea rush-oioi rushland.	Intertidal flats
Estuarine	Sea rush-(pasture) tussockland.	Intertidal flats
Estuarine	Saltmarsh ribbonwood/oioi-sea rush sedgeland.	Intertidal flats
Estuarine	*Baumea juncea*-harakeke-oioi sedgeland.	Intertidal flats
Estuarine	Mangrove/*Schoenoplectus pungens* sedgeland.	Intertidal flats
Estuarine	Manuka/oioi-sea rush-saltmarsh ribbonwood sedgeland.	Intertidal flats
Estuarine	*Schoenoplectus pungens* sedgeland	Intertidal flats
Estuarine	Oioi-sea rush sedgeland.	Intertidal flats
Estuarine	*Baumea articulata*-pohuehue reedland.	Intertidal flats
Estuarine	Grey willow/raupo-harakeke-pampas reedland.	Intertidal flats
Estuarine	Manuka-gorse scrub.	Intertidal flats
Estuarine	Sea rush-*Samolus repens*-saltmarsh ribbonwood-*Baumea juncea*-oioi tussockland.	Intertidal flats
Estuarine	Glasswort sandfield. (Wildland Consultants 2005j)	Intertidal flats

Indigenous Flora No notable species have been recorded.

Indigenous Fauna Banded rail, North Island fernbird (At Risk, Sparse) recorded in 1990 (Owen 1993).

Condition/Pressures Noted in 1990 (Owen 1993): extensive reclamation and drainage works; stock access; pampas, wattle, radiata pine present; industrial and domestic rubbish dumping; recreational horse-riding.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	H
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

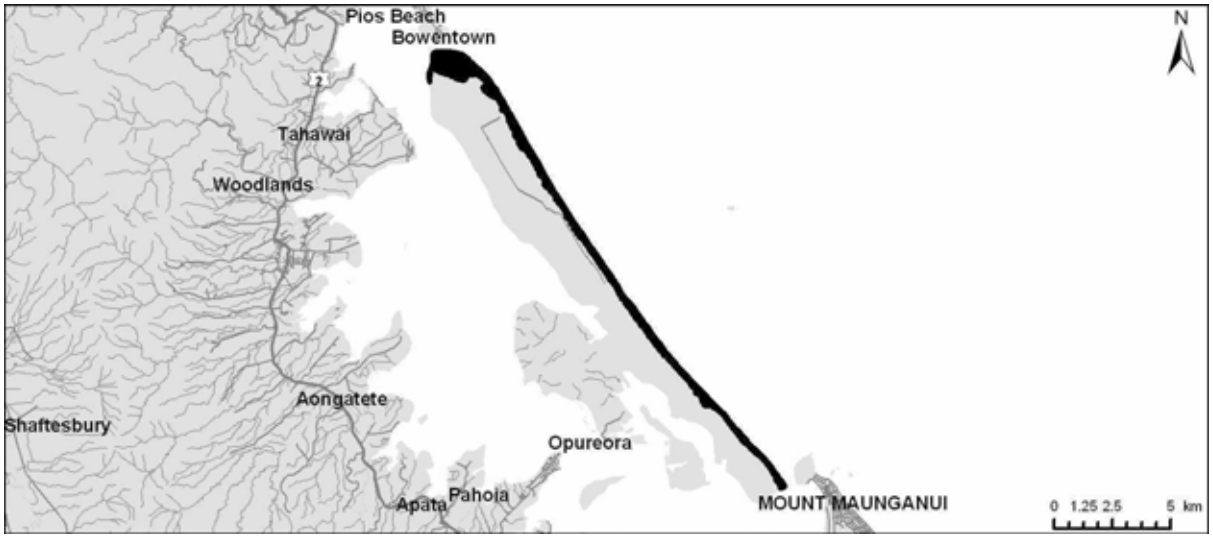
Significance Justification This site acts as a protective buffer to a nationally significant wader roost, Waipu Bay Intertidal Flats. It contains a diverse range of vegetation types. Pest plants are locally present.

Notes This site includes five sites (Waipu Bay 1 to 5) which are all ranked as Category 2 Special Ecological Sites (SES) in Tauranga City (Wildland Consultants 2005j). This site is part of Waipu Bay Key Ecological Zone.

References Owen 1993; Wildland Consultants 2005j.

MATAKANA ISLAND 1

Site Number SVHZ-69
Grid Reference (NZMG) 2779307 6403951
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Protected (DOC Matakana Island Wildlife Refuge) and unprotected parts
Site Area 476.7 ha
Altitudinal Range 0-10 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Palustrine	*Cyclosorus interruptus-Thelypteris confluens-Baumea juncea-Carex secta* sedge-fernland.	Wetland
Palustrine	Grey willow-(cabbage tree)/harakeke-*Carex* spp. forest.	Wetland
Palustrine	*Baumea articulata*/oioi sedgeland.	Wetland
Palustrine	*Carex secta/Eleocharis acuta* sedgeland.	Wetland
Palustrine	Harakeke/*Baumea juncea* sedgeland.	Wetland
Palustrine	Saltmarsh ribbonwood/sea rush-oioi-*Baumea juncea* sedgeland.	Wetland
Palustrine	Oioi/pohuehue sedgeland.	Wetland
Palustrine	Raupo/reed sweetgrass reed-grassland.	Wetland
Palustrine	*Baumea articulata* reedland.	Wetland
Palustrine	*Baumea articulata-Cyperus ustulatus* reedland.	Wetland
Palustrine	*Baumea articulata-Baumea juncea* reedland.	Wetland
Palustrine	*Baumea articulata*-raupo-*Schoenoplectus tabernaemontani*-grey willow reedland.	Wetland
Palustrine	Raupo reedland.	Wetland
Palustrine	Raupo-*Schoenoplectus tabernaemontani-Baumea articulata*-(*Carex secta*)-(grey willow)/*Eleocharis acuta-Persicaria decipiens* reedland.	Wetland
Palustrine	*Schoenoplectus tabernaemontani* reedland.	Wetland
Palustrine	*Paspalum vaginatum* grassland.	Wetland
Palustrine	Open water.	Wetland
Palustrine	Manuka shrubland.	Wetland
Palustrine	Grey willow forest.	Wetland
Palustrine	Floating sweetgrass grassland.	Wetland
Palustrine	Raupo/floating sweetgrass reed-grassland.	Wetland

Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Radiata pine/*Baumea juncea-Ficinia nodosa* forest.	Dune and beach sands
Terrestrial	Radiata pine/*Zoysia pauciflora* forest.	Dune and beach sands
Terrestrial	Radiata pine/harakeke-*Baumea juncea* forest.	Dune and beach sands
Terrestrial	Radiata pine/mingimingi-grey willow-cabbage tree/*Baumea juncea* forest.	Dune and beach sands Dune and beach sands
Terrestrial	Radiata pine/pohutukawa-(kohuhu)/harakeke forest.	Dune and beach sands
Terrestrial	*Ficinia nodosa*/pohuehue vineland.	Dune and beach sands
Terrestrial	*Ficinia nodosa* sedgeland.	Dune and beach sands
Terrestrial	Pohuehue vineland.	Dune and beach sands
Terrestrial	(Radiata pine)-(*Leptospermum laevigatum*)/*Ficinia nodosa-Calystegia soldanella-Lachnagrostis billardierei*-spinifex-pingao shrubland.	Dune and beach sands
Terrestrial	*Leptospermum laevigatum* shrubland and scrub.	Dune and beach sands
Terrestrial	Spinifex grassland.	Dune and beach sands
Terrestrial	Spinifex-*Calystegia soldanella*-pingao grassland.	Dune and beach sands
Terrestrial	Spinifex sandfield.	Dune and beach sands
Terrestrial	Spinifex-pingao sandfield.	Dune and beach sands
Terrestrial	Spinifex-(pingao) sandfield.	Dune and beach sands
Terrestrial	Marram grassland.	Dune and beach sands
	(Current study and Beadel 1989e and 1994a)	

Indigenous Flora

Pingao and sand pimelea (both Chronically Threatened, Gradual Decline) are present on the sands dunes (current study). A small population of *Melicytus novae-zelandiae* is present (Beadel 1994a, 2006). This species is uncommon on the Bay of Plenty mainland.

Thelypteris confluens, *Cyclosorus interruptus* and *Ranunculus macropus* (all Chronically Threatened, Gradual Decline) were recorded in the wetlands in 1990 (Beadel 1990b). Large populations of *Cyclosorus interruptus* were confirmed present during the current study. In addition, large populations of *Thelypteris* and *Cyclosorus* were observed during a survey in 2005.

The pine plantation and wilding pine understoreys are generally dominated by low-growing indigenous plant species (e.g. mainly sedges, with local shrubs, grasses and orchids) and can contain threatened species, e.g. pingao and sand pimelea (Beadel 1994a).

Indigenous Fauna

Regarded by Department of Conservation (J. Heaphy pers. comm.) as one of the best coastal wetland complexes for fauna in the Bay of Plenty. It has the full range of threatened wetland birds known in the region, including Australasian bittern (Acutely Threatened, Nationally Endangered), spotless crake (At Risk, Sparse), banded rail (At Risk, Sparse), marsh crake (At Risk, Sparse), North Island fernbird (At Risk, Sparse), as well as occasional pateke or brown teal (Acutely Threatened, Nationally Endangered). Grey duck (Acutely Threatened, Nationally Endangered), spotless crake (At Risk, Sparse) and black shag (At Risk, Sparse) were recorded in 1992 (Owen 1993) and probably still occur here. Several NZ scaup were seen during the current field survey.

The dunes and beach from along the entire outer Matakana Island coastline are used by NZ dotterel (Acutely Threatened, Nationally Vulnerable) as breeding

grounds. This is main nesting area in the Bay of Plenty, and one of the top two in the country with 21 pairs recorded in the 2004-2005 nesting season. Variable oystercatchers also nest in the same area (John Heaphy pers. comm. 2006).

Along with the Yellow Point sand bank, the north-west end of Matakana Island is one of the principal high tide roost for shorebirds and other coastal birds in the northern part of Tauranga Harbour. This area is often used whenever the Yellow Point roost is affected by storms or erosion. Panepane Point, at the south-eastern end of the island, is also an important shorebird roost (Owen *et al.* 2006).

The chronically threatened katipo spider (Chronically Threatened, Serious Decline) has substantial populations along the dunes and beach of Matakana Island. This is the most extensive surviving population in the Bay of Plenty. Information on native lizard fauna is limited; no geckos are known from here, and only shore skinks have been recorded (John Heaphy pers. comm. 2006).

Condition/Pressures

Grey willow has greatly expanded at the northern end of this site and adjacent wetland sites since 1989. *Leptospermum laevigatum* is currently in its second year of control via helicopter spraying with Escort. Royal fern is also present and is also being monitored and controlled (Walter Stahel pers. comm. 2006). There are local infestations of marram along the foredune which are not being controlled, and have expanded in size (Beadel 1989 and current survey) since 1989.

In order to benefit NZ dotterel nesting, the Department of Conservation traps stoats, rats, cats and possums around the northern end of the site. Black-backed gulls are also controlled by DOC when high populations begin to affect the NZ dotterels (John Heaphy pers. comm. 2006). Panepane Point shorebird roost and breeding area is subject to high disturbance by anglers and surfers over summer (Owen *et al.* 2006).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	H
	3.4	H
	3.5	H
	3.6	H
Diversity and Pattern	3.7	H
Naturalness	3.8	H
Ecological Context	3.9	H
	3.10	H
Viability and Sustainability	3.11	H
	3.12	M
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance	National
Significance Justification	This very large site contains diverse, high quality, and representative examples of sand dune and wetland vegetation which are of national significance. It provides critical habitat for several chronically threatened plant species, three acutely threatened bird species, four at risk bird species, a range of migratory shorebird species and a chronically threatened spider species (katipo).
Notes	This site has previously been ranked as nationally significant for its high quality, representative sand dune and wetland communities (Beadel 1989a, 1990b and 1994a). The seaward edge of Matakana barrier island is a nationally significant geological feature (Kenny and Hayward 1996). Identified as a Category 1 natural heritage site in the Tauranga Ecological District (Beadel and Shaw 2000b).
References	Beadel 1989a; Beadel 1989c; Beadel 1989e; Beadel 1990b; Owen 1993; Beadel 1994a; Kenny and Hayward 1996; Owen *et al.* 2006; current study.

MATAKANA WETLAND A

Site Number SVHZ-70
Grid Reference (NZMG) 2775713 6408778
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Protected (DOC, Matakana Island Wildlife Refuge) and unprotected parts
Site Area 4.6 ha
Altitudinal Range 0 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Palustrine	Grey willow-cabbage tree-manuka/*Baumea juncea*-(royal fern) forest. (Current study)	Wetland

Indigenous Flora No significant species recorded.

Indigenous Fauna No information, however likely to be used by marshbirds (e.g. North Island fernbird, spotless crake) which are known from neighbouring larger wetlands.

Condition/Pressures Radiata pine forestry operations are carried out all around these small wetlands, which considerably affects their quality. The southernmost patch has the largest royal fern infestation currently known on Matakana Island (discovered during current study on 31/10/2006). Aerial control of this infestation is planned for later this season (W. Stahel pers. comm.).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	L
	3.3	M
	3.4	M
	3.5	L
	3.6	M
Diversity and Pattern	3.7	L
Naturalness	3.8	L
Ecological Context	3.9	M
	3.10	L
Viability and Sustainability	3.11	L
	3.12	L
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

Significance Justification This small site is locally significant because it comprises indigenous freshwater wetland, which is a habitat type that has been greatly reduced in extent in Tauranga Ecological District. The site itself is significantly impacted by surrounding land use, however it is complementary to other freshwater wetlands at the northwestern end of Matakana Island.

References Current study.

MATAKANA WETLAND B

Site Number	SVHZ-71
Grid Reference (NZMG)	2774496 6408803
Local Authority	Western Bay of Plenty District Council
Ecological District	Tauranga
Status	Protected (DOC, Matakana Island Wildlife Refuge)
Site Area	20.3 ha
Altitudinal Range	0 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Palustrine	Raupo reedland.	Wetland
Palustrine	*Persicaria decipiens* herbfield.	Wetland
Palustrine	*Baumea articulata* reedland.	Wetland
Palustrine	*Eleocharis sphacelata* reedland.	Wetland
Palustrine	*Carex secta* tussockland.	Wetland
Palustrine	Grey willow-cabbage tree-(manuka) forest.	Wetland
Palustrine	Harakeke flaxland.	Wetland
	(Current study, Beadel 1989c and Beadel 1989e)	

Indigenous Flora Large populations of *Cyclosorus interruptus* (Chronically Threatened, Gradual Decline) and *Thelypteris confluens* (Chronically Threatened, Gradual Decline) are present, along with *Ranunculus macropus* (Chronically Threatened, Gradual Decline). This wetland contains one of the largest areas of raupo reedland in the Bay of Plenty Region, and also possibly the only natural occurrence of kahikatea on Matakana Island. Four pole kahikatea were seen growing in a clump, emergent over grey willow-cabbage tree forest on the northern central edge of the wetland.

Indigenous Fauna Spotless crake (At Risk, Sparse) recorded in 1992 (Owen 1993).

Condition/Pressures The raupo reedland is being encroached on by grey willow from the edges. Reed sweet grass occurs locally on the western side of the wetland.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	H
	3.4	H
	3.5	H
	3.6	H
Diversity and Pattern	3.7	H
Naturalness	3.8	H
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	H
	3.12	M
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance National

Significance Justification This site contains a large representative example of wetland vegetation which supports a large population of two chronically threatened plant species. It is distinctive locally because it contains kahikatea which is not known from anywhere else on Matakana Island. The natural character of the site is under threat from weed pressures. The wetland provides ideal habitat for at risk marshbird species, e.g. spotless crake.

Notes Previously ranked as nationally significant vegetation in Beadel (1994a) and high quality marshbird habitat in Owen (1993).

References Beadel 1989c; Beadel 1989e; Owen 1993; Beadel 1994a; current study.

MATAKANA WETLAND C

Site Number SVHZ-72
Grid Reference (NZMG) 2774885 6408246
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Protected (DOC, Matakana Island Wildlife Refuge) and unprotected parts
Site Area 38.2 ha
Altitudinal Range 0-1 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Palustrine	Grey willow-cabbage tree/*Carex secta*-pampas forest.	Wetland
Palustrine	Mamaku-cabbage tree-(wheki)-(mapou)/pampas forest.	Wetland
Palustrine	(Cabbage tree)/pampas tussockland.	Wetland
Palustrine	Pampas tussockland.	Wetland
Palustrine	*Carex secta* tussockland.	Wetland
Palustrine	*Eleocharis sphacelata* reedland.	Wetland
Palustrine	Raupo reedland.	Wetland
Palustrine	*Baumea articulata* reedland.	Wetland
Palustrine	Open water.	Wetland
Palustrine	Pampas-*Baumea juncea* grass-sedgeland. (Current study and Beadel 1989e)	Wetland

Indigenous Flora This is the largest wetland on Matakana Island. During the current helicopter survey *Cyclosorus interruptus* (Chronically Threatened, Gradual Decline), *Hypolepis distans* and swamp kiokio were seen through the grey willow canopy.

Indigenous Fauna This site is good habitat for threatened wetland birds, including Australasian bittern (Acutely Threatened, Nationally Endangered), spotless crake (At Risk, Sparse), banded rail (At Risk, Sparse), marsh crake (At Risk, Sparse), North Island fernbird (At Risk, Sparse). A pair of grey duck (Acutely Threatened, Nationally Endangered) were noted in 1992 (Owen 1993).

Condition/Pressures This wetland has been extensively drained and as a consequence has fewer natural plant communities than it would have had originally. The invasive

grey willow is better established than in other large wetlands on Matakana Island. A few individuals of royal fern are present, but are being controlled and monitored by Environment Bay of Plenty (Walter Stahel pers. comm. 2006).

Feral pigs were observed in the wetland during the current study. Possum and rabbit damage has been noted in the past (Owen 1993).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	H
	3.3	H
	3.4	M
	3.5	M
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	L
Ecological Context	3.9	M
	3.10	M
Viability and Sustainability	3.11	H
	3.12	M
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

Significance Justification This site comprises a large example of freshwater wetland vegetation, albeit modified through drainage and invasion by willow. It provides good habitat for one chronically threatened fern species. There are past or recent records of two acutely threatened and four at risk bird species.

Notes Ranked as 'moderate' quality marshbird habitat in Owen (1993). Part of the site (the upper end of the wetland) was ranked as vegetation of 'District' significance in Beadel (1994a).

References Beadel 1989c; Beadel 1989e; Beadel 1992a; Owen 1993; current study.

MATAKANA WETLAND D

Site Number SVHZ-73
Grid Reference (NZMG) 2775708 6408392
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Protected (DOC, Matakana Island Wildlife Refuge)
Site Area 5.0 ha
Altitudinal Range 0 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Palustrine	Grey willow-cabbage tree/pampas-harakeke-(karamu)-(kohuhu)-(mingimingi)-(koromiko) forest. (Current study)	Wetland

Indigenous Flora No significant species were recorded.

Indigenous Fauna Owen (1993) assessed this site as being 'of low value to wetland birds'. No bird species were recorded in 1992 and there is no recent information.

Condition/Pressures Large infestations of grey willow and pampas. Disturbance from surrounding plantation forestry operations.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	L
	3.3	M
	3.4	M
	3.5	L
	3.6	M
Diversity and Pattern	3.7	L
Naturalness	3.8	L
Ecological Context	3.9	M
	3.10	L
Viability and Sustainability	3.11	L
	3.12	L
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

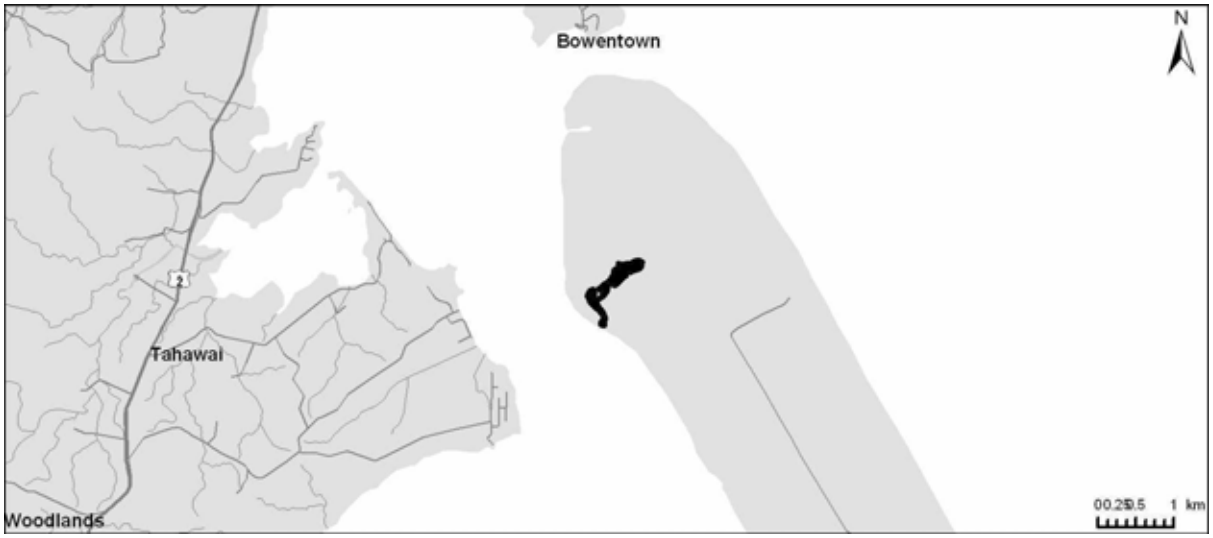
Significance Justification This site is locally significant because it includes examples of modified indigenous freshwater wetland, a habitat type which has been greatly reduced in extent in Tauranga Ecological District. This site is part of the extensive wetland complex at this end of Matakana Island (see the nationally significant sites Matakana Island 1, and Matakana Wetlands B and C sites).

Notes Ranked as 'moderate' quality marshbird habitat in Owen (1993) and the vegetation was ranked as of 'District' significance in Beadel (1994a).

References Beadel 1992a; Owen 1993.

MATAKANA ISLAND 3

Site Number SVHZ-74
Grid Reference (NZMG) 2774723 6407343
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Unprotected
Site Area 9.3 ha
Altitudinal Range 0 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Palustrine	Harakeke flaxland.	Wetland
Palustrine	*Baumea juncea* sedgeland.	Wetland
Palustrine	Pampas tussockland.	Wetland
Palustrine	Manuka scrub.	Wetland
Palustrine	(Radiata pine)/grey willow-(mingimingi)-(karamu)/*Baumea juncea* forest. (Current study and Owen 1993)	Wetland

Indigenous Flora This site includes the parts of a highly modified tidal inlet (drained and planted with pines) which are now freshwater wetland. No significant species are known to occur here.

Indigenous Fauna No birds recorded in 1992 (Owen 1993).

Condition/Pressures Noted in 1992: extensive stopbanking and drainage works, pampas and pig sign (Owen 1993).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	L
	3.3	M
	3.4	L
	3.5	L
	3.6	L
Diversity and Pattern	3.7	L
Naturalness	3.8	L
Ecological Context	3.9	M
	3.10	L
Viability and Sustainability	3.11	L
	3.12	L
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

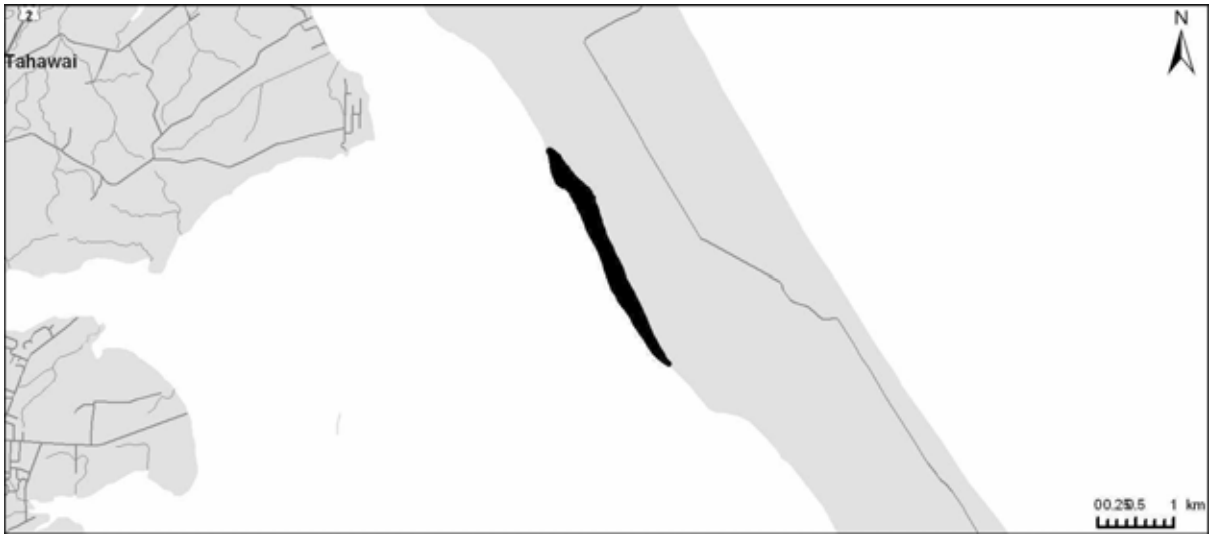
Relative Significance Local

Significance Justification This site is of local significance because it contains several small examples of freshwater wetland, a habitat which has been greatly reduced within the Tauranga Ecological District. It is complementary to higher quality wetland sites further north on Matakana Island. Heavy modification (drainage, infilling and weed invasion) of the site has taken place.

References Beadel 1992a; Owen 1993; Beadel 1994a; current study.

MATAKANA ISLAND 2

Site Number SVHZ-75
Grid Reference (NZMG) 2776510 6403937
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Unprotected
Site Area 48.7 ha
Altitudinal Range 0-2 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Palustrine	Cabbage tree-grey willow-manuka forest.	Wetland
Palustrine	Manuka scrub.	Wetland
Estuarine	Mangrove scrub.	Intertidal flat
Estuarine	Mangrove shrubland.	Intertidal flat
Estuarine	Harakeke flaxland.	Intertidal flat
Estuarine	*Baumea juncea* sedgeland.	Intertidal flat
Estuarine	*Baumea juncea*-saltmarsh ribbonwood-oioi sedgeland.	Intertidal flat
Estuarine	Harakeke/*Baumea juncea*-oioi-saltmarsh ribbonwood sedgeland.	Intertidal flat
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	Oioi rushland.	Intertidal flat
Estuarine	Sandspit vegetation.	Sandspit
Terrestrial	Radiata pine/*Austrostipa stipoides* forest. (Beadel 1994a and current study)	Sandspit

Indigenous Flora *Austrostipa stipoides* occurs under pines on the sandspit at the northern end of the site. This is considered to be a regionally uncommon species (Beadel 2006).

Indigenous Fauna Banded rail and North Island fernbird (At Risk, Sparse) recorded in 1992 (Owen 1993).

Condition/Pressures Wilding pine, grey willow and pampas infestations are present. Some drainage works are evident in the northern end of the site.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	M
	3.5	L
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	H
	3.12	M
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

Significance Justification This site is considered to be 'a relatively large, good quality representative example of the vegetation types present, characteristic of Tauranga Ecological District' (Beadel 1994a). A regionally uncommon plant species is present and threatened marshbirds are likely to be present, based on records from 1992. This site provides a protective buffer to seagrass beds and intertidal flats in a nationally significant part of the Tauranga Harbour.

Notes The vegetation in this site was ranked as being of District significance in Beadel (1994a) and was ranked as an outstanding marshbird habitat by Owen (1993). Identified as a Category 1 natural heritage site in the Tauranga Ecological District (Beadel and Shaw 2000b). The site is part of Mid Tauranga Harbour Key Ecological Zone.

References Owen 1993; Beadel 1994a; Beadel and Shaw 2000b; current study.

MATAKANA ISLAND 4

Site Number SVHZ-76
Grid Reference (NZMG) 2778234 6401689
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Unprotected
Site Area 19.2 ha
Altitudinal Range 0-4 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Sea rush tussockland.	Intertidal flats
Estuarine	Mangrove scrub and shrubland.	Intertidal flats
Estuarine	Oioi rushland.	Intertidal flats
Estuarine	*Baumea juncea* sedgeland.	Intertidal flats
Palustrine	*Olearia solandri*-toetoe-harakeke-manuka shrubland.	Wetland
Palustrine	Harakeke flaxland.	Wetland
Palustrine	(Radiata pine)-(*Eucalyptus* sp.)/manuka-brush wattle-pampas scrub.	Wetland
	(Beadel 1992a and current study)	

Indigenous Flora *Gleichenia microphylla* and *Hypolepis distans* are present underneath manuka in places. *Hypolepis distans* is considered to be regionally uncommon (Beadel 2006).

Indigenous Fauna Banded rail and North Island fernbird (At Risk, Sparse) present in 1992 (Owen 1993).

Condition/Pressures Wilding pines, pampas and brush wattle are problem weed infestations in the freshwater wetland areas.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

Significance Justification This site includes good quality, representative examples of saltmarsh and freshwater vegetation. Two at risk wetland bird species and two regionally uncommon plant species are known from this site. This site acts as a protective buffer to seagrass beds and intertidal flats in a nationally significant area of the Tauranga Harbour. A small part of the site is modified by weed pressures.

Notes The habitat quality of this site was ranked as 'high' by Owen (1993). This site is part of Mid Tauranga Harbour Key Ecological Zone.

References Beadel 1992a; Owen 1993; current study.

TIROHANGA MANGROVES

Site Number SVHZ-77
Grid Reference (NZMG) 2776281 6398271
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Unprotected
Site Area 237.3 ha
Altitudinal Range 0 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Mangrove scrub and shrubland. (Beadel 1994a)	Intertidal flat

Indigenous Flora This site contains the largest example of mangrove scrub and shrublands in the harbour. No significant species have been recorded (Beadel 1994a). This area of mangroves is distinctive because it forms a compact island in the harbour, separated from the shoreline by open water.

Indigenous Fauna Not known.

Condition/Pressures Not known.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	L
	3.3	M
	3.4	M
	3.5	H
	3.6	N/A
Diversity and Pattern	3.7	L
Naturalness	3.8	H
Ecological Context	3.9	H
	3.10	L
Viability and Sustainability	3.11	H
	3.12	H
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance National

Significance Justification The Tirohanga mangroves are nationally significant because they are the largest example of mangrove scrub and shrubland in the Tauranga Harbour. The site is very large, unified and relatively isolated, increasing its resilience to the range of pressures characteristic around Tauranga Harbour.

Notes Identified as vegetation of national significance by Beadel (1994a) and as a Category 1 natural heritage site in the Tauranga Ecological District (Beadel and Shaw 2000b). This site is part of Mid Tauranga Harbour Key Ecological Zone.

References Beadel 1994a; Beadel and Shaw 2000b..

BLUE GUM BAY 1

Site Number SVHZ-78
Grid Reference (NZMG) 2781408 6398648
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Unprotected
Site Area 180.6 ha
Altitudinal Range 0-8 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Palustrine	Grey willow forest.	Wetland
Estuarine	Manuka forest.	Intertidal flat
Palustrine	Cabbage tree/*Baumea juncea*-swamp coprosma-*Baumea articulata* treeland.	Wetland
Palustrine/estuarine	Manuka scrub.	Wetland, intertidal flat
Estuarine	Mangrove shrubland.	Intertidal flat
Palustrine/estuarine	Manuka-harakeke-toetoe shrubland.	Wetland, intertidal flat
Palustrine/estuarine	Manuka-mingimingi-*Olearia solandri* shrubland.	Wetland, intertidal flat
Estuarine	Sea rush tussockland.	Intertidal flat
Palustrine/estuarine	Harakeke flaxland.	Wetland, intertidal flat
Palustrine	*Baumea teretifolia- B. arthrophylla*)/ *Gleichenia dicarpa* fernland.	Wetland
Estuarine	*Baumea juncea*-sea rush-oioi sedgeland.	Intertidal flat
Estuarine	Oioi rushland.	Intertidal flat
Estuarine	Oioi-saltmarsh ribbonwood shrub-sedgeland.	Intertidal flat
Estuarine	*Schoenoplectus pungens* sedgeland.	Intertidal flat
Palustrine/estuarine	Estuary margin vegetation.	Wetland, intertidal flat
Estuarine	Sandspit vegetation.	Sandspit
	(Beadel 1994a and current study)	

Indigenous Flora No notable species have been recorded, however there has been no detailed botanical survey of this site.

Indigenous Fauna High numbers of banded rail and North Island fernbird (At Risk, Sparse), and one individual Australasian bittern (Acutely Threatened, Nationally Endangered) recorded in 1992 (Owen 1993).

Condition/Pressures The freshwater wetland vegetation is more modified than the saltmarsh vegetation, with expanding grey willow and wilding pine populations.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	H
	3.4	M
	3.5	H
	3.6	M
Diversity and Pattern	3.7	H
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	H
Viability and Sustainability	3.11	H
	3.12	M
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance National

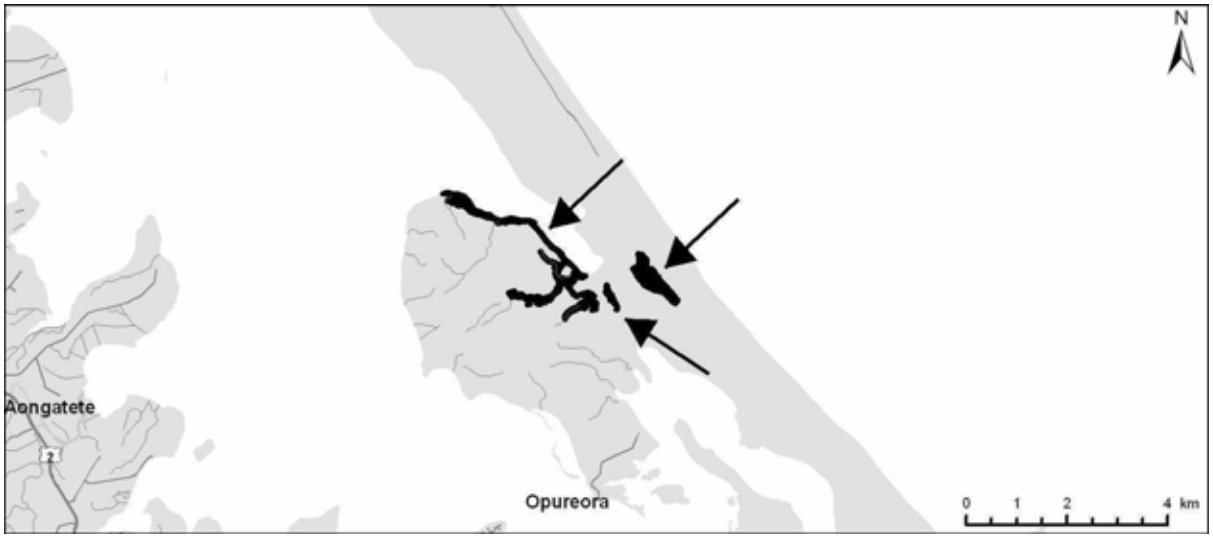
Significance Justification This site comprises a very large, diverse, relatively unmodified and representative estuarine and freshwater wetland complex. Two at risk bird species were present in high numbers in 1992 and it is highly likely that these populations persist, given the size of the site. This site is part of a nationally significant, representative tract of the vegetation and habitats of the Tauranga Harbour. Parts of the site are impacted by invasive weeds.

Notes Previous ranked as nationally significant vegetation by Beadel (1994a) and habitat for marshbirds of moderate to outstanding quality by Owen (1993). Identified as a Category 1 natural heritage site in the Tauranga Ecological District (Beadel and Shaw 2000b). This site is part of Mid Tauranga Harbour Key Ecological Zone.

References Owen 1993; Beadel 1994a; Beadel and Shaw 2000b; current study.

BLUE GUM BAY 2

Site Number SVHZ-79
Grid Reference (NZMG) 2781097 6397826
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Protected (WBOPDC Reserve) and unprotected parts
Site Area 70.8 ha
Altitudinal Range 0-18 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Palustrine	Cabbage tree-grey willow-manuka forest.	Wetland
Palustrine	Cabbage tree-manuka scrub.	Wetland
Palustrine	Grey willow forest.	Wetland
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	Oioi rushland.	Intertidal flat
Estuarine	Oioi-saltmarsh ribbonwood shrub-sedgeland.	Intertidal flat
Estuarine	*Baumea juncea* sedgeland.	Intertidal flat
Estuarine	*Schoenoplectus pungens* sedgeland.	Intertidal flat
Palustrine	Estuary margin vegetation.	Wetland
Palustrine	Raupo reedland.	Wetland
Palustrine	*Baumea articulata* reedland.	Wetland
Palustrine	*Eucalyptus* sp.-(radiata pine)/grey willow-mamaku-(cabbage tree) forest.	Wetland
	(Beadel 1992a; Beadel 1994a; and current study)	

Indigenous Flora No notable species have been recorded, however there has been no detailed botanical survey of this site.

Indigenous Fauna Banded rail and North Island fernbird (At Risk, Sparse) were recorded in 1992 (Owen 1993) along the western margins of Blue Gum Bay, at the northern end of the site.

Condition/Pressures This site includes modified wetland areas fringing and buffering the nationally significant wetlands of Blue Gum Bay 1. These areas have been affected variously by the following pressures: weed infestation (especially grey willow, woolly nightshade, pampas, wattle species and gorse), drainage, planting of exotic trees (e.g. *Eucalyptus* sp.), wilding plantation trees (e.g. radiata pine), domestic and farm rubbish dumping, cattle grazing, effluent run-off and other agricultural impacts.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	L
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	L
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	L
	3.12	L
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

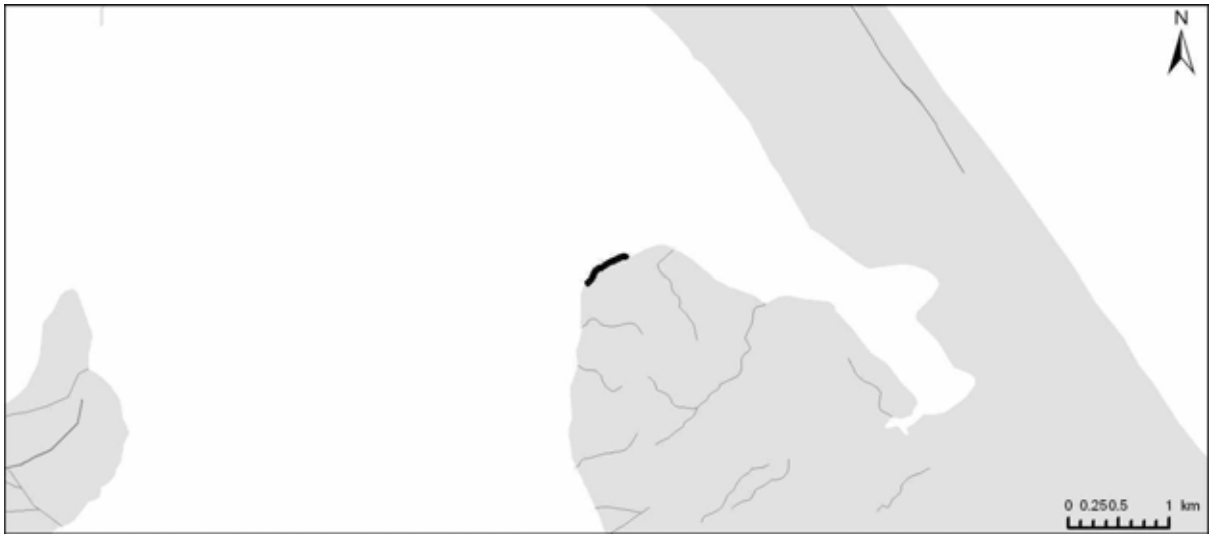
Significance Justification Vegetation contains examples of estuarine vegetation habitat types commonly found elsewhere in Tauranga ED. The site is large but fragmented, convoluted in shape and affected by a wide range of pest plants and human activity. These modified wetlands are locally significant as ecological linkages and partial buffers to the nationally significant wetlands at the centre of Blue Gum Bay (Blue Gum Bay 1). Two at risk wetland bird species are known to occur here.

Notes Includes Blue Gum Bay 2 from Beadel (1994a), in which the vegetation was ranked as being of District significance, as well as additional areas to the north and south. Includes site no.s 40 and 50 from Owen (1993) which were both ranked moderate for habitat quality. This site is part of Mid Tauranga Harbour Key Ecological Zone.

References Owen 1993; Beadel 1994a.

TIROHANGA POINT BEACH

Site Number SVHZ-80
Grid Reference (NZMG) 2778001 6399072
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Unprotected
Site Area 0.6 ha
Altitudinal Range 0-10 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Sandfield. (Current study)	Beach

Indigenous Flora Unvegetated, mobile sands.

Indigenous Fauna The beach is a regular nesting area for a pair of NZ dotterel (Acutely Threatened, Nationally Vulnerable) (John Heaphy pers. comm. 2006).

Condition/Pressures Possible stock access.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	L
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	L
	3.5	L
	3.6	N/A
Diversity and Pattern	3.7	L
Naturalness	3.8	H
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	L
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

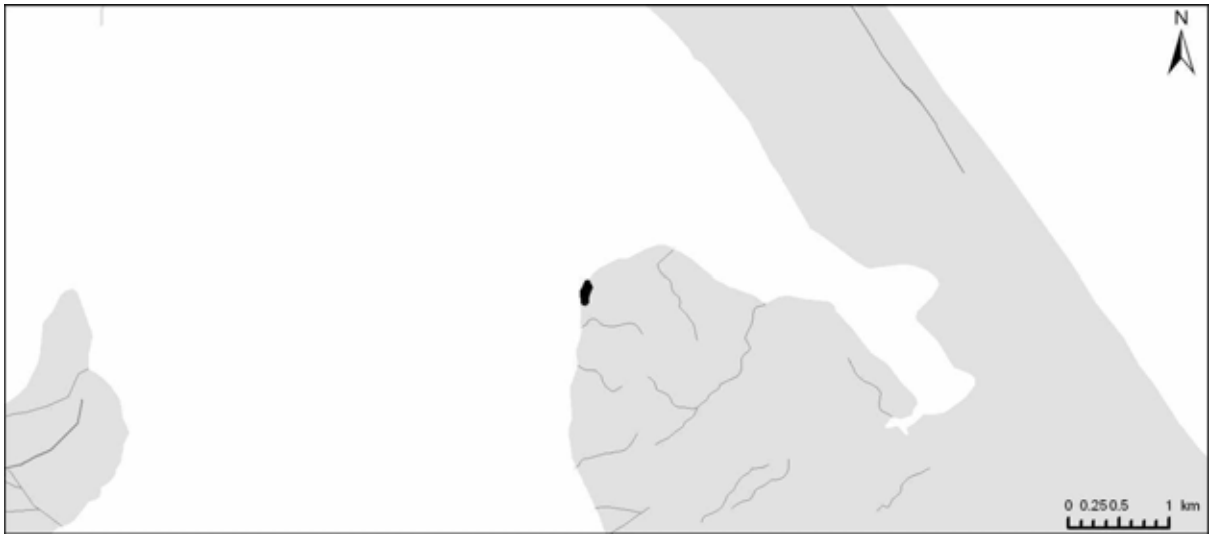
Relative Significance Local

Significance Justification A small site that nonetheless provides breeding habitat for an acutely threatened species (northern NZ dotterel). The largest population for this species in the region is centred on Tauranga Harbour.

References Current study.

TIROHANGA POINT POHUTUKAWA

Site Number SVHZ-81
Grid Reference (NZMG) 2777799 6398818
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Unprotected
Site Area 0.7 ha
Altitudinal Range 2-21 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa/woolly nightshade-karaka forest. (Current study)	Hillslope/headland

Indigenous Flora The pohutukawa forest understorey is dominated by woolly nightshade and exotic grasses.

Indigenous Fauna No specific information on fauna.

Condition/Pressures Woolly nightshade is the most common species in the understorey and is an invasive weed. Pampas is also present at the bottom of the face. The groundcover is dominated by exotic grasses, which may prevent indigenous species from establishing/regenerating.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	L
Rarity or Distinctive Features	3.2	L
	3.3	L
	3.4	L
	3.5	L
	3.6	H
Diversity and Pattern	3.7	L
Naturalness	3.8	L
Ecological Context	3.9	M
	3.10	L
Viability and Sustainability	3.11	L
	3.12	L
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

Significance Justification Pohutukawa forest was once common in Tauranga Ecological District, but has now been greatly reduced in extent and only small areas remain (e.g. Mauao, Kauri Point, Tuapiro, Ngakautuakina Point, Bowentown Heads, Motuhoa Island) (Beadel 1994a). The only examples of pohutukawa forest on Matakana Island are here and at Matakana Point, which are both relatively small examples.

References Current study.

MATAKANA POINT

Site Number	SVHZ-82
Grid Reference (NZMG)	2778104 6395821
Local Authority	Western Bay of Plenty District Council
Ecological District	Tauranga
Status	Unprotected
Site Area	2.0 ha
Altitudinal Range	0-20 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa-(radiata pine) forest. (Current study)	Hillslope,headland

Indigenous Flora Pohutukawa dominated forest with an understorey that includes karamu, houpara, rangiora, and hangehange.

Indigenous Fauna No specific fauna information.

Condition/Pressures Radiata pines are present in the canopy. Erosion of the coastal cliff has created areas of bare soil which are being colonised by brush wattle, pampas, gorse, and woolly nightshade, in addition to indigenous species.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	L
Rarity or Distinctive Features	3.2	L
	3.3	L
	3.4	L
	3.5	L
	3.6	L
Diversity and Pattern	3.7	L
Naturalness	3.8	L
Ecological Context	3.9	M
	3.10	L
Viability and Sustainability	3.11	L
	3.12	L
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

Significance Justification Pohutukawa forest was once common in Tauranga Ecological District, but has now been greatly reduced in extent and only small areas remain (e.g. Mauao, Kauri Point, Tuapiro, Ngakautuakina Point, Bowentown Heads, Motuhoa Island) (Beadel 1994a). The only examples on Matakana Island are here and at Tirohanga Point, which are both relatively small.

Notes There is an urupa on the headland.

References Current study.

TAHUNAMANU ISLAND

Site Number SVHZ-83
Grid Reference (NZMG) 2780690 6394500
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Unprotected
Site Area 2.1 ha
Altitudinal Range 0-5 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Glasswort herbfield.	Intertidal flat
Estuarine	Sandspit vegetation. (Beadel 1994a)	Dune and beach sands

Indigenous Flora No significant species recorded.

Indigenous Fauna The name 'tahuna' (sandbank) 'manu' (bird) suggests that this site has long been recognised by Maori as important to birds. These inner harbour sandspits and sandbanks are important high tide roosts and nesting areas for NZ dotterel (Acutely Threatened, Nationally Vulnerable), Caspian tern (Acutely Threatened, Nationally Endangered), white-fronted tern (Chronically Threatened, Gradual Decline) and variable oystercatcher (John Heaphy, pers. comm. 2006). A shorebird roost of increasing importance as other central Tauranga Harbour roosts become less favourable through factors like disturbance or erosion (Owen *et al.* 2006).

Condition/Pressures No information.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	M
	3.5	M
	3.6	M
Diversity and Pattern	3.7	L
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	H
Viability and Sustainability	3.11	L
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance National

Significance Justification Tahunamanu Island supports a representative example of the vegetation occurring on sandspits in Tauranga Harbour. It is a nesting and roosting area for three bird species which are acutely or chronically threatened. It includes one of the larger, better quality examples of glasswort herbfield in the Tauranga Harbour (Beadel 1994a). This site complements the nearby Opureora Spit, which is also nationally significant.

Notes This site is part of Motungaio Key Ecological Zone.

References Beadel 1994a; Owen *et al.* 2006.

OPUREORA SPIT

Site Number	SVHZ-84
Grid Reference (NZMG)	2782242 6393084
Local Authority	Western Bay of Plenty District Council
Ecological District	Tauranga
Status	Protected (WBOPDC reserve) and unprotected parts
Site Area	14.4
Altitudinal Range	0 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Palustrine	Manuka scrub.	Wetland
Palustrine	Manuka shrubland.	Wetland
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	*Austrostipa stipoides*-oioi-*Baumea juncea*-sea rush tussockland.	Intertidal flat
Estuarine	Oioi-saltmarsh ribbonwood shrub-sedgeland.	Intertidal flat
Terrestrial	Sandfield. (Beadel 1994a)	Dune and beach sands

Indigenous Flora

Austrostipa stipoides-oioi-*Baumea juncea*-sea rush tussockland is a distinctive vegetation type, found only once in the Tauranga Harbour in a 1992 survey (Beadel 1994a).

Indigenous Fauna

The sandspit is a nesting area for NZ dotterel (Acutely Threatened, Nationally Vulnerable), and the saltmarshes are habitat for North Island fernbird (At Risk, Sparse) (John Heaphy pers. comm. 2006).

North Island fernbird, cat-killed banded rail and spotless crake (At Risk, Sparse) reported 1992 (Owen 1993).

Condition/Pressures

Noted in 1992 (Owen 1993): rubbish dumping; stock access; vehicle access; range of weed species present.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	M
	3.5	L
	3.6	L
Diversity and Pattern	3.7	M
Naturalness	3.8	H
Ecological Context	3.9	H
	3.10	H
Viability and Sustainability	3.11	M
	3.12	H
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

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Relative Significance National

Significance Justification Opureora Spit provides important breeding habitat for one acutely threatened bird species, and is used by three at risk bird species. Together with Tahunamanu Island it is of national significance. This site includes a distinctive vegetation type, *Austrostipa stipoides*-oioi-*Baumea juncea*-sea rush tussockland, not found elsewhere in the harbour. Other sites nearby act as protective buffers to these sites.

Notes This site is part of Motungaio Key Ecological Zone.

References Owen 1993; Beadel 1994a.

OPUREORA INLET

Site Number SVHZ-85
Grid Reference (NZMG) 2782012 6393568
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Unprotected
Site Area 12.0 ha
Altitudinal Range 0 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	Oioi-saltmarsh ribbonwood shrub-sedgeland.	Intertidal flat
Palustrine	Manuka shrubland.	Wetland
Palustrine	(Cabbage tree)/*Cyperus ustulatus* sedgeland. (Current study and Beadel 1992a)	Wetland

Indigenous Flora No significant species recorded.

Indigenous Fauna Current habitat for North Island fernbird (At Risk, Sparse) (John Heaphy pers. comm. 2006). North Island fernbird, cat-killed banded rail and spotless crake (At Risk, Sparse) reported in 1992 (Owen 1993).

Condition/Pressures Weed invasion of the freshwater wetland; 4WD vehicles.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	L
Rarity or Distinctive Features	3.2	L
	3.3	M
	3.4	M
	3.5	L
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	M
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

Significance Justification Although relatively small in size, this site contains freshwater and estuarine wetlands and acts as a protective buffer to the nationally significant Opureora Spit. Three at risk bird species have been recorded here relatively recently.

Notes This site is part of Motungaio Key Ecological Zone.

References Owen 1993; Beadel 1992a; current study.

OPUREORA ISLET

Site Number SVHZ-86
Grid Reference (NZMG) 2782606 6393686
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Unprotected
Site Area 6.2 ha
Altitudinal Range 0 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Manuka-*Olearia solandri* scrub.	Sandbank
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	*Samolus repens* herbfield.	Intertidal flat
Estuarine	Sandspit vegetation.	Intertidal flat
Estuarine	Oioi saltmarsh ribbonwood shrub-sedgeland. (Beadel 1992a)	Intertidal flat

Indigenous Flora No notable species have been recorded.

Indigenous Fauna Current habitat for North Island fernbird (At Risk, Sparse) (John Heaphy pers. comm. 2006). North Island fernbird (At Risk, Sparse) also recorded in 1992 (Owen 1993).

Condition/Pressures Noted in 1992 (Owen 1993): vehicle impacts; weeds - pampas, gorse, wattle, woolly nightshade, and blackberry. Vehicle tracks are still present; the islet is commonly used as an accessway between Opureora settlement and Rangiwaea Island (current study).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

Significance Justification A small natural area that is complementary to Motungaio Island and acts as a protective buffer to Opureora Inlet and Opureora Spit. There are recent and repeated records of an at risk bird species dependent on this type of habitat in the area.

Notes This site is part of Motungaio Key Ecological Zone.

References Beadel 1992a; Owen 1993.

MOTUNGAIO ISLAND

Site Number SVHZ-87
Grid Reference (NZMG) 2782994 6393307
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Unprotected
Site Area 21.3 ha
Altitudinal Range 0 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Manuka forest.	Dune and beach sands
Terrestrial	Manuka scrub.	Sandbank
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	*Baumea juncea*-saltmarsh ribbonwood-oioi sedgeland.	Intertidal flat
Estuarine	*Olearia solandri*/oioi rushland.	Intertidal flat
Estuarine	*Samolus repens* herbfield.	Intertidal flat
Terrestrial	Sandspit vegetation.	Sandbank
Estuarine	Oioi saltmarsh ribbonwood shrub-sedgeland. (Beadel 1992a)	Intertidal flat

Indigenous Flora No notable species have been recorded.

Indigenous Fauna North Island fernbird (At Risk, Sparse) (John Heaphy, pers. comm. 2006).

Condition/Pressures Unknown.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	M
	3.5	L
	3.6	M
Diversity and Pattern	3.7	H
Naturalness	3.8	H
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

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Relative Significance Regional

Significance Justification A good quality example of an ecological sequence grading from terrestrial forest to estuarine saltmarsh. The site is contiguous with or close to Opureora Inlet, Opureora Spit, and Opureora Islet, and helps buffer the nationally significant Opureora Spit. There are recent records of an at risk bird species.

References Beadel 1992a; Beadel 1994a.

WAIHEREHERE ROAD WETLAND

Site Number SVHZ-88
Grid Reference (NZMG) 2782137 6395837
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Unprotected
Site Area 1.2 ha
Altitudinal Range 0-3 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Palustrine	Grey willow forest. (Current study)	Wetland

Indigenous Flora No information.

Indigenous Fauna Banded rail (At Risk, Sparse) recorded in 1992 (Owen 1993).

Condition/Pressures Noted in 1992 (Owen 1993): Edges of wetland modified by stock grazing; wilding pines, grey willow, Spanish heath and blackberry. Currently the wetland is still grazed and has similar levels of weed infestation.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	L
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	L
Naturalness	3.8	L
Ecological Context	3.9	H
	3.10	L
Viability and Sustainability	3.11	L
	3.12	L
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

Significance Justification A small, modified freshwater wetland with moderate ecological values. It acts as a protective buffer to an area of the Tauranga Harbour which is ranked as nationally significant in the current study.

Notes Ranked 'moderate' quality marshbird habitat by Owen (1993).

References Owen (1993); current study.

OTAPU BAY

Site Number SVHZ-89
Grid Reference (NZMG) 2782688 6396275
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Unprotected
Site Area 54.6 ha
Altitudinal Range 0-1 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Palustrine	Grey willow forest.	Wetland
Palustrine/estuarine	Manuka scrub.	Wetland, intertidal flat
Palustrine/estuarine	Manuka shrubland.	Wetland, intertidal flat
Estuarine	Sea rush tussockland.	Intertidal flat
Palustrine	*Baumea teretifolia-B.* sp. (*B. arthrophylla*)/ *Gleichenia dicarpa* fernland.	Wetland
Estuarine	*Baumea juncea* sedgeland.	Intertidal flat
Estuarine	Oioi rushland.	Intertidal flat
Estuarine	Oioi-*Baumea juncea* sedgeland.	Intertidal flat
Estuarine	Oioi-saltmarsh ribbonwood shrub-sedgeland.	Intertidal flat
Estuarine	*Schoenoplectus pungens* sedgeland. (Beadel 1994a)	Intertidal flat

Indigenous Flora No notable species have been recorded in this site, however there have been no detailed botanical surveys.

Indigenous Fauna Banded rail and North Island fernbird (At Risk, Sparse) recorded in 1992; earlier reports of Australasian bittern (Acutely Threatened, Nationally Endangered) (Owen 1993). These birds are still likely to be present, given the quality of the habitat, however there is no recent information.

Condition/Pressures Noted in 1992 (Owen 1993): stock access; range of weeds present; domestic rubbish dumping; vehicle access and use.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	H
	3.4	H
	3.5	H
	3.6	M
Diversity and Pattern	3.7	H
Naturalness	3.8	H
Ecological Context	3.9	H
	3.10	H
Viability and Sustainability	3.11	H
	3.12	H
	3.13	H

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** H = High, M = Medium, L = Low.

Relative Significance National

Significance Justification Otapu Bay is a large, relatively intact, high quality, representative example of a contiguous estuarine and freshwater wetland vegetation sequence (Beadel 1994a). Past records of one acutely threatened and two at risk wetland bird species exist, and these populations are likely to persist given the size and quality of habitat. This site is part of a nationally significant, representative tract of vegetation and habitat in the Tauranga Harbour. Grey willow is present in places.

Notes This site has previously been known as 'Hunters Creek', however the name 'Otapu Bay' has been used in this survey to acknowledge the name originally given to the bay by tangata whenua.

Ranked as nationally significant vegetation in Beadel (1994a) and as moderate to outstanding quality marshbird habitat by Owen (1993). Identified as a Category 1 natural heritage site in the Tauranga Ecological District (Beadel and Shaw 2000b).

This site is part of Motungaio Key Ecological Zone.

References Owen 1993; Beadel 1994a; Beadel and Shaw 200b; current study.

RANGIWAEA ISLAND FORESHORE

Site Number SVHZ-90
Grid Reference (NZMG) 2783675 6393878
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Protected (WBOPDC reserve) and unprotected parts
Site Area 13.0
Altitudinal Range 0 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	Oioi-saltmarsh ribbonwood shrub-sedgeland.	Intertidal flat
Estuarine	*Austrostipa stipoides* tussockland.	Intertidal flat
Estuarine	*Samolus repens* herbfield.	Intertidal flat
Estuarine	Glasswort herbfield.	Intertidal flat
Palustrine	Manuka scrub.	Wetland
Palustrine	Harakeke flaxland.	Wetland
	(Beadel 1992a; Owen 1993 and current study)	

Indigenous Flora *Austrostipa stipoides* is considered to be a regionally uncommon plant (Beadel 2006). There is quite a large population of it at the southern end of this site.

Indigenous Fauna A banded rail (At Risk, Sparse) was sighted amongst *Austrostipa stipoides* during the current survey. North Island fernbird (At Risk, Sparse) were recorded in 1992 (Owen 1993). Shore skink (not threatened) are present (John Heaphy pers. comm. 2006).

Condition/Pressures Pampas and hakea infestations are present on the inland edge of the site, and there is also extensive vehicle damage to vegetation, e.g. bulldozed tracks, evidence of tractor and trailbike usage (Owen 1993).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

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** H = High, M = Medium, L = Low.

Relative Significance Regional

Significance Justification This moderately-sized site contains one of the largest sea rush tussocklands in the Tauranga Ecological District, and provides a protective buffer to a nationally significant area of the Tauranga Harbour. Human impacts have significantly modified the natural character of the site, which supports a regionally uncommon plant species, and there are current or past records for two at risk wetland bird species.

Notes This site was not identified as significant vegetation in Beadel (1994a). Owen (1993) ranked the site as moderate quality habitat for marshbirds.

A herpetological survey in this area is recommended, because speckled skink (Chronically Threatened, Gradual Decline) were recorded on the eastern side of Rangiwaea Island in 1992 (Owen 1993).

Part of this site is in Motungaio Key Ecological Zone.

References Beadel 1992a; Owen 1993; current study.

MOTUTANGAROA ISLE FORESHORE

Site Number SVHZ-91
Grid Reference (NZMG) 2784365 6392904
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Protected (WBOPDC reserve) and unprotected parts
Site Area 13.9 ha
Altitudinal Range 0 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Oioi-saltmarsh ribbonwood shrub-sedgeland.	Intertidal flat
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine/terrestrial	Sandspit habitat.	Sandspit
Estuarine	Glasswort herbfield.	Intertidal flat
Estuarine	*Samolus repens* herbfield.	Intertidal flat
Palustrine	Manuka-grey willow-(mamaku)-woolly nightshade forest.	Wetland
	(Beadel 1992a, Owen 1993 and current study)	

Indigenous Flora No significant species have been recorded.

Indigenous Fauna The sandspit at the southern end of the site is a nesting area for NZ dotterel (Acutely Threatened, Nationally Vulnerable) (John Heaphy, pers. comm. 2006). North Island fernbird (At Risk, Sparse) were recorded in the saltmarsh in 1992 (Owen 1993), and a banded rail was recorded in the neighbouring site (Rangiwaea Island Foreshore) during the current survey, very near to the boundary with this site, so it is likely that this site is also used by this species.

Condition/Pressures Gorse, wilding pine, woolly nightshade and grey willow infestations are present in and around the margins of the freshwater wetland, which is surrounded by a pine plantation reaching harvest age. Vehicle tracks and rubbish dumping have been identified as pressures in the past (Owen 1993), and appear to be ongoing.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	H
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

Significance Justification A site of moderate size that contains examples of estuarine and sandspit vegetation typical of Tauranga ED. The sandspit portion is currently breeding habitat for the acutely threatened northern NZ dotterel, and is an important site for the regional population. Two at risk marsh bird species are likely to use this site. This site provides a protective buffer to a nationally significant area of the Tauranga Harbour, however vehicle use and weeds are impacting on the quality of the site.

Notes This site was not identified as significant vegetation in Beadel (1994a). Owen (1993) ranked the site as moderate quality habitat for marshbirds.

A herpetological survey in this area is recommended, because speckled skink (Chronically Threatened, Gradual Decline) were recorded on the eastern side of Rangiwaea Island in 1992 (Owen 1993).

Part of this site is in the Motungaio Key Ecological Zone.

References Beadel 1992a; Owen 1993; current study.

RANGIWAEA ISLAND ESTUARY

Site Number SVHZ-92
Grid Reference (NZMG) 2784836 6392147
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Protected (WBOPDC reserve) and unprotected parts
Site Area 31.8 ha
Altitudinal Range 0-9 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Palustrine/estuarine	Manuka-(mamaku) scrub.	Wetland, beach sands
Palustrine	Raupo reedland.	Wetland
Palustrine	*Carex sinclairii* sedgeland.	Wetland
Palustrine	Grey willow-(cabbage tree) forest.	Wetland
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	Oioi rushland.	Intertidal flat
Terrestrial	Sandspit vegetation.	Sandspit
	(Beadel 1992a and current study)	

Indigenous Flora Pingao (Chronically Threatened, Gradual Decline) occurs on the sandspit (Beadel 1994a).

Indigenous Fauna The sandspit is a nesting area for NZ dotterel (Acutely Threatened, Nationally Vulnerable) (John Heaphy pers. comm. 2006). North Island fernbird, cat-killed banded rail and spotless crake (At Risk, Sparse) were recorded in 1992 (Owen 1993).

Condition/Pressures Noted in 1992 (Owen 1993): rubbish dumping; stock access; vehicle access; range of weed species present.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	H
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	H
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

Significance Justification This site is considered to be a good example of manuka scrub on sand, contiguous with saltmarsh, vegetation types characteristic of Tauranga Ecological District (Beadel 1994a). It is regionally significant because it provides good habitat for at risk marshbird species, and includes a small nesting area for NZ dotterel, which is an acutely threatened species. This site provides a protective buffer to a nationally significant area of the Tauranga Harbour.

Notes The vegetation in this site was previously ranked as being of District significance (Beadel 1994a), and it was classed as a high quality habitat for marshbirds by Owen (1993).

A herpetological survey in this area is recommended, because speckled skink (Chronically Threatened, Gradual Decline) were recorded on the eastern side of Rangiwaea Island in 1992 (Owen 1993).

Part of this site is in the Motungaio Key Ecological Zone.

References Owen 1993; Beadel 1992a; Beadel 1994a; current study.

RANGIWAEA ISLAND EAST

Site Number SVHZ-93
Grid Reference (NZMG) 2785420 6392852
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Protected (WBOPDC reserve) and unprotected parts
Site Area 15.7 ha
Altitudinal Range 0 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	*Baumea juncea*-saltmarsh ribbonwood-oioi sedgeland	Intertidal flat
Estuarine	Oioi rushland.	Intertidal flat
Palustrine	Manuka shrubland.	Wetland
Estuarine	Mangrove shrubland.	Intertidal flat
	(Beadel 1992a and current study)	

Indigenous Flora No significant species have been recorded.

Indigenous Fauna Banded rail sign, North Island fernbird (At Risk, Sparse) and speckled skink Chronically Threatened, (Gradual Decline) were recorded in 1992 (Owen 1993). If speckled skink are still present at this site, this is one of the most northerly populations on the NZ mainland. This species has a scattered distribution around the Volcanic Plateau and Rangataiki Plains, with outlying populations west of Hamilton, Hawke's Bay, upper Rangitikei catchment, between Patea and Wanganui, and a few sites in the Wairarapa. Elsewhere within the Bay of Plenty coastal environment it is present on Moutohora (Towns *et al.* 2002).

Condition/Pressures The site is bordered by a narrow fringe of mixed exotic scrub. Old vehicle tracks were noted in 1992 (Owen 1993), but they are no longer apparent today. Mangrove shrubland appears to have developed along the outer edge of the saltmarsh since the early 1990s.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	H
	3.5	L
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	H
Ecological Context	3.9	H
	3.10	H
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

Significance Justification An extensive area of high quality estuarine vegetation on the eastern side of Rangiwaea Island, where pressures on natural character appear to be low. Provides reasonably good habitat for threatened marshbird species and may have one of the most northern populations of the chronically threatened speckled skink, though recent information is lacking.

Notes Owen (1993) ranked this site as high quality habitat for marshbird species.

A herpetological survey in this area is recommended.

References Beadel 1992a; Owen 1993; current study.

TAURANGA HARBOUR AT MOTUNGAIO ISLAND

Site Number SVHZ-94
Grid Reference (NZMG) 2782588 6393388
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Protected (WBOPDC reserve) and unprotected parts
Site Area 946.3 ha
Altitudinal Range 0-20 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	*Zostera* spp. grassland.	Intertidal and sub-tidal flat
Estuarine	Mangrove shrubland.	Intertidal flat
Estuarine	Mangrove scrub.	Intertidal flat
Estuarine	Estuary margin vegetation mosaics.	Intertidal flat
Estuarine	Harakeke flaxland.	Intertidal flat
Estuarine	Searush tussockland.	Intertidal flat
Estuarine	Oioi rushland.	Intertidal flat
Estuarine	*Schoenoplectus pungens* sedgeland.	Intertidal flat
Estuarine	Oioi-saltmarsh ribbonwood shrub-sedgeland.	Intertidal flat
Estuarine	Glasswort herbfield.	Intertidal flat
Estuarine	Sandspit.	Intertidal flat
Marine	Worm field.	Subtidal channel
Marine	Worm field.	Intertidal flat
Marine	Cockle bed.	Intertidal flat
Marine	Pipi bed.	Subtidal channel
Marine	Horse mussel field.	Subtidal channel
	(Beadel 1992a; Stephen Park, Environment BOP, pers. comm. 2006; current study).	

Indigenous Flora This site contains extensive areas of *Zostera* spp. beds.

Indigenous Fauna Extensive intertidal flats are feeding grounds for wader bird species (principally godwit and pied oystercatcher), including areas adjacent to known, major wader roosting areas.

Condition/Pressures Sediment and nutrient runoff that decreases levels of light reaching seabed may have contributed significantly to a 34% reduction in the extent of seagrass beds in Tauranga Harbour between 1959 and 1996 (Park 1999).

Control and eradication efforts in recent years mean that *Spartina*, a significant weed of intertidal flats, now poses a potential rather than an actual threat.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	H
	3.6	N/A
Diversity and Pattern	3.7	H
Naturalness	3.8	H
Ecological Context	3.9	H
	3.10	H
Viability and Sustainability	3.11	H
	3.12	H
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance National

Significance Justification The extensive intertidal flats found around Motungaio are close to Tahunamanu, an important shorebird roost, and other smaller roosts, and function as important shorebird feeding areas. This site also contains significant areas of high-density sea-grass beds. Tauranga Harbour as a whole is regarded as meeting criteria to be considered a Ramsar Wetland of International Importance (Owen *et al.* 2006), and this site is a particularly high-value component of it.

Notes This site is part of Motungaio Key Ecological Zone.

References Beadel 1992a; Park 1999; Owen *et al.* 2006; current study.

MAUAO 1

Site Number SVHZ-95
Grid Reference (NZMG) 2790028 6392034
Local Authority Tauranga City Council
Ecological District Tauranga
Status Protected (TCC reserve - Mauao) and unprotected parts
Site Area 43.3 ha
Altitudinal Range 0-111 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa treeland.	Very steep hill
Terrestrial	Akeake-manuka-tarata-kohuhu-ti kouka-ngaio-koromiko-harakeke scrub.	Very steep hill
Terrestrial	Ngaio scrub.	Very steep hill
Terrestrial	(Pohutukawa)-(rewarewa)/mamaku-mahoe treefernland.	Very steep hill
Terrestrial	Gorse-manuka-Spanish heath-pampas scrub.	Very steep hill
Terrestrial	Mapou-mingimingi-mahoe-karamu scrub.	Very steep hill
Terrestrial	Pohutukawa/gorse-pampas scrub.	Very steep hill
Terrestrial	(Pohutukawa)-(kanuka)-(rewarewa)-(totara)/mahoe-whauwhaupaku-manuka-karamu-hawthorn-mingimingi scrub.	Very steep hill
Terrestrial	Mahoe-karamu-mamaku-hangehange scrub.	Very steep hill
Terrestrial	Manuka scrub.	Very steep hill
Terrestrial	Manuka-kanuka-mingimingi-(pohutukawa) scrub.	Very steep hill
Terrestrial	Pohutukawa/mingimingi-akepiro-hangehange scrub.	Very steep hill
Terrestrial	Totara-mahoe-hawthorn scrub.	Very steep hill
Terrestrial	Gorse-pampas tussock-shrubland.	Very steep hill
Terrestrial	Whau-karamu-ngaio-(tarata)-(manuka)-(pohutukawa)-(taupata)/kikuyu grass-cocksfoot shrubland.	Very steep hill
Terrestrial	Pampas/gorse-Spanish heath-manuka-harakeke/exotic grasses shrubland rockland.	Very steep hill
Terrestrial	Mamaku-brush wattle-(Taiwan cherry)-(mahoe)-(hawthorn) treefernland.	Very steep hill
Terrestrial	Pohutukawa/mahoe-mingimingi-hawthorn-	Very steep hill

Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	kawakawa-gorse shrubland. Manuka-harakeke-ngaio-pohutukawa/exotic grasses shrubland. (Wildland Consultants 2005j)	Very steep hill

Indigenous Flora

Several species with a limited distribution in Tauranga Ecological District are present on Mauao. Of special note are *Psilotum nudum*, *Lepidosperma laterale* and mangemange (*Lygodium articulatum*) (Bibby *et al.* 1999).

Indigenous Fauna

Northern little blue penguins (Chronically Threatened, Gradual Decline) breed on the Mauao coast (OSNZ 2006). Shore skinks are present but at low abundance (John Heaphy pers. comm. 2006).

There is a grey-faced petrel breeding colony on Mauao which has been supplemented by DOC-led translocations and monitored by members of OSNZ since 1989. From a high point of around 36 chicks fledging per season in 1999-2002, there has been a dramatic decline due to pest impacts, with no fledged chicks in the 2005-2006 breeding season (Cuming 2006).

Condition/Pressures

Tauranga City Council is restoring and monitoring the vegetation on Mauao (Wildland Consultants 2004d and 2005j).

The following weed species are present within the site: boneseed, mignonette (Madeira vine), climbing asparagus, smilax, evergreen buckthorn, wild ginger, *Pinus* spp., tree privet, Japanese honeysuckle, woolly nightshade, brush wattle, gorse and pampas (Wildland Consultants 2005j).

Since 2000 weed control has reduced the distribution and/or abundance of wild ginger, pampas, gorse, and boneseed. Pampas and gorse remain widespread but are less dominant than they were in 2000. Other invasive species that have not been controlled include climbing asparagus, Japanese honeysuckle, smilax, wild ginger, evergreen buckthorn, mignonette vine, blue morning glory, Spanish heath and loquat (Wildland Consultants 2005j).

The following activities have impacted on the site during the period of 2000-2005: Fire has had a major negative impact; recreation (tracks) and erosion have had a moderate negative impact. Weed control and planting have had a moderate positive impact and restoration works and animal pest control have had a minor positive impact on the site (Wildland Consultants 2005j).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	M
	3.5	M
	3.6	H
Diversity and Pattern	3.7	H
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	M
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance National

Significance Justification The site encompasses a large portion of the eroded Mauao (Mt Maunganui) rhyolite dome, which is a nationally important geological feature (Kenny and Hayward 1996), and includes good examples of remnant pohutukawa forest and secondary mixed forest on volcanic hard coast (Beadel 1994a). Pohutukawa forest was once common in Tauranga Ecological District, but has now been greatly reduced in extent and only small areas remain (e.g. Mauao, Kauri Point, Ngakautuakina Point, Matakana Point, Tuapiro, Bowentown Heads, Motuhoa Island). Significant pressure exerted by weeds and fire are being actively managed. In addition the site is habitat for a chronically threatened bird species (little blue penguin), and notable for being a mainland breeding site for grey-faced petrel.

Notes This site is ranked as a Category 1 Special Ecological Site (SES) in Tauranga City (Wildland Consultants 2005j) and was identified as a Category 1 natural heritage site in the Tauranga Ecological District (Beadel and Shaw 2000b).

Mauao has high historic, archaeological, and heritage values.

References Kenny and Hayward 1996; Beadel and Shaw 2000b; Wildland Consultants 2005j; OSNZ 2006; Beadel 1994a; Bibby *et al.* 1999; Cuming 2006.

MAUAO 2

Site Number SVHZ-96
Grid Reference (NZMG) 2790247 6391703
Local Authority Tauranga City Council
Ecological District Tauranga
Status Protected (TCC reserves - Mauao, Mauao Recreation Reserve) and unprotected parts
Site Area 4.3 ha
Altitudinal Range 0-54 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa treeland.	Hillslope
Terrestrial	Akeake-manuka-tarata-kohuhu-ti kouka-ngaio-koromiko-harakeke scrub.	Hillslope
Terrestrial	Ngaio scrub.	Hillslope
Terrestrial	Pohutukawa-taupata/*Ficinia nodosa* tree-tussockland.	Hillslope
Terrestrial	Macrocarpa/karaka-pohutukawa treeland.	Hillslope
Terrestrial	Sycamore-karaka-radiata pine treeland.	Hillslope
Terrestrial	Radiata pine-eucalyptus- (sycamore)/pohutukawa-poplar treeland.	Hillslope
Terrestrial	Kawakawa-whau-mamaku scrub.	Hillslope
Terrestrial	Kawakawa-pohuehue/pohuehue-blackberry shrubland.	Hillslope
	(Wildland Consultants 2005j)	

Indigenous Flora No significant species recorded.

Indigenous Fauna Northern little blue penguins (Chronically Threatened, Gradual Decline) breed on the Mauao coast (OSNZ 2006). Shore skinks are present but at low abundance (John Heaphy pers. comm. 2006).

Condition/Pressures Fire, erosion, and invasive weeds such as sycamore, pampas and other exotic grasses, e.g. kikuyu, cocksfoot, and ratstail (Wildland Consultants 2004a). This site includes revegetation areas (Wildland Consultants 2005j).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	L
	3.6	H
Diversity and Pattern	3.7	M
Naturalness	3.8	L
Ecological Context	3.9	M
	3.10	M
Viability and Sustainability	3.11	L
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

Significance Justification This site is a mix of extensively modified indigenous and adventive vegetation. However, it provides a partial protective buffer to the nationally ranked 'Mauao 1' site, is a breeding area for a chronically threatened bird species, and forms part of a nationally significant geological feature.

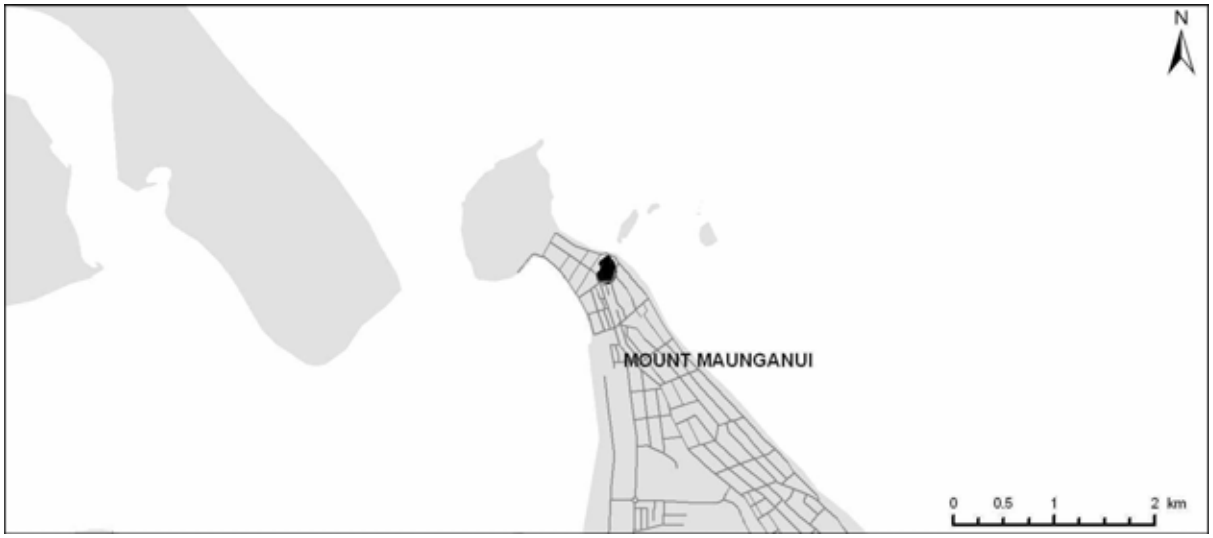
Notes This site is ranked as a Category 2 Special Ecological Site (SES) in Tauranga City (Wildland Consultants 2005j).

Mauao has high historic, archaeological, and heritage values.

References Kenny and Hayward 1996; Wildland Consultants 2004a; Wildland Consultants 2005j; OSNZ 2006.

HOPUKIORE

Site Number SVHZ-97
Grid Reference (NZMG) 2791117 6391434
Local Authority Tauranga City Council
Ecological District Tauranga
Status Protected (TCC reserve - Hopukiore Reserve) and unprotected parts
Site Area 1.6 ha
Altitudinal Range 11-20 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa forest and scrub. (Wildland Consultants 2005j)	Hill

Indigenous Flora No notable species have been recorded. Historic photos from the early 1900s show that indigenous vegetation had been virtually removed from Hopukiore. The present-day vegetation is derived mainly from plantings and natural regeneration (Wildland Consultants 1995).

Indigenous Fauna No notable species have been recorded.

Condition/Pressures Recreational impacts e.g. pedestrian tracks. Invasive weeds at the site include tradescantia, arum lily, climbing asparagus, phoenix palm, cotoneaster, agapanthus, and Japanese honeysuckle (current study).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	L
	3.3	L
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	L
Naturalness	3.8	L
Ecological Context	3.9	L
	3.10	L
Viability and Sustainability	3.11	L
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

Significance Justification Hopukiore is locally significant because it includes a small example of pohutukawa forest – a vegetation type which has been greatly reduced in extent in the Tauranga Ecological District. The vegetation present reflects a high degree of modification and weed invasion typical in urban areas.

Notes This site is ranked as a Category 2 Special Ecological Site (SES) in Tauranga City (Wildland Consultants 2005j).

Hopukiore has historic and archaeological values.

References Wildland Consultants 1995; Wildland Consultants 2005j; rapid field assessment (2005).

MOTURIKI ISLAND

Site Number SVHZ-98
Grid Reference (NZMG) 2791311 6391880
Local Authority Tauranga City Council
Ecological District Tauranga
Status Protected (TCC reserve - Moturiki)
Site Area 2.8 ha
Altitudinal Range 0-13 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa-karo-taupata-*Melicytus novae-zelandiae*-ngaio scrub.	Marine island
Terrestrial	(Ngaio)-(harakeke)-(pohutukawa)/introduced iceplant-Indian doab-kikuyu grassland.	Marine island
Terrestrial	*Ficinia nodosa*-pohuehue/ratstail-cocksfoot-*Poa anceps* grassland.	Marine island
Terrestrial	(Taupata)-(pohutukawa)/(oioi)/(glasswort)-(*Senecio lautus*) rockland. (Wildland Consultants 2005j)	Marine island

Indigenous Flora *Melicytus novae-zelandiae*, which is uncommon on the mainland in the Bay of Plenty, is present on Moturiki but may have been planted there during 1972-75 (Wildland Consultants 1995).

Indigenous Fauna This is a nesting site for northern little blue penguin (Chronically Threatened, Gradual Decline) (John Heaphy pers. comm. 2006).

Condition/Pressures Invasive weeds such as South African iceplant, *Lagunaria pattersonii*, dimorphotheca, evergreen buckthorn, boxthorn, and pampas (current study). Australian ngaio (*Myoporum insulare*) has been planted on the island (Wildland Consultants 1995). In the past the island has been quarried and used as a marine theme park.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	L
	3.6	H
Diversity and Pattern	3.7	M
Naturalness	3.8	L
Ecological Context	3.9	L
	3.10	M
Viability and Sustainability	3.11	L
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

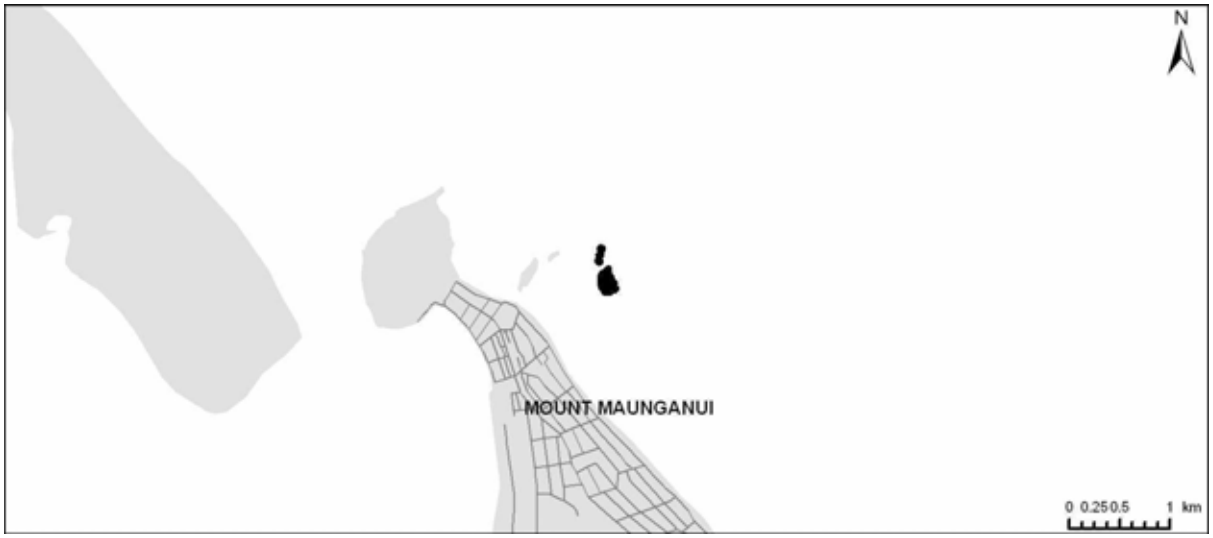
Significance Justification Moturiki contains small remnants of coastal forest once more widespread throughout the ED, albeit modified heavily by past disturbance and ongoing weed infestation. Provides breeding habitat for a chronically threatened bird species (northern little blue penguin).

Notes This site is ranked as a Category 2 Special Ecological Site (SES) in Tauranga City (Wildland Consultants 2005j).

References Wildland Consultants 1995; Wildland Consultants 2005j; rapid field assessment (2005).

MOTUOTAU ISLAND

Site Number SVHZ-99
Grid Reference (NZMG) 2792091 6391833
Local Authority Tauranga City Council
Ecological District Tauranga
Status Protected (DOC Motuotau Island Scenic Reserve)
Site Area 2.8 ha
Altitudinal Range 0-34 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa forest. (Wildland Consultants 2005j)	Marine island

Indigenous Flora

Melicytus novaezelandiae is regionally uncommon in the Bay of Plenty and generally occurs naturally only on islands, including Motuotau (Wildland Consultants 2000a).

Asplenium flaccidum subsp. *haurakiense* is present (NZFRI 141; collected by Bruce Clarkson in 1990).

Indigenous Fauna

Reef herons (Acutely Threatened, Nationally Vulnerable) are known to feed around this island and also nest here. The outlying rocks are nesting sites for red-billed gulls (Chronically Threatened, Gradual Decline). There is also a grey-faced petrel nesting colony here (John Heaphy pers. comm. 2006).

Condition/Pressures

Infestations of ivy, banana passionfruit, *Asparagus* sp., woolly nightshade, and wild ginger were recorded in 1992, but banana passionfruit and wild ginger had been controlled by 2000 (Wildland Consultants 2000a). Small infestations of boxthorn were noted in 2000.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	L
	3.5	L
	3.6	L
Diversity and Pattern	3.7	L
Naturalness	3.8	H
Ecological Context	3.9	L
	3.10	H
Viability and Sustainability	3.11	M
	3.12	H
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance National

Significance Justification A good quality example of indigenous vegetation/habitat that is under-represented nationally (i.e. coastal pohutukawa forest) and that is representative of the ecological character of the Region.

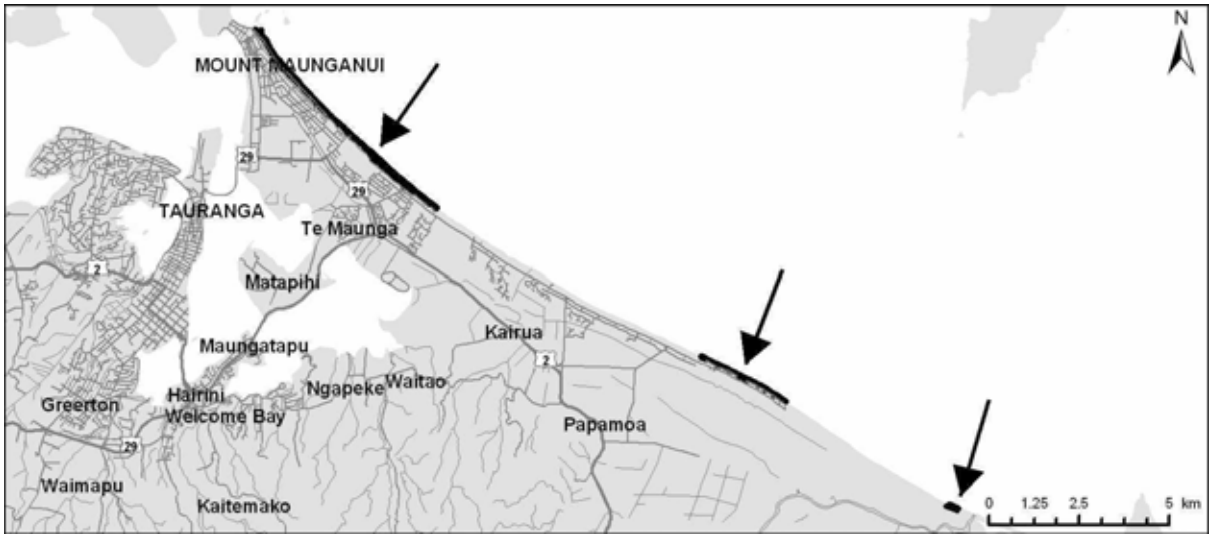
Contains a remnant of a forest type that is much reduced in extent through its natural range, and which typifies a major component of the ecological character of the Bay of Plenty coastal region. A range of pest plant species with the potential to alter the natural character of the site are present, although some species have been controlled. Provides habitat for a regionally uncommon plant species, and breeding habitat for one acutely threatened and one chronically threatened bird species.

Notes This site is ranked as a Category 1 Special Ecological Site (SES) in Tauranga City (Wildland Consultants 2005j) and was identified as a Category 1 natural heritage site in the Tauranga Ecological District (Beadel and Shaw 2000b).

References Beadel and Shaw 2000b; Wildland Consultants 2005j; Wildland Consultants 2000a.

SHARK ALLEY TO KAITUNA SPIT SAND DUNES

Site Number SVHZ-100
Grid Reference (NZMG) 2796105 6387363
Local Authority Tauranga City Council
Ecological District Tauranga
Status Protected (TCC reserve) and unprotected parts
Site Area 48.4 ha
Altitudinal Range 0-5 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohuehue-spinifex vineland.	Sand dune
Terrestrial	Spinifex-*Calystegia soldanella*-(pingao) sandfield.	Sand dune
Terrestrial	Lupin-iceplant-gazania-spinifex-ripgut brome-purple groundsel-harestail-dimorphotheca-*Calystegia soladanella*-broomrape-arctotis-(pingao) grassland and herbfield.	Sand dune
Terrestrial	Spinifex-pingao sandfield.	Sand dune
Terrestrial	Pohuehue vineland and grass-herb-vineland.	Sand dune
Terrestrial	Evergreen buckthorn-pohuehue-*Ficinia nodosa* vine-shrubland.	Sand dune
Terrestrial	Perehia-spinifex-ice plant-pingao-*Calystegia soldanella*-pohuehue herb-vine-grassland.	Sand dune
Terrestrial	*Ficinia nodosa*/pohuehue-tall fescue vineland.	Sand dune
Estuarine	(*Ficinia nodosa*)-(pohutukawa)-(*Coprosma acerosa* x *C. repens*) rockland.	Oceanside sand beach
	(Beadel 1995b and Wildland Consultants 2005j)	

Indigenous Flora

Pingao (Chronically Threatened, Gradual Decline) and hinarepe (sand tussock – Chronically Threatened, Gradual Decline) (Wildland Consultants 2005j). Native celery (*Apium prostratum* - not threatened but uncommon in Tauranga Ecological District) occurs on a rock off the Shark Alley sand dunes. There are also small natural populations of akeake, houpara, and karo, which are now all locally uncommon on sand dunes in the Bay of Plenty.

Melicytus novae-zelandiae is present in the dunes locally. It is not known whether these populations have derived from plantings or from natural occurrence. This species only occurs at one other mainland site (Matakana

Island) in coastal Bay of Plenty.

Coprosma acerosa x *C. repens* occurs on the rocks near Shark Alley sand dunes. This is one of only two known naturally occurring populations for this hybrid in the Bay of Plenty. (Beadel 1995?)

Indigenous Fauna

NZ dotterel (Acutely Threatened, Nationally Vulnerable) and banded dotterel (Chronically Threatened, Gradual Decline) present. White-fronted tern (Chronically Threatened, Gradual Decline) present in large numbers. Roosting area for a range of migrant species (OSNZ 2006).

Condition/Pressures

In places, residential properties encroach into the site and exotic plants include garden escapes from adjacent properties. Vehicles are causing damage to the site, particularly at Papamoa East.

Detailed weed distribution maps were produced for this site in summer 2002, and formed the basis for a Tauranga City Council 10 year environmental weed management plan (Wildland Consultants 2002b).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	M
	3.5	M
	3.6	H
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	M
Viability and Sustainability	3.11	H
	3.12	M
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance

Local

Significance Justification

A narrow, discontinuous site containing examples of indigenous sand dune vegetation, albeit extensively modified by heavy human use and adjacent residential activity. A range of NZ and migratory shorebird species, several of which are acutely or chronically threatened, are occasionally recorded here.

Notes

Shark Alley beach has the largest ongoing sand renourishment programme in New Zealand. It is intended to counteract loss of sand due to sand removal from Tauranga Harbour (Greg Jenks pers. comm. 2006).

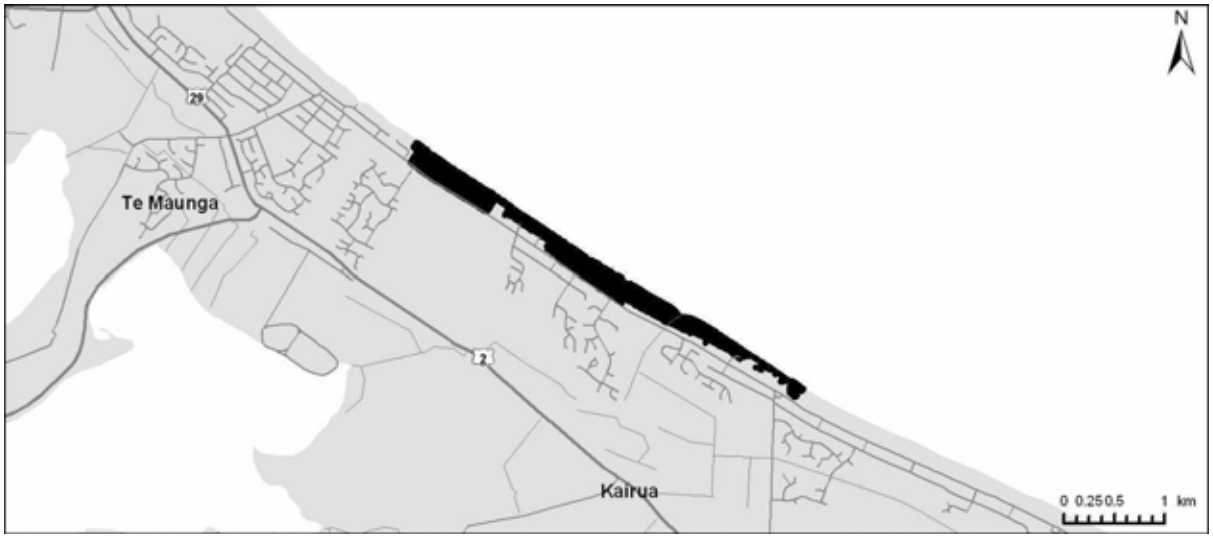
This site is ranked as a Category 2 Special Ecological Site (SES) in Tauranga City (Wildland Consultants 2005j).

References

Beadel 1995b; Wildland Consultants 2002b; Wildland Consultants 2005j; OSNZ 2006.

OTIRA SAND DUNES

Site Number SVHZ-101
Grid Reference (NZMG) 2797846 6385506
Local Authority Tauranga City Council
Ecological District Tauranga
Status Protected (TCC reserve) and unprotected parts
Site Area 59-5 ha
Altitudinal Range 0-2 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohuehue-spinifex vineland.	Sand dune
Terrestrial	Spinifex-pingao sandfield.	Sand dune
Terrestrial	Perehia-harestail-*Carex testacea*/pohuehue-*Calystegia soldanella* grass-vineland.	Sand dune
Terrestrial	*Ficinia nodosa*/pohuehue-spinifex-harestail-perehia-ripgut brome-*Calystegia soldanella* vine-grassland.	Sand dune
Terrestrial	Harestail-perehia-*Carex testacea*/pohuehue-*Calystegia soldanella* vineland.	Sand dune
Terrestrial	*Ficinia nodosa*/pohuehue vineland and sedge-vineland.	Sand dune
Terrestrial	Lupin-sweet vernal/Yorkshire fog grassland	Sand dune
Terrestrial	Sweet vernal-harestail/*Carex testacea*-pohuehue grassland.	Sand dune
Terrestrial	Spinifex-*Calystegia soldanella* sandfield. (Beadel 1995b and Wildland Consultants 2005j)	Sand dune

Indigenous Flora Pingao and *Euphorbia glauca* (both ranked Chronically Threatened, Gradual Decline) were present within the site in 2000, 2002 and 2005. Shore spurge had been planted by Coast Care (Wildland Consultants 2005j).

Indigenous Fauna No specific information on fauna.

Condition/Pressures Detailed weed distribution maps were produced for this site in summer 2002, and formed the basis for a Tauranga City Council 10 year environmental weed management plan (Wildland Consultants 2002b).

The following weed species are currently present within the site: Cape ivy, tuber ladder fern, climbing dock, marram, periwinkle, Japanese spindle tree, lupin, smilax, South African iceplant, evergreen buckthorn, moth plant, tradescantia, black wattle, Chinese privet, blackberry brush wattle, gorse and pampas (Wildland Consultants 2005j).

No change in weed abundance and distribution was detected in this site during 2000-2005. In part this may be because weeds are scattered throughout the site at relatively low densities, and it would take a large change for any variation to be detected in the abundance and distribution scores. Exotic grasses are present throughout the site but are more common towards its western end. Lupins are scattered on the foredune. This species has a potentially high negative impact because it is a nitrogen-fixer, which alters the nutrient status of the substrate and may create habitat suitable for other adventive species, however its numbers are kept low by a fungal pathogen that has been present in the lupin population since the 1980s (Wildland Consultants 2005j).

The following activities impacted on the site during the period of 2000-2005: pedestrian and vehicle tracks, dumping of organic and inorganic waste has had a minor negative impact and animal pest and weed control has had a minor positive impact on the site (Wildland Consultants 2005j).

Parts of the site are bounded by residential housing on the foredune, and the gardens of some of these properties are encroaching into the site, resulting in indigenous vegetation being damaged and/or replaced by exotic species.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	H
	3.5	M
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

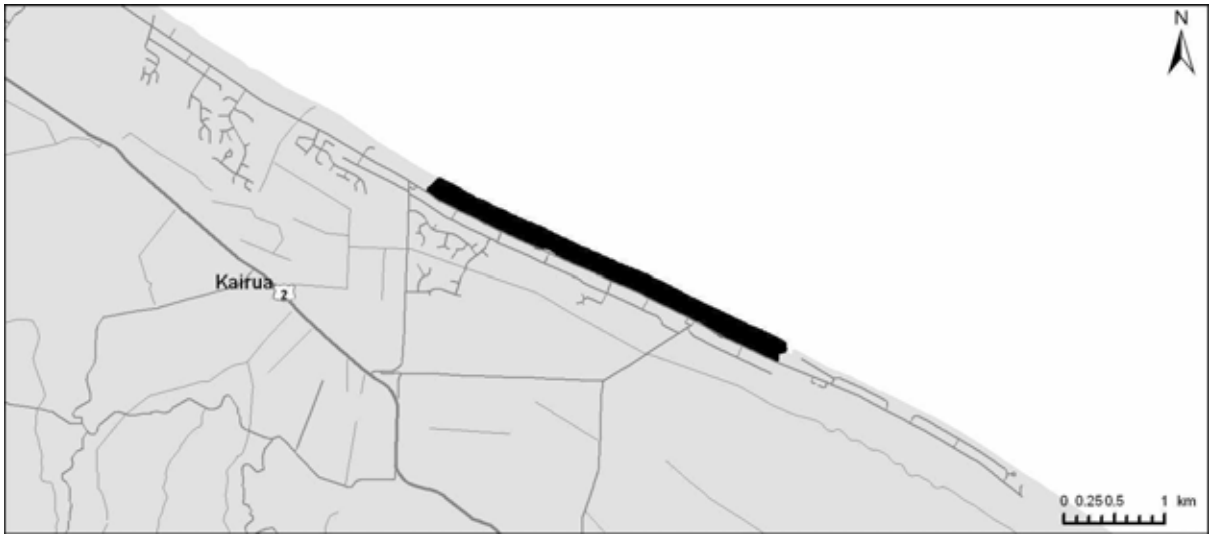
Relative Significance Regional

Significance Justification A relatively good quality large example of indigenous vegetation or habitat for indigenous species which is representative of the ecological character of the Region, and which is a nationally uncommon habitat.

	The Otira Sand Dunes site comprises a much wider strip of representative sand dune vegetation type than the adjacent Shark Alley dunes. Accordingly it has greater resilience and buffering from encroaching human impacts, and this is reflected in the condition of its natural character.
Notes	This site is ranked as a Category 1 Special Ecological Site (SES) in Tauranga City (Wildland Consultants 2005j) and was identified as a Category 1 natural heritage site in the Tauranga Ecological District (Beadel and Shaw 2000b).
References	Beadel 1995b; Beadel and Shaw 2000b; Wildland Consultants 2002b; Wildland Consultants 2005j.

PAPAMOA SAND DUNES

Site Number SVHZ-102
Grid Reference (NZMG) 2801825 6383295
Local Authority Tauranga City Council
Ecological District Tauranga
Status Protected (TCC reserve - Papamoa Beach Reserve 2)
Site Area 60.1 ha
Altitudinal Range 0-2 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohuehue-spinifex vineland.	Sand dune
Terrestrial	Spinifex-pingao grassland.	Sand dune
Terrestrial	Spinifex-*Calystegia soldanella* sandfield.	Sand dune
Terrestrial	Spinifex-*Calystegia soldanella*-harestail-perehia-catsear sandfield and grassland.	Sand dune
Terrestrial	*Ficinia nodosa*/bracken-*Carex testacea*-pohuehue-harestail grass-vine-sedge-fernland and fern-vine-sedgeland.	Sand dune
Terrestrial	*Carex testacea*-bracken-pohuehue-harestail sedge-vineland.	Sand dune
Terrestrial	*Ficinia nodosa*/bracken/pohuehue fernland and sedge-fern-vineland. (Beadel 1995b and Wildland Consultants 2005j)	Sand dune

Indigenous Flora Pingao, hinarepe (sand tussock), and sand pimelea (all in Chronically Threatened, Gradual Decline) were recorded within the site in 2000, 2002 and 2005 (Wildland Consultants 2005j).

Indigenous Fauna No specific fauna information.

Condition/Pressures Detailed weed distribution maps were produced for this site in summer 2002, and formed the basis for a Tauranga City Council 10 year environmental weed management plan (Wildland Consultants 2002b).

The following weed species are currently present within the site: German ivy, tuber ladder fern, climbing dock, marram, periwinkle, silver poplar, Japanese spindle tree, lupin, South African iceplant, evergreen buckthorn, Taiwan

cherry, tradescantia, black wattle, Japanese honey suckle, blackberry and pampas (Wildland Consultants 2005j).

The abundance and distribution of pampas and Japanese spindle tree has decreased in this site in recent years, and climbing dock may have increased. There is a wide variety of exotic species within the parts of the site that are adjacent to the road including Norfolk pine, freesia, cape spurge and nasturtium (Wildland Consultants 2005j).

The following activities have impacted on the site during the period of 2000-2005: Pedestrian and vehicle tracks and dumping of organic waste have had a moderate negative impact; the dumping of inorganic waste has had a minor negative impact and planting has had a minor positive impact on the site (Wildland Consultants 2005j).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	H
	3.5	M
	3.6	H
Diversity and Pattern	3.7	H
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	M
Viability and Sustainability	3.11	H
	3.12	M
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

Significance Justification A relatively large, good quality, diverse example of sand dune vegetation of the Bay of Plenty. Three chronically threatened plant species are present.

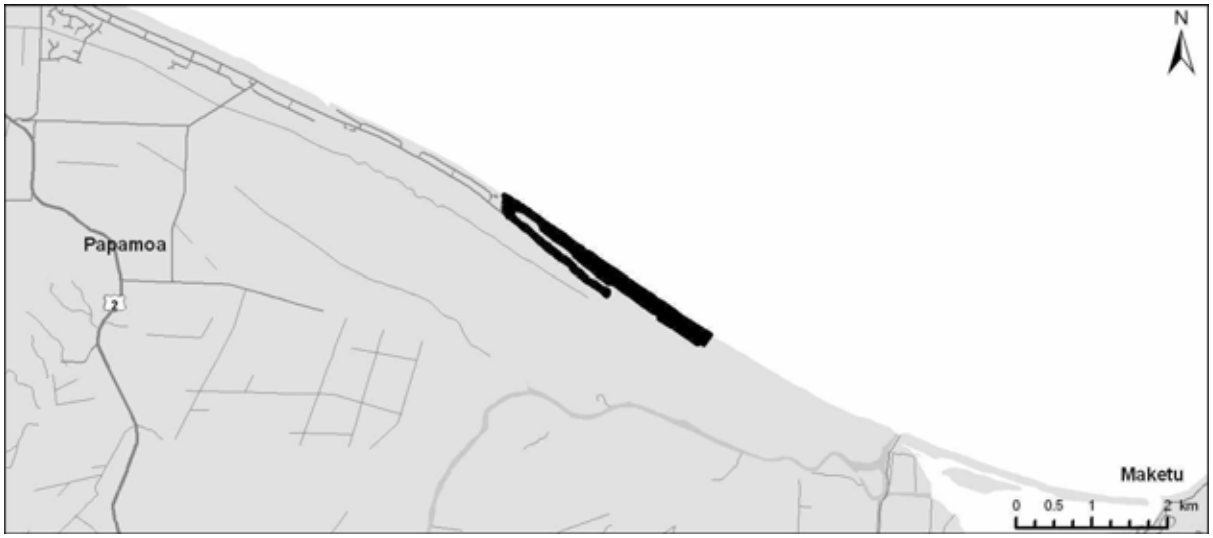
The Papamoa Sand Dunes site comprises a relatively wide strip of representative sand dune vegetation. Accordingly it has greater resilience and buffering from encroaching human impacts, and this is reflected in the condition of its natural character.

Notes This site is ranked as a Category 1 Special Ecological Site (SES) in Tauranga City (Wildland Consultants 2005j) and was identified as a Category 1 natural heritage site in the Tauranga Ecological District (Beadel and Shaw 2000b).

References Beadel 1995b; Beadel and Shaw 2000b; Wildland Consultants 2002b; Wildland Consultants 2005j.

KAITUNA SAND DUNES AND WETLAND

Site Number SVHZ-103
Grid Reference (NZMG) 2807335 6380219
Local Authority Tauranga City Council
Ecological District Tauranga
Status Unprotected
Site Area 52.5 ha
Altitudinal Range 0-1 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohuehue-spinifex vineland.	Sand dune
Palustrine	Raupo reedland.	Wetland
Terrestrial	Spinifex-(hinarepe)-(pingao) sandfield.	Sand dune
Terrestrial	Spinifex-(pingao) sandfield.	Sand dune
Terrestrial	*Carex pumila* sandfield.	Sand dune
	(Wildland Consultants 2005j and Beadel 1994a))	

Indigenous Flora Pingao (Chronically Threatened, Gradual Decline) and hinarepe (sand tussock, *Austrofestuca littoralis*, Chronically Threatened, Gradual Decline) were recorded within the site in 2000, 2002 and 2005 (Wildland Consultants 2005j).

Indigenous Fauna NZ dotterel (Acutely Threatened, Nationally Vulnerable), banded dotterel (Chronically Threatened, Gradual Decline) present, white-fronted tern (Chronically Threatened, Gradual Decline) present in large numbers. Roosting area for a range of migrant bird species (OSNZ 2006).

Condition/Pressures Detailed weed distribution maps were produced for this site in summer 2002, and formed the basis for a Tauranga City Council 10 year environmental weed management plan (Wildland Consultants 2002b).

The following weed species are currently present within the site: Japanese spindle tree, lupin, South African iceplant, evergreen buckthorn, moth plant, woolly nightshade, grey willow, blackberry, gorse and pampas (Wildland Consultants 2005j).

This site is less weed-infested than the sand dunes to the west, and there was no detectable change in weed distribution or abundance within the site

between 2000 and 2005. However, South African iceplant, gazania, and an unidentified succulent plant are present on the dunes near the houses (at the east end of the site), and there is potential that they will spread further if left unchecked (Wildland Consultants 2005j).

The following activities have negatively impacted on the site during the period of 2000-2005: Vegetation clearance has had a moderate negative impact and recreation (tracks) and dumping of inorganic waste has had a minor negative impact on the site (Wildland Consultants 2005j).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	H
	3.4	H
	3.5	H
	3.6	H
Diversity and Pattern	3.7	H
Naturalness	3.8	H
Ecological Context	3.9	M
	3.10	M
Viability and Sustainability	3.11	H
	3.12	M
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance National

Significance Justification

A good quality example of a nationally uncommon suite of habitats grading from back-dune wetland to a dynamic coastal beach system that is under-represented nationally (i.e. coastal dunes). This site is ranked as a Category 1 Special Ecological Site (SES) in Tauranga City (Wildland Consultants 2005j) and was identified as a Category 1 natural heritage site in the Tauranga Ecological District (Beadel and Shaw 2000b).

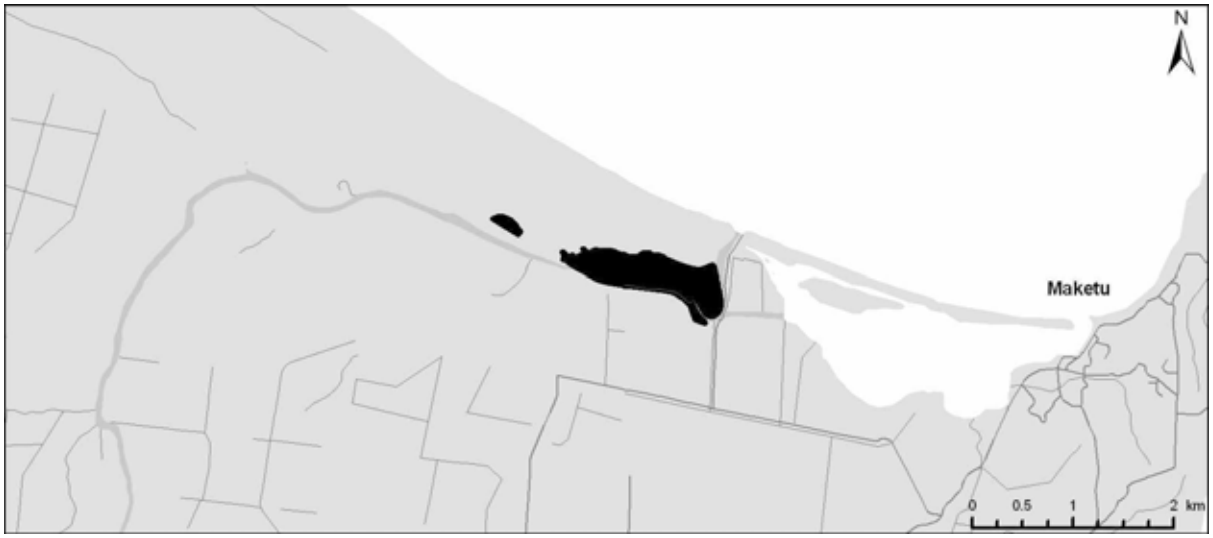
Weed pressure is relatively low compared to other similar sites. Two chronically threatened plant species are present. One acutely threatened, two chronically threatened, and a range of international migratory bird species currently use this site.

This site contains the largest population of sand tussock in the Region.

References Beadel and Shaw 2000b; Wildland Consultants 2002b; Wildland Consultants 2005j; OSNZ 2006.

KAITUNA RIVER WETLANDS (PART)[1]

Site Number SVHZ-104
Grid Reference (NZMG) 2810226 6377732
Local Authority Tauranga City Council and Western Bay of Plenty District Council
Ecological District Tauranga
Status Protected (WBOPDC reserve) and unprotected parts
Site Area 48.0 ha
Altitudinal Range 0-3 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pampas tussockland.	Alluvial flat
Terrestrial	Gorse/tall fescue-pampas/paspalum-bare ground shrubland.	Alluvial flat
Terrestrial/estuarine	Pampas-sea rush-gorse-tall fescue- *Bolboschoenus fluviatilis* grassland.	Alluvial flat
Terrestrial	Tall fescue-*Juncus edgariae*/paspalum grassland.	Alluvial flat
Terrestrial	Tall fescue/pasture grassland.	Alluvial flat
Terrestrial	Pasture.	Alluvial flat
Riverine	Raupo reedland.	Wetland
Riverine/estuarine	Pampas/raupo-tall fescue-(oioi)-(*Bolboschoenus fluviatilis*) reedland.	Wetland
Riverine	(Harakeke)/raupo reedland.	Wetland
Riverine	Raupo/reed sweetgrass-*Schoenoplectus tabernaemontani*-tall fescue reedland.	Wetland
Riverine	*Coprosma propinqua* subsp. *propinqua*-harakeke-ti kouka/*Schoenoplectus tabernaemontani*-raupo reedland.	Wetland
Riverine	Harakeke-*Coprosma propinqua* subsp. *propinqua*/raupo-*Baumea articulata* flax-reedland.	Wetland
Riverine	*Coprosma propinqua* subsp. *propinqua-Baumea articulata* reedland.	Wetland
Riverine	Tall fescue-*Juncus edgariae* /reed sweetgrass-	Wetland

[1] A small part of the Kaituna River Wetlands occurs outside the 'coastal environment' study area (i.e. further than 1 km inland of MHWS).

Hydrosystem	Vegetation/Habitat Type	Landform
	Eleocharis acuta rushland.	
Palustrine	(Grey willow)/manuka-harakeke scrub.	Wetland
Palustrine	Grey willow forest.	Wetland
	(Wildland Consultants 2005j,Wildland Consultants 2005p)	

Indigenous Flora Thirty-seven indigenous plant species were recorded in 2005 and none were rare or threatened (Wildland Consultants 2005p).

Indigenous Fauna NZ dotterel (Acutely Threatened, Nationally Vulnerable), banded dotterel (Chronically Threatened, Gradual Decline) present, white-fronted tern (Chronically Threatened, Gradual Decline) present in large numbers. Roosting area for a range of migrant species (OSNZ 2006).

Spawning of inanga (*Galaxias maculatus*, not threatened), a culturally and commercially important species, recorded in 1988, mainly among tidally-inundated tall fescue, Mercer grass and *Juncus edgariae* (Mitchell 1990). Grazing in dry autumns, dying willows collapsing onto site, paper road running through spawning area identified as threats to inanga spawning areas (Mitchell 1990).

Condition/Pressures Parts of the site are grazed.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	M
	3.5	M
	3.6	M
Diversity and Pattern	3.7	H
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	M
Viability and Sustainability	3.11	M
	3.12	L
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

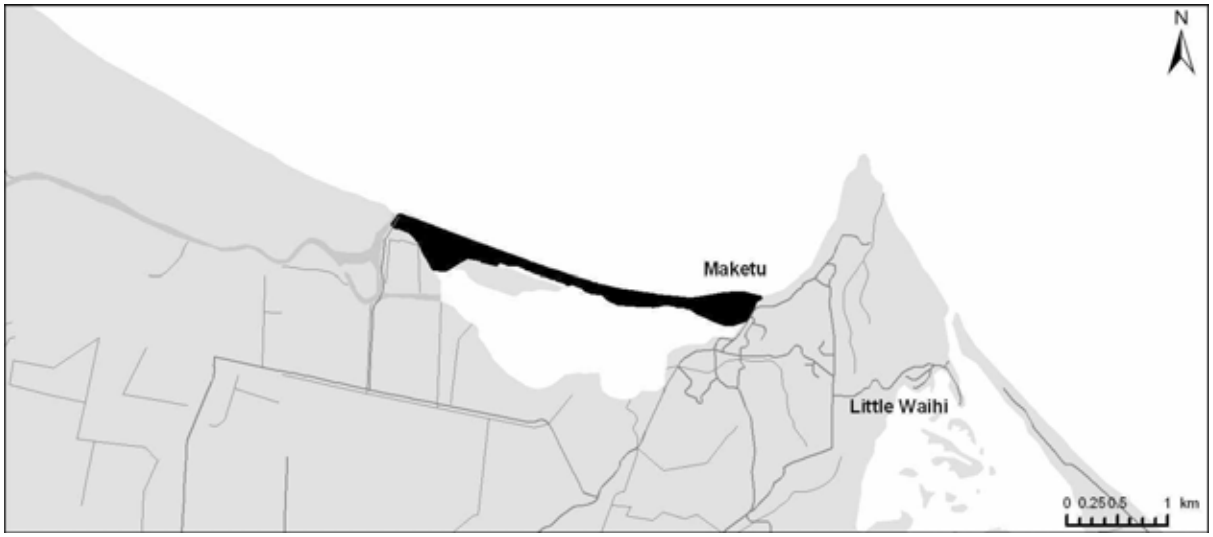
Relative Significance Regional

Significance Justification This site comprises one of the last small remnants of the great Kawa Swamp, a once large wetland covering much of the Maketu Plains (Kirk 1873). Some of the vegetation types present here are not well-represented at other sites in the Tauranga Ecological District (Beadel 1994a). Acutely threatened species have been recorded at the site, but it is not known if all these species use the site on a regular basis or whether some are occasional visitors.

Notes	Part of this site is ranked as a Category 2 Special Ecological Site (SES) in Tauranga City (Wildland Consultants 2005j) and was identified as a Category 1 natural heritage site in the Tauranga Ecological District (Beadel and Shaw 2000b).
References	Mitchell 1990; Beadel and Shaw 2000b; Wildland Consultants 2005j; Wildland Consultants 2005p; OSNZ 2006.

MAKETU SPIT AND WILDLIFE MANAGEMENT RESERVE

Site Number	SVHZ-105
Grid Reference (NZMG)	2812837 6377550
Local Authority	Western Bay of Plenty District Council
Ecological District	Tauranga
Status	Protected (DOC Maketu Wildlife Management Reserve, WBOPDC reserve) and unprotected parts
Site Area	48.5 ha
Altitudinal Range	0-3 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Spinifex sandfield.	Dune and beach sands
Terrestrial	Spinifex-pingao grassland and sedgeland.	Sand dune
Terrestrial	Pohuehue vineland.	Sand dune
Terrestrial	Radiata pine/pohuehue vineland.	Sand dune
Estuarine	Impounded open water.	Pond/lagoon
	(Current study)	

Indigenous Flora

The vegetation on the spit is dominated by indigenous species such as spinifex, pohuehue, and pingao (Chronically Threatened, Gradual Decline). In 1992 a small population of hinarepe (sand tussock – Chronically Threatened, Gradual Decline) was recorded at this site (Beadel 1994a), but this species has not been seen recently. There is a lagoon at the southwest end of the spit which has been created by causeways which impound part of the estuary.

Indigenous Fauna

Maketu has the highest wading bird species diversity in the Bay of Plenty, including both internal and transequatorial migrants. This is the most important winter roost for NZ fairy tern (Acutely Threatened, Nationally Critical) in the Bay of Plenty, with 4-6 birds each winter The end of Maketu Spit and the opposite side of the estuary mouth are NZ dotterel (Acutely Threatened, Nationally Vulnerable) and variable oystercatcher nesting areas. North Island fernbird (At Risk, Sparse) are present in the Wildlife Management Reserve part and along the back of the dunes (John Heaphy pers. comm. 2006). Caspian tern, reef heron, wrybill (Acutely Threatened, Nationally Vulnerable); banded dotterel (Chronically Threatened, Gradual Decline); breeding banded rail (At Risk, Sparse); range of migratory species all recorded since 2003 (OSNZ 2006). Shorebirds roost on sandspits either

side of estuary mouth (Owen et al 2006).

Shore skinks are common along the spit (John Heaphy pers. comm. 2006).

Condition/Pressures Domestic cat release, hedgehogs and mustelids are the main pest problems at this location (John Heaphy pers. comm. 2006). Radiata pines are scattered along the southern face of the spit. The lagoon is often covered in a dense growth of smelly algae as a result of lack of water movement

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	L
	3.5	L
	3.6	H
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	M
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

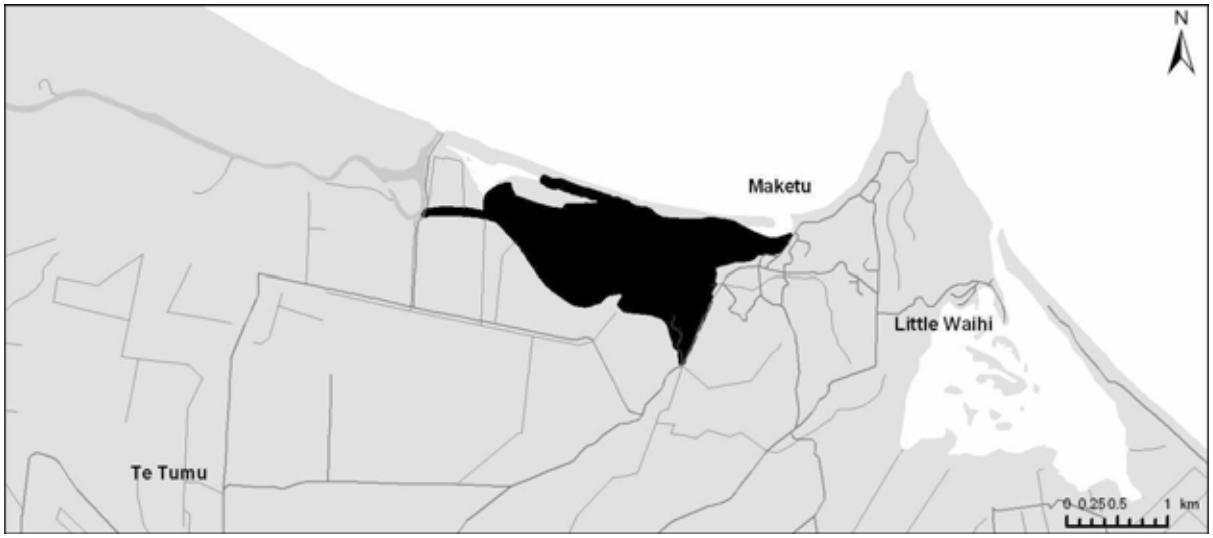
Significance Justification Maketu Spit and Wildlife Management Reserve comprises an example of sand dune vegetation that is modified by invasive exotic plants. The site is of regional significance, however it is used by a range of threatened species and a higher ranking could possible be warranted for part of the site. It is regularly used by acutely threatened, chronically threatened, and at risk bird species, as well as international and NZ wader species.

Notes The lagoon (Maketu Wildlife Management Reserve) is impounded by causeways and culverts, but has a high potential for restoration.

References Beadel 1994a, OSNZ 2006; Owen *et al.* 2006; current study.

MAKETU ESTUARY

Site Number	SVHZ-106
Grid Reference (NZMG)	2812970 6376931
Local Authority	Western Bay of Plenty District Council
Ecological District	Tauranga
Status	Protected (WBOPDC reserve) and unprotected parts
Site Area	215.3 ha
Altitudinal Range	0-6 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Intertidal flats.	Intertidal flat
Marine	Worm field.	Subtidal channel
Marine	Worm field.	Intertidal flat
Marine	Cockle bed.	Intertidal flat
Marine	Pipi bed.	Subtidal channel
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	Oioi rushland.	Intertidal flat
Estuarine	*Baumea juncea* sedgeland.	Intertidal flat
Estuarine	Saltmarsh ribbonwood shrubland. (Stephen Park, Environment BOP, pers. comm. 2006; Ray Bushell pers. comm. 2006; current study).	Intertidal flat

Indigenous Flora

The site is largely unvegetated intertidal flats. There is one sizeable example of saltmarsh remaining in Maketu Estuary (7.6 ha). An estimated 95% of indigenous saltmarsh at Maketu Estuary has been lost since the Kaituna River diversion (Bergin 1991).

Indigenous Fauna

Roosting fairy tern (Acutely Threatened, Nationally Critical), NZ dotterel, Caspian tern, reef heron, wrybill (Acutely Threatened, Nationally Vulnerable), banded dotterel (Chronically Threatened, Gradual Decline); breeding banded rail (At Risk, Sparse); range of migratory species all recorded since 2003 (OSNZ 2006). Important breeding/wintering site for NZ dotterel, non-breeding site for variable oystercatcher (Dowding and Moore 2006). The sand bank adjacent to Maketu Road Wader Roost is regarded as the key shorebird roost site in Maketu Estuary (Owen *et al*. 2006).

Condition/Pressures Threat of infilling (Kenny and Hayward 1996). The extent of Spartina in Maketu was surveyed in 1998 (Shaw *et al.* 1998) and Environment BOP has subsequently implemented a control programme. Spartina is still present in parts of the estuary.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	H
	3.3	H
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	H
Naturalness	3.8	L
Ecological Context	3.9	M
	3.10	M
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

Significance Justification Maketu Estuary is a large example of estuarine vegetation characteristic of the region. The estuary has undergone extensive modification caused by the diversion of the Kaituna River, including large reductions in the extent of saltmarsh habitats. The site is regularly used by acutely threatened, chronically threatened, and at risk bird species, as well as international and NZ wader species.

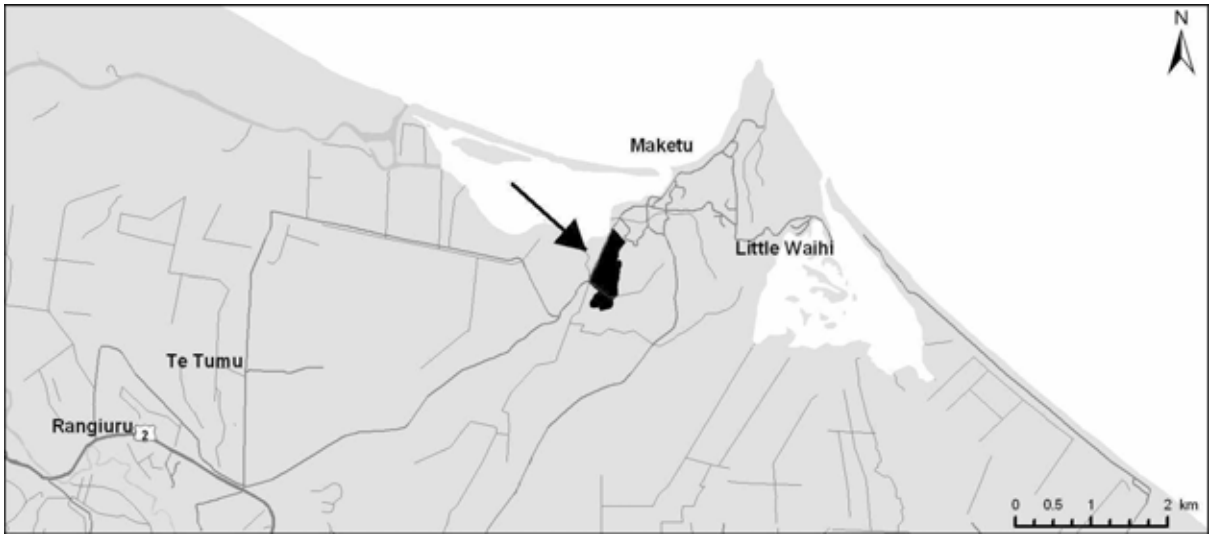
Recommended for RAMSAR status in Owen *et al*. (2006).

Notes A well-defined example of a meso-tidal lagoon, with hot springs located on southern side of estuary. Regionally important, of scientific value, moderately vulnerable to human modification (Kenny and Hayward 1996).

References Bergin 1991; Shaw *et al*. 1998; Kenny and Hayward 1996; OSNZ 2006; Dowding and Moore 2006; Owen *et al.* 2006; current study.

ARAWA WETLAND

Site Number SVHZ-107
Grid Reference (NZMG) 2813769 6375925
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Unprotected
Site Area 19.5 ha
Altitudinal Range 1-11 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Palustrine	Cabbage tree/grey willow forest.	Wetland
Palustrine	Grey willow forest.	Wetland
Palustrine	Grey willow-*Coprosma propinqua* subsp. *propinqua*-pampas-harakeke treeland.	Wetland
Palustrine	Blackberry-*Baumea articulata* shrubland	Wetland
Palustrine	Manuka-harakeke shrubland.	Wetland
Palustrine	*Baumea juncea*-harakeke-*Coprosma propinqua* subsp. *propinqua* sedgeland.	Wetland
Palustrine	*Baumea articulata*-raupo reedland.	Wetland
Palustrine	Raupo reedland.	Wetland
Estuarine	Bachelor's button herbfield⇔Oioi-*Baumea juncea*-saltmarsh ribbonwood-sea rush-pampas grass-tussock-sedgeland.	Intertidal flat
Estuarine	Bachelor's button-arrow grass-*Mimulus repens-Spergularia media-Isolepis cernua-Plantago coronopus* herbfield.	Intertidal flat
Palustrine	Duckweed herbfield.	Wetland
Palustrine	Pampas-grey willow-manuka treeland.	Wetland
Palustrine	*Baumea articulata*/Japanese honeysuckle-blackberry-brome sedge-shrubland⇔*Baumea articulata*/broome grass-sedgeland.	Wetland
Palustrine	Grey willow-cabbage tree/blackberry-Japanese honeysuckle shrubland.	Wetland
Palustrine	Crack willow-grey willow-cabbage tree-(robinia)/Japanese honeysuckle-blackberry shrubland.	Wetland
Terrestrial		Alluvial flat

Hydrosystem	Vegetation/Habitat Type	Landform
Palustrine	Exotic grasses and herbs.	Wetland
Terrestrial	*Carex virgata*-*Cyperus ustulatus*-raupo-*Baumea* (*rubiginosa*?)/exotic grasses and herbs grass-herbfield.	Wetland margin
Terrestrial	Cabbage tree-robinia-pine/gorse-blackberry-Japanese honeysuckle scrub and rank pasture.	Drain margin
	(Brush wattle)/pampas grass-gorse tussockland. (Beadel 1989b, Beadel 1994a and current study)	

Indigenous Flora *Cyclosorus interruptus* (Chronically Threatened, Gradual Decline), marsh fern (*Thelypteris confluens*) (Chronically Threatened, Gradual Decline) and *Mimulus repens* (At Risk, Sparse) (Beadel 1994a).

Indigenous Fauna No specific fauna information.

Condition/Pressures Encroachment of pampas which forms dense fringe along road margin and spread of grey willow. Altered hydrology/drainage.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	H
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	M
Viability and Sustainability	3.11	M
	3.12	L
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

Significance Justification This moderately-sized site contains one of the few remaining examples of the wetland vegetation of the Kawa swamp which once covered hundreds of acres west of Maketu (Kirk 1873). Two chronically threatened and one at risk plant species occur in this site.

Notes Identified as a Category 1 natural heritage site in the Tauranga Ecological District (Beadel and Shaw 2000b).

It appears that pampas and grey willow have encroached significantly since the 1989 field inspection and a more detailed site inspection is recommended.

References Kirk 1873; Beadel 1989b; Beadel 1994a; Beadel and Shaw 2000b; current study.

MAKETU ROAD WADER ROOST

Site Number	SVHZ-108
Grid Reference (NZMG)	2813912 6376743
Local Authority	Western Bay of Plenty District Council
Ecological District	Tauranga
Status	Protected (WBOPDC reserve)
Site Area	2.3 ha
Altitudinal Range	0 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Exotic grassland (recreation reserve). (Current study)	Alluvial flat

Indigenous Flora Ngaio, pohutukawa, taupata (all planted) along fringe between grassland and estuary. No significant species recorded (current study).

Indigenous Fauna This site is high tide roost for wading bird species (John Heaphy pers. comm. 2006, OSNZ 2006).

Condition/Pressures Possible disturbance to roosting birds resulting from sporting/community activities.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	L
Rarity or Distinctive Features	3.2	L
	3.3	M
	3.4	L
	3.5	L
	3.6	N/A
Diversity and Pattern	3.7	L
Naturalness	3.8	L
Ecological Context	3.9	L
	3.10	L
Viability and Sustainability	3.11	L
	3.12	L
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

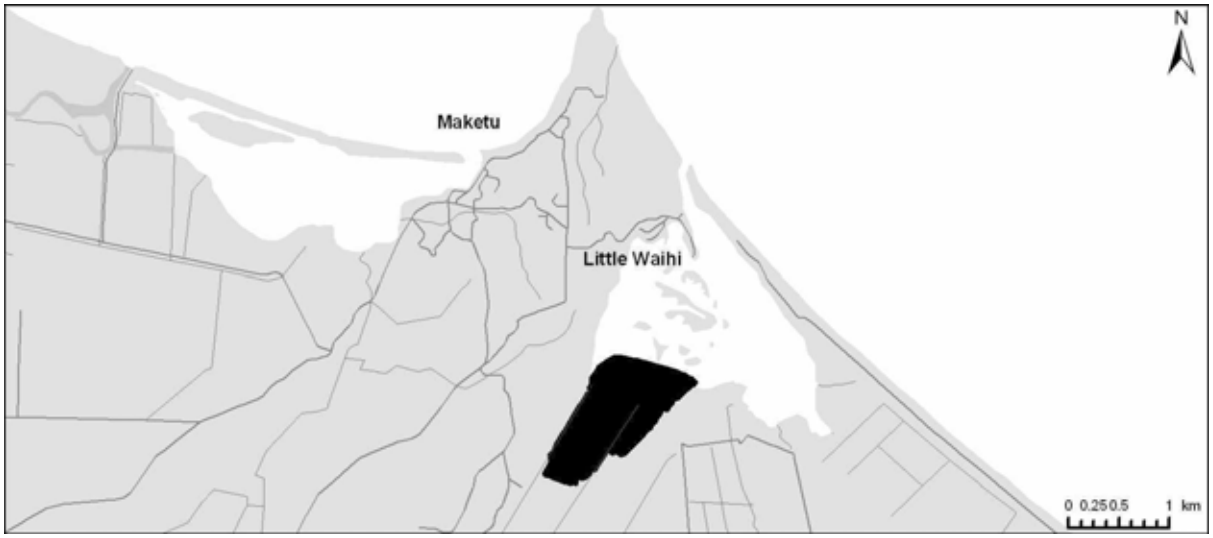
Significance Justification The site is regionally significant because, despite being a completely modified habitat (mown grass), it is a high tide roosting site for wading birds.

Notes Should be maintained as reserve and not built upon.

References OSNZ 2006; current study.

WAEWAETUTUKI (PART)[1]

Site Number	SVHZ-109
Grid Reference (NZMG)	2815944 6374702
Local Authority	Western Bay of Plenty District Council
Ecological District	Tauranga
Status	Unprotected
Site Area	86.7 ha
Altitudinal Range	0-18 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Palustrine	Cabbage tree/grey willow-(*Coprosma propinqua* subsp. *propinqua*)/(*Lemna minor*)-sedges-*Blechnum minus* forest.	Wetland
Palustrine	(Cabbage tree)/pohuehue/harakeke-*Coprosma propinqua* subsp. *propinqua*-*Baumea articulata*-*B.* sp. (*B. rubiginosa?*)-raupo shrubland.	Wetland
Palustrine	Mosaic of sedges, rushes, grasses and herbs.	Wetland
Estuarine	Sea rush tussockland.	Wetland
Estuarine	Oioi rushland.	Wetland
Estuarine	*Baumea juncea* sedgeland.	Wetland
Estuarine	*Schoenoplectus pungens* sedgeland.	Wetland
Estuarine	Saltmarsh ribbonwood-harakeke shrubland. (Beadel and Wallace 1989; Beadel 1994a)	Wetland

Indigenous Flora No significant species noted.

Indigenous Fauna No specific fauna information.

Condition/Pressures Parts of Waewaetutuki are grazed and the site is damaged by cattle trampling and browsing (Nancy Willems pers. comm. 2006).

[1] Part of Waewaetutuki occurs outside the 'coastal environment' study area (i.e. further than 1 km inland of MHWS).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	L
	3.3	M
	3.4	L
	3.5	L
	3.6	H
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	M
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

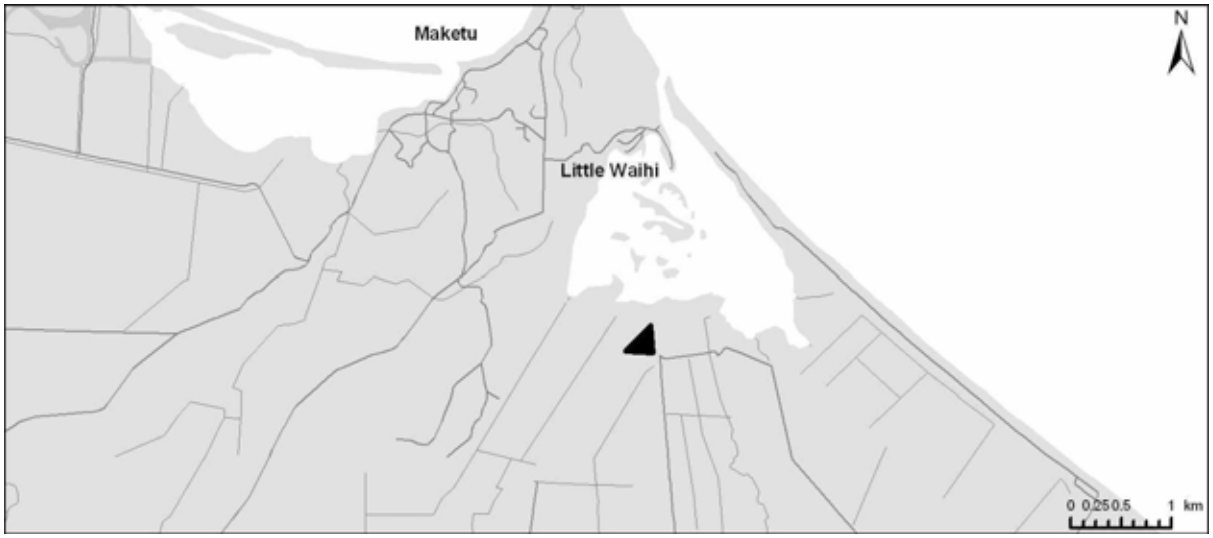
Significance Justification This site is part of one of the last substantial examples of freshwater wetland vegetation on the Pongakawa Plains. Prior to drainage the plains were largely wetland. This site is large and compact in shape and includes a sequence from saltwater to freshwater wetland. The estuarine vegetation is representative of the remaining saltmarsh in Waihi Estuary (Beadel 1994a). However grey willow forms the canopy over much of the freshwater wetland area.

Notes Identified as a Category 1 natural heritage area in the Tauranga Ecological District (Beadel and Shaw 2000b).

References Beadel and Wallace 1989; Beadel 1989e; Beadel 1994a; Beadel and Shaw 2000b.

WHARERE ROAD WETLAND

Site Number SVHZ-110
Grid Reference (NZMG) 2816450 6374538
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Protected (DOC, Unnamed Wildlife Management Reserve)
Site Area 3.6 ha
Altitudinal Range 3-7 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Palustrine	Rushland.	Wetland
Palustrine	Open water.	Wetland/pond
Palustrine	Raupo reedland.	Wetland
Palustrine	Pampas tussockland. (Current study)	Wetland

Indigenous Flora No information.

Indigenous Fauna Australasian bittern, grey duck (Acutely Threatened, Nationally Endangered) and pied stilt recorded (current study). North Island fernbird and banded rail (At Risk, Sparse) in adjacent wildlife management reserve (Rasch 1989a) and likely to be present here.

Condition/Pressures The stopbanks and margins are infested with pampas.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	L
Naturalness	3.8	L
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

Significance Justification This is a small site containing freshwater vegetation and habitat. Two actutely threatened bird species use this area. It has been identified as a spawning area for inanga, and provides habitat for latrge numbers of waterbirds. Stop-banking has altered water flows, and created habitat which pampas has invaded.

Notes A large number of ducks was observed (mallard and grey duck). There appears to be more open water here than at comparable nearby sites. It is owned by Fish and Game, who would like to control raupo in order to maintain open water. The site is bounded by canals on all three sides but in 1988 it was identified as a spawning site of inanga (*Galaxias maculatus*, not threatened), a culturally and commercially important species (Mitchell 1990). Spawning occurred mainly among tidally-inundated tall fescue, Mercer grass and lotus (*Lotus peduculatus*) (ibid).

References Mitchell 1990; current study.

WAIHI ESTUARY SOUTHERN MARGIN

Site Number	SVHZ-111
Grid Reference (NZMG)	2817331 6374683
Local Authority	Western Bay of Plenty District Council
Ecological District	Tauranga
Status	Protected (DOC Unnamed Wildlife Management Reserves) and unprotected parts
Site Area	31.9 ha
Altitudinal Range	0-3 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Saltmarsh ribbonwood/sea couch-sea rush-*Baumea juncea*-oioi shrubland.	Intertidal flat
Estuarine	*Olearia solandri*/saltmarsh ribbonwood shrubland.	Intertidal flat
Estuarine	Saltmarsh ribbonwood shrubland.	Intertidal flat
Estuarine	Oioi-sea rush tussockland.	Intertidal flat
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	Oioi rushland.	Intertidal flat
Estuarine	*Schoenoplectus pungens* sedgeland.	Intertidal flat
Palustrine	Raupo reedland.	Wetland
Palustrine	Raupo-*Bolboschoenus* sp. (*B. fluviatilis?*) reedland.	Wetland
Estuarine	Sea rush/bachelor's button-*Mimulus repens* herbfield. (Beadel 1994a)	Intertidal flat

Indigenous Flora *Mimulus repens* (At Risk, Sparse) and *Bolboschoenus caldwellii* (not threatened but regionally uncommon (Beadel 1991b)) were recorded here in 1992 (Beadel 1994a).

Indigenous Fauna NZ dotterel, wrybill, Caspian tern (Acutely Threatened, Nationally Vulnerable); banded dotterel (Chronically Threatened, Gradual Decline); various migrant species recorded since 2003 (OSNZ 2006). Wintering site for variable oystercatcher and pied stilt (Dowding and Moore 2006).

Condition/Pressures Pampas, grey willow, drainage, pressures of surrounding land uses. Sea couch is also a problem because it reduces the area of habitat for estuarine birds

(Beadel 1991b; Owen 1993, 1994a).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	M
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

Significance Justification A relatively large and intact, representative example of the remaining saltmarsh vegetation in the Waihi Estuary (Beadel 1994a). Saltmarsh around Waihi Estuary has been greatly reduced in extent. Contains at risk and regionally uncommon plant species. Three acutely threatened and one chronically threatened shorebird species, and various migratory wader species, have recently been recorded from here, and for its size it is regionally important bird habitat.

Notes Identified as a Category 1 natural heritage area in the Tauranga Ecological District (Beadel and Shaw 2000b).

References Beadel 1991b; Beadel 1994a; Beadel and Shaw 2000b; Dowding and Moore 2006; OSNZ 2006.

WAIHI ESTUARY

Site Number SVHZ-112
Grid Reference (NZMG) 2816924 6375649
Local Authority Western Bay of Plenty District Council
Ecological District Tauranga
Status Protected (WBOPDC reserve) and unprotected parts
Site Area 288.5 ha
Altitudinal Range 0-37 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Brush wattle scrub.	Sand dune
Terrestrial	Manuka scrub.	Sand dune
Estuarine	(Saltmarsh ribbonwood)/sea rush-(oioi)-(*Baumea juncea*) tussockland.	Intertidal flat
Estuarine	(Saltmarsh ribbonwood)-(*Olearia solandri*)-(taupata)-(harakeke)-(karo)/tall fescue-*Ficinia nodosa*-sea couch grassland.	Intertidal flat
Estuarine	Open water.	Estuary
Marine	Worm field.	Subtidal channel
Marine	Worm field.	Intertidal flat
Marine	Cockle bed.	Intertidal flat
Marine	Pipi bed.	Subtidal channel
	(Beadel and Wallace 1989; Stephen Park, Environment BOP, pers. comm. 2006; Ray Bushell pers. comm. 2006; current study).	

Indigenous Flora No significant species recorded.

Indigenous Fauna NZ dotterel, wrybill, Caspian tern (Acutely Threatened, Nationally Vulnerable); banded dotterel (Chronically Threatened, Gradual Decline); various migrant species recorded since 2003 (OSNZ 2006). Wintering site for variable oystercatcher and pied stilt (Dowding and Moore 2006). Several sandbanks and low-lying islands in the estuary are shorebird roosts (Owen *et al.* 2006).

Condition/Pressures Pampas, brush wattle.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	L
	3.5	M
	3.6	M
Diversity and Pattern	3.7	H
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	H
Viability and Sustainability	3.11	H
	3.12	M
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

Significance Justification A relatively large estuary system containing regionally representative vegetation and habitat types. Pest plant pressure is impacting on parts of the site. Three acutely threatened and one chronically threatened shorebird species, and various migratory wader species, utilise the estuary regularly, making it regionally important bird habitat.

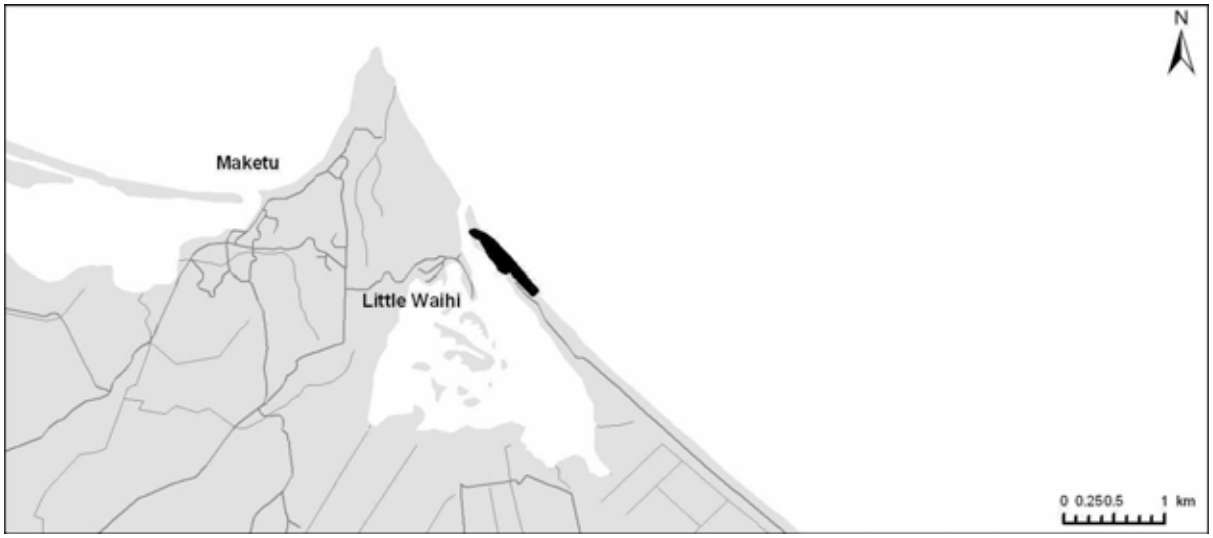
Recommended for RAMSAR status in Owen *et al*. 2006.

Notes Identified as a Category 1 natural heritage area in the Tauranga Ecological District (Beadel and Shaw 2000b).

References Beadel and Wallace 1989; Beadel and Shaw 2000b; Dowding and Moore 2006; OSNZ 2006; Owen *et al.* 2006; current study.

PUKEHINA SPIT

Site Number	SVHZ-113
Grid Reference (NZMG)	2817036 6376633
Local Authority	Western Bay of Plenty District Council
Ecological District	Tauranga
Status	Protected (WBOPDC reserve) and unprotected parts
Site Area	6.5 ha
Altitudinal Range	0 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Spinifex-(pingao) grassland.	Sand dunes
Terrestrial	Pohuehue-*Ficinia nodosa* vineland.	Sand dunes
Terrestrial/marine	Sandfield.	Beach sands
	(Wildland Consultants 2005d)	

Indigenous Flora

Pingao (Chronically Threatened, Gradual Decline) is present on the front face of the fore dune, particularly in front of the surf club where it may have been planted. Hinarepe (sand tussock - Chronically Threatened, Gradual Decline) is present on the tip (eastern end) of the spit.

Indigenous Fauna

A key spring high tide roost for shorebirds (Owen *et al.* 2006), especially wintering variable oystercatcher and pied stilt (Dowding and Moore 2006). This is a nesting site for NZ dotterel (Acutely Threatened, Nationally Vulnerable) and variable oystercatcher (John Heaphy pers. comm. 2006).

NZ dotterel, wrybill, Caspian tern (Acutely Threatened, Nationally Vulnerable); banded dotterel (Chronically Threatened, Gradual Decline); various migrant species recorded since 2003 (OSNZ 2006).

Condition/Pressures

The site to adjacent to a residential area and is used for recreation. Therefore, humans and domestic cats and dogs, may disturb nesting dotterel. There are occasional, small specimens of Norfolk pine (*Araucaria heterophylla*), Sydney golden wattle (*Acacia longifolia*), and maritime pine.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	L
	3.5	L
	3.6	H
Diversity and Pattern	3.7	L
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	M
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

Significance Justification A relatively small site containing good examples of sand dune vegetation. Two chronically threatened dune plant species are present. Three acutely threatened, one chronically threatened shorebird species, and various migratory wader species utilise this area regularly, making it regionally important bird habitat. Pressures on habitat and indigenous fauna come mainly from activity associated with adjacent residential areas.

References Wildland Consultants 2005d; Dowding and Moore 2006; OSNZ 2006; Owen *et al.* 2006.

PUKEHINA

Site Number	SVHZ-114
Grid Reference (NZMG)	2822269 6372036
Local Authority	Western Bay of Plenty District Council
Ecological District	Tauranga
Status	Protected (WBOPDC reserve) and unprotected parts
Site Area	13.3 ha
Altitudinal Range	1-20 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Taupata/pohuehue-*Ficinia nodosa* shrubland.	Sand dune
Terrestrial	Pohuehue vineland.	Sand dune
Terrestrial	Pohuehue vineland.	Sand dune
Terrestrial	*Ficinia nodosa*-pohuehue-cocksfoot rushland.	Sand dune
Terrestrial	Lupin/exotic grasses grassland.	Sand dune
Terrestrial	Spinifex-pohuehue grassland.	Sand dune
Terrestrial	Spinifex sandfield.	Sand dune
	(Current study and Beadel 1994a)	

Indigenous Flora Pingao (*Desmoschoenus spiralis*, Chronically Threatened, Gradual Decline) has been planted here and hinarepe (sand tussock - *Austrofestuca littoralis*, Chronically Threatened, Gradual Decline) also possibly planted.

Indigenous Fauna White-fronted tern (Chronically Threatened, Gradual Decline) recorded since 2003 (OSNZ 2006).

Condition/Pressures Generally good condition but establishment of plants from garden waste at road end near Pukehina Redoubt. Lupins, marram, and South African iceplant (*Carpobrotus edulis*) are scattered throughout the site.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	L
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	L
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

Significance Justification This site is relatively narrow and comprises a small example of indigenous vegetation characteristic of the Tauranga Ecological District coastline.

The cliffs at the northern end of this site which are covered with taupata/pohuehue-*Ficinia nodosa* shrubland are considered to be a representative example of one of the landforms and its vegetation cover of the coastal zone of the Tauranga Ecological District (Beadel 1994a).

Notes The local coast care group planted pingao and spinifex (500) in 2005 (with help from an EEF grant).

References Beadel 1994a; OSNZ 2006; Wildland Consultants 2005x

6.3 Motiti Ecological District

Motiti Ecological District comprises several islands. The largest of these is Motiti (approx. 685 ha) which is plateau-like and low-lying, reaching only 57 m asl, with low coastal cliffs. Motiti would once have been covered in pohutukawa forest and mixed coastal forest (canopy dominants including pohutukawa, puriri, karaka, kohekohe, tawa and rewarewa). However, it has a long history of Māori occupation and has also been farmed for the past 100 years. The remaining indigenous vegetation is restricted to the cliffs around the island margin and is predominantly pohutukawa forest and treeland. These are minor remnants in gullies.

Karewa Island (approx. 3.6 ha) is rugged, rising steeply from the rocky coastline to 93 m asl, with the south and west falling away more gently to the coast. Motunau (Plate Island) is also rugged. Other islands in the district are Motuhaku Island (Schooner Rocks) which is a stack, and the several small islands around Motiti (i.e. Taumaihi, Motuputa, Motupatiki and Motukahakaha).

The vegetation on Karewa Island has been modified and today only a small area of karaka forest remains. However there is coastal scrub and shrubland. Taupata (*Coprosma repens*) and *Melicytus novae-zelandiae* are common on Karewa, Motunau and Motiti Islands, and the coastal rocks and faces on these islands have mats of New Zealand iceplant and glasswort.

Karewa Island is the present day southern limit of distribution for parapara (*Pisonia brunoniana*) (ranked At Risk, Sparse, de Lange *et al.* 2004). *Euphorbia glauca* (Chronically Threatened, Serious Decline) and *Lepidium oleraceum* (Acutely Threatened, Nationally Endangered) are also found in this ecological district.

The indigenous fauna of Motiti Ecological District has been reduced in diversity, principally through human modification of Motiti, the largest island, and the presence there of kiore, mice and feral cats. However, the pest-free status of several small islets helps to maintain populations of grey-faced petrel and flesh-footed shearwater, and a significant proportion of the Bay of Plenty's tuatara populations.

Table 10: Threatened and notable species in Motiti Ecological District.

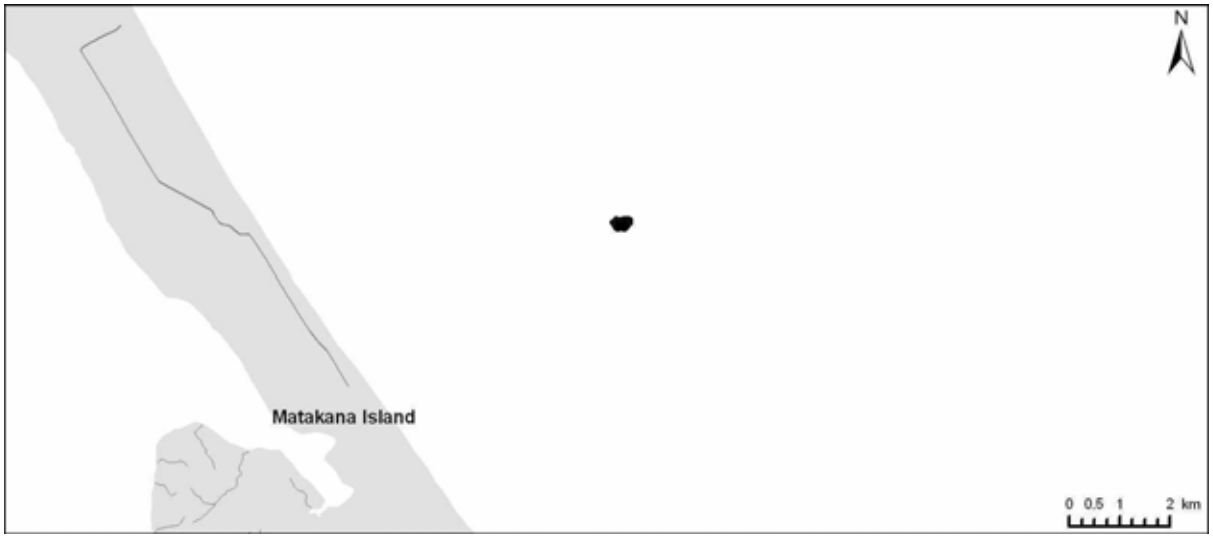
Scientific Name	Common Name	Threat Classification/ Significance
BIRDS		
Acutely Threatened		
Nestor meridionalis septentrionalis	North Island kaka	Nationally Endangered
Sterna caspia	Caspian tern	Nationally Vulnerable
Chronically Threatened		
Puffinus carneipes[1]	flesh-footed shearwater	Gradual Decline
Larus novaehollandiae scopulinus	red-billed gull	Gradual Decline
Hemiphaga novaeseelandiae[2]	kereru	Gradual Decline
Sterna striata striata	white-fronted tern	Gradual Decline
REPTILES		
At Risk		
Sphenodon p. punctatus	northern tuatara	Sparse
VASCULAR PLANTS		
Acutely Threatened		
Lepidium oleraceum	Cook's scurvy grass	Nationally Endangered
Chronically Threatened		
Euphorbia glauca	shore spurge	Gradual Decline
At Risk		
Pisonia brunoniana	parapara	Sparse

Notes
[1] Karewa Island is the only Bay of Plenty breeding colony of this species.
[2] Single bird seen.

References
John Heaphy, Department of Conservation; Beadel 1994a; Garrick 1996; McClellan 1996; Owen 2004.

KAREWA ISLAND

Site Number SVHZ-204
Grid Reference (NZMG) 2786969 6403205
Local Authority
Ecological District Motiti
Status Protected (DOC, Karewa Island Wildlife Sanctuary)
Site Area 4.8 ha
Altitudinal Range 0-39 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Karaka-parapara forest.	Volcanic hard coast
Terrestrial	Taupata-*Melicytus novae-zelandiae* forest.	Volcanic hard coast
Terrestrial	Pohuehue-akeake shrub-vineland.	Volcanic hard coast
Terrestrial	NZ iceplant-glasswort herbfield. (Beadel 1994a)	Volcanic hard coast

Indigenous Flora

Cook's scurvy grass (*Lepidium oleraceum* – Acutely Threatened, Nationally Endangered) occurs on the island, but is not thriving (Heaphy 1999). Parapara (*Pisonia brunoniana* – At Risk, Sparse) reaches its present-day southern limit of distribution on the island (Beadel 1994a). Some planting of parapara and tawapou (*Pouteria costata*) has occurred in the past (Garrick 1996).

Indigenous Fauna

Karewa is the only Bay of Plenty island with a breeding colony of flesh-footed shearwater (Chronically Threatened, Gradual Decline), and was one of the top five breeding sites nationally in 1994/1995 (McClellan 1996). It continues to be a very important breeding site for this species (Andy Garrick pers. comm. 2006).

Sign of tuatara (At Risk, Sparse) was observed in 1996 (Garrick 1996). This is one of the four remaining natural populations of tuatara on the Bay of Plenty islands. Common gecko is present (Heaphy 1999). In addition, Pacific gecko (Chronically Threatened, Gradual Decline), moko skink (At Risk, Sparse) and copper skink have been observed in the last ten years (John Heaphy pers. comm. 2006).

Condition/Pressures

No introduced mammals occur on the island (Beadel 1994a). Permanent bait stations were installed by DOC in 1999. A large boxthorn infestation was

discovered in 1999, as well as two pampas plants, possibly dispersed from Matakana Island (Heaphy 1999).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	H
	3.4	H
	3.5	L
	3.6	N/A
Diversity and Pattern	3.7	M
Naturalness	3.8	H
Ecological Context	3.9	H
	3.10	H
Viability and Sustainability	3.11	H
	3.12	H
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance National

Significance Justification Karewa Island contains a good quality, representative example of the vegetation of Motiti Ecological District (Beadel 1994a). The island is free of mammalian pests, and the range and density of pest plants present is very low. One acutely threatened plant species is present (*Lepidium oleraceum*). It provides critical breeding habitat for a number of chronically threatened and at risk fauna.

Notes The vegetation of Karewa Island was previously ranked as regionally significant (Beadel 1994a).

References Sladden 1924; Beadel 1994a; McClellan 1996; Garrick 1996; Heaphy 2003b.

TAUMAIHI ISLAND

Site Number SVHZ-206
Grid Reference (NZMG) 2810764 6388636
Local Authority
Ecological District Motiti
Status Unprotected
Site Area 2.5 ha
Altitudinal Range 0-14 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa forest.	Cliff, hillslope
Terrestrial	Pohutukawa/whararikí flaxland.	Cliff, hillslope
Terrestrial	Bracken fernland.	Hillslope
Terrestrial	*Apium prostratum* var. *filiforme*-glasswort-NZ iceplant herbfield.	Cliff, hillslope
Terrestrial	*Calystegia soldanella* boulderfield.	Boulder spit/beach
Terrestrial	Glasswort-*Apium prostratum*-NZ iceplant herbfield.	Cliff, hillslope
Terrestrial	(Spinifex)-oioi sandfield. (Beadel 1994a)	Dune and beach sands

Indigenous Flora

A small population of *Euphorbia glauca* (Chronically Threatened, Serious Decline) grows at the southern end of the island (Garrick 1996).

Indigenous Fauna

Possible grey-faced petrel burrows were noted in 1996, as well as two unidentified skinks (Garrick 1996). Grey-faced petrels used to be more common here than they are currently, and have been a focus of titi harvest by local Maori in the past. There are large populations of black-backed gulls and starlings on the island (Vernon Wills pers. comm. 2006).

Condition/Pressures

Taumaihi is accessible from Motiti Island across a boulder spit at low tide, and there are kiore (Beadel 1994a) and occasional cattle beasts (Garrick 1996) present on the island. Boxthorn, inkweed and convolvulus were noted in 1996 (Garrick 1996). Kiore are thought to be the only introduced mammal present on the island (Beadel 1994a).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	H
	3.4	M
	3.5	L
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	H
Viability and Sustainability	3.11	M
	3.12	H
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

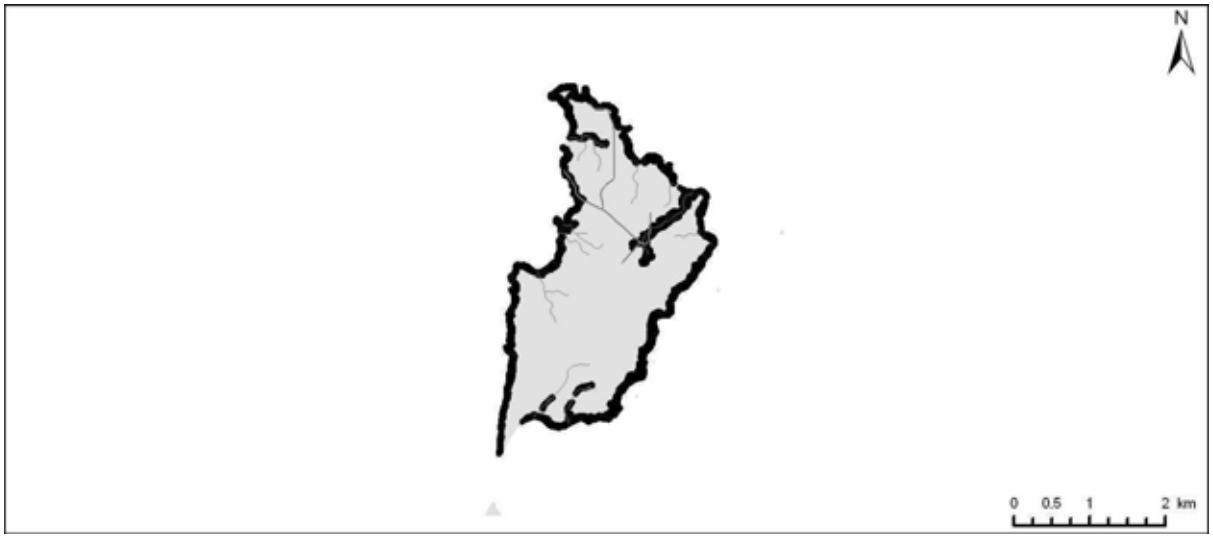
Relative Significance Regional

Significance Justification Taumaihi Island is regionally significant as it comprises representative examples of the vegetation characteristic of the Motiti Ecological District. The island is habitat for a chronically threatened plant species, however stock, several weed species, and presence of kiore are significant modifying pressures for a small island like Taumaihi.

References Shaw and Clarkson 1991; Beadel 1994a; Garrick 1996, Vernon Wills (landowner).

MOTITI ISLAND

Site Number SVHZ-207
Grid Reference (NZMG) 2812255 6391867
Local Authority
Ecological District Motiti
Status Unprotected
Site Area 69.2 ha
Altitudinal Range 0-40 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Marine/Terrestrial	Sandfield.	Beach sands
Terrestrial	Pohutukawa/karo-taupata-houpara-(hangehange) forest.	Cliff, steep hillslope
Terrestrial	Pohutukawa treeland.	Cliff, steep hillslope
Terrestrial	Coastal cliff vegetation (rengarenga, harakeke, *Astelia banksii*, *Melicytus novae-zelandiae*, exotic herbs and grasses).	Cliff
Palustrine	Grey willow/raupo-*Baumea arthrophylla-Schoenoplectus tabernaemontani*-(harakeke)/swamp millet-Yorkshire fog forest.	Wetland
Palustrine	Open water with *Myriophyllum propinquum, Juncus articulatus*, swamp millet, Mercer grass and water purslane.	Wetland
PalustrinePalustrine	Raupo-*Schoenoplectus tabernaemontani* reedland. (Grey willow)/raupo-(*Schoenoplectus tabernaemontani*)/swamp millet-(arum lily)	WetlandWetland
Palustrine	reedland.	Wetland
Palustrine	Open water with *Polygonum hydropiper* and *Callitriche stagnalis.*	Wetland Wetland
Palustrine	Brush wattle-(mamaku)-(ponga)-(cabbage tree)-(*Muehlenbeckia australis*) forest.	Wetland
Terrestrial	Grey willow-*Muehlenbeckia australis* forest.	Wetland margins
Terrestrial	(Pohutukawa)/karo-brush wattle-(*Muehlenbeckia australis*)-(mamaku)-(taupata) forest.	Wetland margins
	Muehlenbeckia australis vineland. (Current study)	

Indigenous Flora

A yellow-flowered pohutukawa variety occurs on Motiti Island (Matheson 1979). This has been propagated on the mainland and is being reintroduced to other areas of the island (Vernon Wills pers. comm. 2006).

Indigenous Fauna

North Island kaka (Acutely Threatened, Nationally Endangered), red-billed gull (Chronically Threatened, Gradual Decline), white-fronted tern (Chronically Threatened, Gradual Decline), common diving petrel, grey-faced petrel, Australasian gannet, pied shag, Australasian harrier, pukeko, spur-winged plover, black-backed gull, welcome swallow, grey warbler, North Island fantail, tui, silvereye and a skua species (*Stercorarius* sp.) were all recently confirmed as present on and around Motiti Island by the Department of Conservation (Owen 2004). In addition, Caspian tern (Acutely Threatened, Nationally Vulnerable), variable oystercatcher, bellbird, kingfisher and a single kereru (Chronically Threatened, Gradual Decline) are regularly seen by residents (Vernon Wills pers. comm. 2006).

Copper skink and shore skink may be present (Owen 2004). There are also probably common geckos on the island (John Heaphy pers. comm. 2006).

Condition/Pressures

The island has a long history of Maori and European occupation, with all flat, arable land having been cleared for horticulture and agriculture (Matheson 1979; Spring-Rice 1991), therefore indigenous vegetation is limited to sea cliffs and scattered freshwater wetlands leading down to the coast.

Pohutukawa forest around the island's margins is still in very good condition, despite small nuclei of weeds, including boxthorn, wild ginger, brush wattle, pampas and others. There is prolific regeneration of karo, taupata and houpara under most of this forest, which is in contrast to similar mainland sites, and could be attributed to the lack of possums, goats, rabbits or other wild browsing mammals on the island. Domestic cattle sometimes gain access and destroy parts of the understorey. Pines have been planted in small parts of the pohutukawa forest, and also in new shelterbelts. A very large avocado plantation has recently been established in the south (15,500 trees).

The freshwater wetlands are highly modified, ranging from dense brush wattle and grey willow forest (sometimes with relatively good understorey comprising *Baumea arthrophylla,* swamp millet, raupo, *Schoenoplectus tabernaemontani*) to raupo reedland or open water with many aquatic weeds and occasional indigenous sedges, including *Carex secta*, *C. virgata*, *Bolboschoenus fluviatilis* and *Eleocharis acuta*. Despite modification through digging, contouring and drainage, there are still natural wetlands on the island, which have high restoration potential, and some which are currently being restored by landowners (e.g. through willow removal, planting of margins etc.).

Kiore is probably the only rat species present on the island, though this has not been resolved. Grey-faced petrel nesting has declined all around the island, probably as a result of increased rat numbers. Feral cats and mice are definitely present (Owen 2004).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	H
	3.4	M
	3.5	H
	3.6	H
Diversity and Pattern	3.7	H
Naturalness	3.8	M
Ecological Context	3.9	L
	3.10	M
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

Significance Justification This site contains the largest remaining examples of indigenous vegetation in the Motiti Ecological District (Beadel 1994a). The wetlands are degraded but have high restoration potential. A limited range of pest mammals are present, and the island is habitat for several acutely and chronically threatened bird species.

Notes Pieces of obsidian (volcanic glass) are present in the soil profile on the island.

References Matheson 1979; Spring-Rice 1991; Beadel 1994a; Owen 2004; field survey 2006.

MOTITI ISLETS

Site Number SVHZ-208
Grid Reference (NZMG) 2813345 6391075
Local Authority
Ecological District Motiti
Status Unprotected
Site Area 2.3 ha
Altitudinal Range 0-5 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
	Motukahakaha Island	
Terrestrial	NZ iceplant-glasswort herbfield.	Rocky islet
Terrestrial	Taupata/*Poa anceps* subsp. *anceps*-rengarenga herbfield.	Rocky islet
	Motupatiki Island	
Terrestrial	Pohutukawa-karo treeland.	Rocky islet
Terrestrial	Glasswort-NZ iceplant rockland.	Rocky islet
	Turitea Island	
Terrestrial	(Pohutukawa)-(taupata) rockland. (Beadel 1994a)	Rocky islet

Indigenous Flora No significant species recorded.

Indigenous Fauna Diving petrel or storm petrel burrows were noted on Motupatiki in 1996 (Garrick 1996). Moko skink (At Risk, Sparse) is present on Motukahakaha (Owen 2004).

Condition/Pressures No introduced mammals have been recorded on these islets (Beadel 1994a). There is limited growth of boxthorn (*Lycium ferocissimum*) on Motukahakaha (Garrick 1996).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	M
	3.3	H
	3.4	M
	3.5	L
	3.6	N/A
Diversity and Pattern	3.7	M
Naturalness	3.8	H
Ecological Context	3.9	M
	3.10	H
Viability and Sustainability	3.11	L
	3.12	H
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

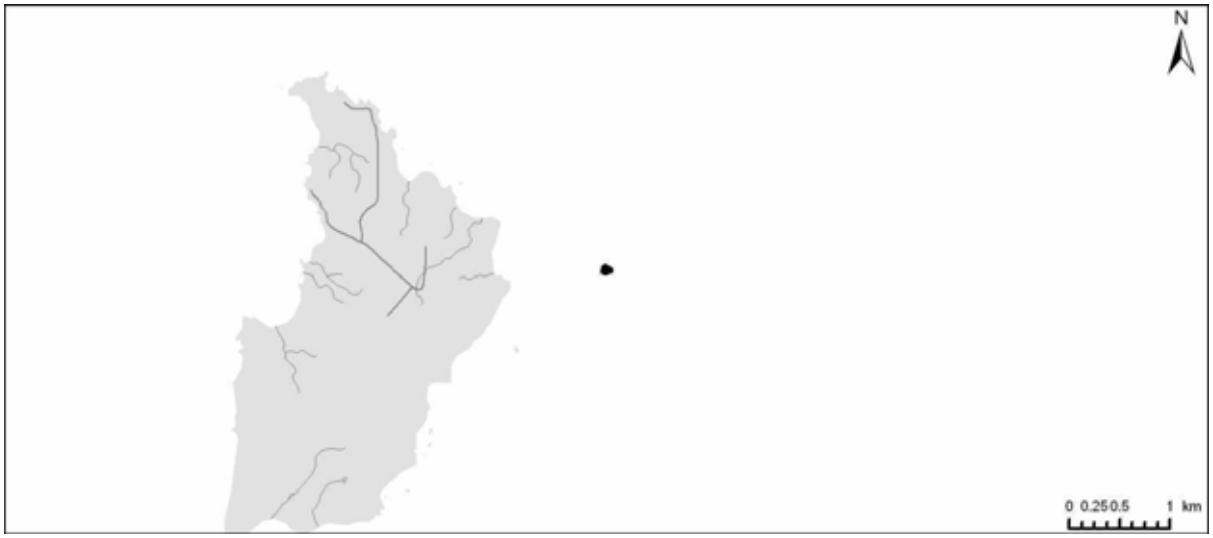
Significance Justification These small islets together contain good quality, small examples of coastal vegetation characteristic of the Motiti Ecological District (Beadel 1994a). They provide habitat for at risk fauna species, are thought to be free of pest mammals, and weed impacts appear to be low.

Notes The vegetation of the Motiti Islets was previously ranked as being of District significance in Beadel (1994a).

References Beadel 1994a; Garrick 1996; Owen 2004.

MOTUPUTA ISLAND

Site Number SVHZ-209
Grid Reference (NZMG) 2814611 6392322
Local Authority
Ecological District Motiti
Status Unprotected
Site Area 0.2 ha
Altitudinal Range 0-9 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Taupata-*Melicytus novae-zelandiae* forest.	Rocky islet
Terrestrial	NZ iceplant-glasswort herbfield. (Beadel 1994a)	Rocky islet

Indigenous Flora A small population of Cook's scurvy grass (Acutely Threatened, Nationally Endangered) was present in the early 1990s (Beadel 1994a). Its continued presence has not been confirmed.

Indigenous Fauna Common gecko (but no other lizard species) recorded recently (Owen 2004).

Condition/Pressures No introduced mammals are known from the island (Beadel 1994a).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	H
	3.3	H
	3.4	M
	3.5	L
	3.6	N/A
Diversity and Pattern	3.7	L
Naturalness	3.8	H
Ecological Context	3.9	M
	3.10	L
Viability and Sustainability	3.11	H
	3.12	Hz
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

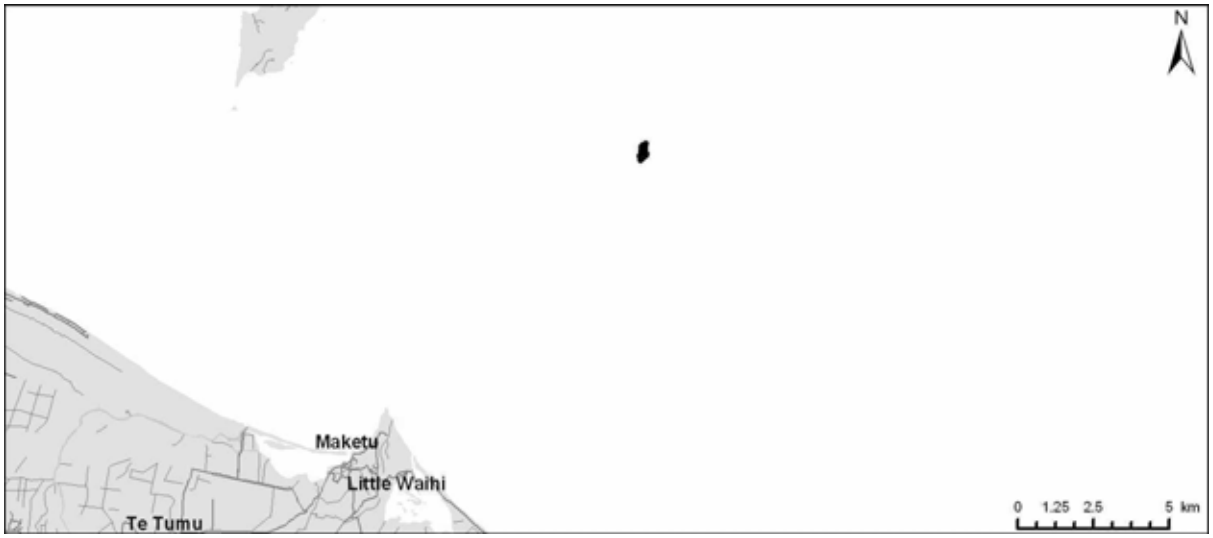
Significance Justification As a pest-free offshore islet with near natural vegetation cover, and possibly supporting an acutely threatened plant species, this island is of regional significance.

Notes The vegetation of Motuputa Island was previously ranked as being of District significance in Beadel (1994a).

References Beadel 1994a; Owen 2004.

MOTUNAU (PLATE ISLAND)

Site Number SVHZ-210
Grid Reference (NZMG) 2824259 6387159
Local Authority
Ecological District Motiti
Status Protected (DOC, Plate Island Wildlife Sanctuary)
Site Area 3.9 ha
Altitudinal Range 0-34 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Karo forest.	Rocky island
Terrestrial	Pohutukawa forest.	Rocky island
Terrestrial	Taupata forest.	Rocky island
Terrestrial	Karo-taupata forest.	Rocky island
Terrestrial	Pohutukawa/taupata-karo scrub	Rocky island
Terrestrial	Taupata scrub.	Rocky island
Terrestrial	Taupata-(karo) scrub.	Rocky island
Terrestrial	Karo-taupata shrubland.	Rocky island
Terrestrial	*Poa anceps* subsp. *anceps*-NZ iceplant-oioi herb-grassland.	Rocky island
Terrestrial	NZ iceplant herbfield.	Rocky island
Terrestrial	NZ iceplant-glasswort herbfield.	Rocky island
Terrestrial	NZ iceplant-glasswort-taupata-*Poa anceps* subsp. *anceps* herbfield.	Rocky island
Terrestrial	(Taupata)-(karo)/NZ iceplant-glasswort herbfield. (Beadel 1994a)	Rocky island

Indigenous Flora No significant species recorded.

Indigenous Fauna Pacific gecko (Chronically Threatened, Gradual Decline) and shore skink are present on North Motunau. There is recent evidence of common gecko and tuatara (At Risk, Sparse) from both islets (Garrick 1996; Heaphy 2002). These are two of the four remaining natural populations of tuatara on the Bay of Plenty islands (Heaphy 2003b).

Reef heron (Acutely Threatened, Nationally Endangered), grey-faced petrel,

silvereye, Australasian harrier and pied shag were recorded in 1996 (Garrick 1996). Large numbers of red-billed gulls (Chronically Threatened, Gradual Decline) and white-fronted terns (Chronically Threatened, Gradual Decline) were nesting on North Motunau in 2002 (Heaphy 2002).

NZ fur seals breed on South Motunau (Heaphy 2002).

Condition/Pressures No introduced browsing mammals occur on these islands (Beadel 1994a), and there was no sign of rodents in 1996 (Garrick 1996). Bait stations are regularly baited and monitored by DOC (Heaphy 2002). Introduction of pests by human visitors is a continual threat.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	H
	3.4	M
	3.5	M
	3.6	L
Diversity and Pattern	3.7	M
Naturalness	3.8	H
Ecological Context	3.9	L
	3.10	H
Viability and Sustainability	3.11	H
	3.12	H
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance National

Significance Justification Motunau comprises good quality representative examples of vegetation types which are characteristic of Motiti Ecological District. In addition, these islands are presumed to be free of plant and animal pests (recent evidence suggest no introduced mammals are present), and therefore contain high quality habitat for a range of acutely and chronically threatened, and at risk fauna species. Critical habitat for red-billed gulls and white-fronted terns, as well as the key habitat for tuatara in the Bay of Plenty.

Notes Young grey-faced petrels (titi) are occasionally harvested by iwi (Heaphy 2002).

References Taylor 1991; Beadel 1994a; Garrick 1996; Heaphy 2002; Heaphy 2003b.

6.4 Otanewainuku Ecological District

This Ecological District is a dissected ignimbrite plateau which rises to about 200 m asl in the coastal zone. A narrow band of sand dunes lines the coast behind which are steep ignimbrite cliffs. Where streams drain into the sea there are small wetlands.

The original vegetation cover has been substantially modified in most places. A railway line and state highway have been constructed on the sand dunes in front of the ignimbrite cliffs at the eastern end of the district. Sand dune vegetation has been heavily modified by the establishment of adventive species (e.g. marram, pampas and eucalyptus) and fires. Near the western edge of the coastal zone a sand mining operation operates on the foreshore and dunes. Pohuehue and spinifex are still common on the dunes, but in the past, two other species which are now very uncommon in the district (pingao and *Austrofestuca littoralis* ranked Chronically Threatened, Gradual Decline and *Austrofestuca littoralis*, Chronically Threatened, Vulnerable respectively) (de Lange *et al.* 2004) would have been an important part of the vegetation cover. Raupo dominates the wetlands immediately landward of the dunes, in association with *Baumea articulata* and *Bolboschoenus fluviatilis.*

Pohutukawa forest and treeland line the ignimbrite cliffs in many places. However, the western end of the district has been cleared for agriculture. Pohutukawa, tawa, rewarewa, pukatea and kohekohe would have dominated the forests here with small local wetland areas in the valley floors dominated by raupo, cabbage tree, manuka and possibly kahikatea. Pohutukawa and hard beech would have been dominant at the south-eastern end of the district.

The only remaining areas of forest in the coastal zone occur at the south-eastern end of the district. Dominants include pohutukawa and hard beech, as well as tawa, rewarewa, pukatea, and kohekohe. However there are also areas of secondary forest and shrubland dominated by kanuka, mamaku, rewarewa, manuka, mingimingi and prickly mingimingi (*Cyathodes juniperina*). Matata Scenic Reserve contains the largest remaining example of coastal hard beech-pohutukawa forest.

One of the largest known populations of *Pimelea tomentosa* (Chronically Threatened, Serious Decline, de Lange *et al.* 2004.) occurs in Matata Scenic Reserve.

Freshwater habitats support giant kōkopu and long-finned eel, both chronically-threatened species.

Table 11: Threatened and notable species in Otanewainuku Ecological District, coastal bioclimatic zone.

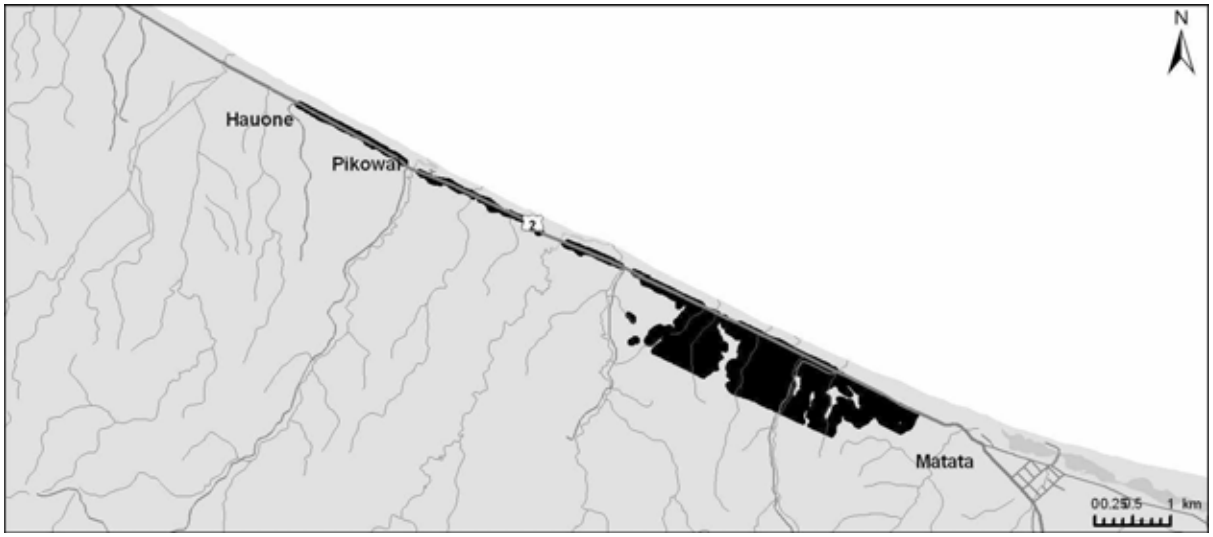
Scientific Name	Common Name	Threat Classification/ Significance
BIRDS		
Chronically Threatened		
Hemiphaga novaeseelandiae	kereru	Gradual Decline
VASCULAR PLANTS		
Chronically Threatened		
Pimelea tomentosa		Serious Decline
Desmoschoenus spiralis	pingao	Gradual Decline
TERRESTRIAL INVERTEBRATES		
Other Notable Species		
Liarea egea[1]	snail	Distributional Limit
Iotula microbrunneus	snail	Not Classified
FRESHWATER FISHES		
Chronically Threatened		
Anguilla dieffenbachii	long-finned eel	Gradual Decline
Galaxias argenteus	giant kōkopu	Gradual Decline

Notes
[1] Near its southern limit of distribution in this ED (Mayhill 1994).

References
Beadel 1994a; NIWA 2006.

OHINEKOAO

Site Number	SVHZ-116
Grid Reference (NZMG)	2836766 6362752
Local Authority	Whakatane District Council
Ecological District	Otanewainuku
Status	Protected (parts of DOC Ohinekoao Scenic Reserve and Ohinekoao Recreation Reserve, and QEII covenants) and unprotected parts
Site Area	214.0 ha
Altitudinal Range	14-220 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa-kanuka forest.	Escarpment
Terrestrial	Rewarewa/kanuka forest.	Ridge, face
Terrestrial	Rewarewa/kamahi-kanuka forest.	Ridge, face
Terrestrial	Manuka scrub.	Face
Terrestrial	Northern rata/tawa-pukatea-rewarewa-mangeao forest.	Gully, face
Terrestrial	Tawa forest, rewarewa forest, rewarewa-mamaku treefernland.	Ridge, gully
Terrestrial	Manuka mingimingi-prickly mingimingi scrub and shrubland.	Ridge, face
Terrestrial	Raupo reedland and manuka shrubland.	Gully
Terrestrial	Pohutukawa forest and treeland.	Cliff
Terrestrial	Tawa-mangeao-rewarewa forest (with local pukatea, a few puriri and dead mangeao).	Hillslope
Terrestrial	Rewarewa/kanuka-mamaku forest (kamahi and/or mangeao locally common, scattered pohutukawa, a few little pockets of tawa forest).	Hillslope
Terrestrial	(Rewarewa)/manuka-mingimingi scrub + (rewarewa)-(pohutukawa)/manuka scrub.	Hillslope
Terrestrial	Bluff vegetation. (Beadel (In press) and Beadel *et al*. 1996a)	Cliff

Indigenous Flora

Pimelea tomentosa (Chronically Threatened, Serious Decline) occurs in Ohinekoao Scenic Reserve and is likely to occur in other parts of this site (Beadel *et al.* 1996a; Beadel 1999b).

Indigenous Fauna Two snail species of interest occur in this area: *Iotula microbrunneus* and *Liarea egea REF*, which is near its southern limit of distribution at this site (Mayhill 1994).

Protects the Mimiha Stream which contains significant native fish species (Beadel, In Press).

Condition/Pressures Pleistocene marine sequences moderately vulnerable to erosion and road widening (Kenny and Hayward 1996).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	H
	3.4	M
	3.5	H
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	H
	3.12	H
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

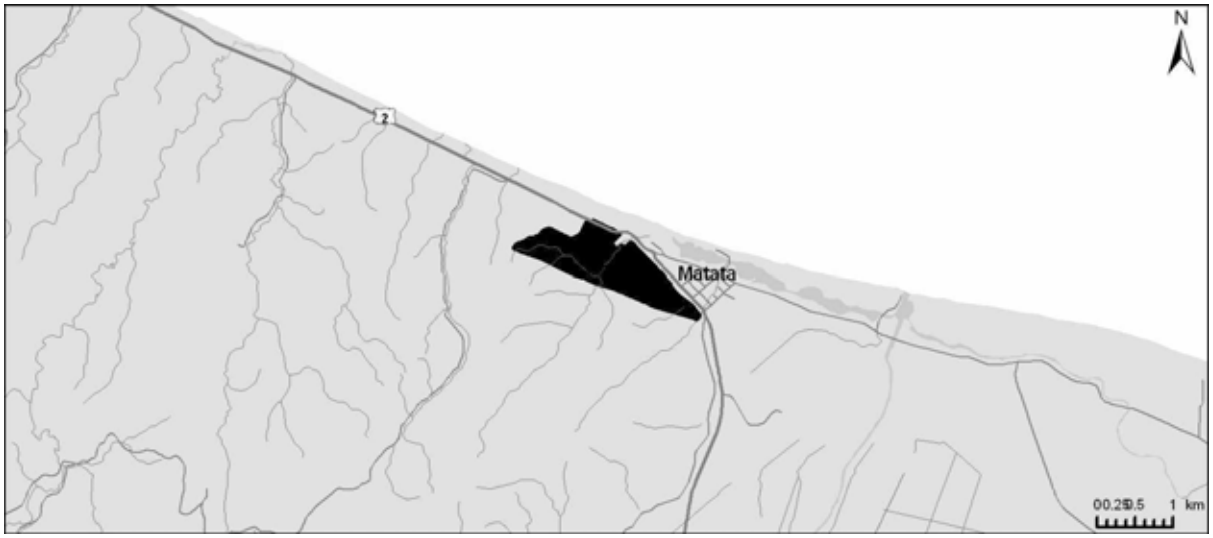
Significance Justification This site contains good quality examples of coastal and semi-coastal vegetation. It is contiguous and complementary to Matata Scenic Reserve and the Otamarakau dunes, providing sequences of wetland and sand dune vegetation contiguous with forest, albeit dissected by the coastal highway. One chronically threatened plant species is present. Includes the best exposed sequence of Pleistocene marine sedimentary strata in the northern North Island (Kenny and Hayward 1996).

Notes The unprotected parts of this site were identified as a Category 2 RAP (Recommended Area for Protection) in the Otanewainuku Ecological District PNA (Protected Natural Areas Programme) report (Beadel, In press). Roadside portion of Ohinekoao Reserve contains natural and human-made (rail cutting) exposures of Pleistocene marine sequences and faunas – nationally important (Kenny and Hayward 1996).

References Kenny and Hayward 1996; Mayhill 1994; Beadel *et al.* 1996a; Beadel 1999b; Beadel (In press).

MATATA SCENIC RESERVE (PART)[1]

Site Number SVHZ-117
Grid Reference (NZMG) 2839340 6361396
Local Authority Whakatane District Council
Ecological District Otanewainuku
Status Protected (DOC, Matata Scenic Reserve)
Site Area 108.6 ha
Altitudinal Range 17-197 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Hard beech-pohutukawa forest.	Hillslope
Terrestrial	Pohutukawa-kanuka forest.	Hillslope
Terrestrial	Kanuka forest.	Hillslope
Terrestrial	Manuka-mingimingi-prickly mingimingi scrub and shrublands.	Hillslope
Terrestrial	Pohutukawa/brush wattle-mahoe forest.	Hillslope
Terrestrial	Japanese honeysuckle vineland. (Beadel 1991a)	Hillslope

Indigenous Flora One hundred and eighty-nine indigenous and 48 adventive taxa have been recorded in the entire Matata Scenic Reserve (Beadel 2001c), of which this site is a part. The single threatened species recorded, *Pimelea tomentosa* (Chronically Threatened, Serious Decline), is known to occur within the coastal part of the reserve (Beadel *et al.* 1996a, Beadel 2000; Beadel 2001c).

Indigenous Fauna Kereru (Chronically Threatened, Gradual Decline) and common forest birds (Beadel *et al.* 1996a).

Condition/Pressures Japanese honeysuckle is locally common.

[1] Part of the scenic reserve occurs outside the 'coastal environment' study area (i.e. further than 1 km inland of MHWS).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	H
	3.4	H
	3.5	H
	3.6	L
Diversity and Pattern	3.7	H
Naturalness	3.8	H
Ecological Context	3.9	H
	3.10	H
Viability and Sustainability	3.11	H
	3.12	H
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance National

Significance Justification Matata Scenic Reserve is the largest example of coastal forest remaining in the Otanewainuku Ecological District and Northern Volcanic Plateau Ecological Region. Much of it is in relatively good condition and it contains representative examples of the vegetation of the Ecological District and Bay of Plenty Region (Beadel *et al.* 1996a). Matata Scenic Reserve contains the largest remaining example of coastal hard beech-pohutukawa forest (Beadel *et al.*1996a). There is some pressure from invasive weeds associated with nearby roads and residential areas. One chronically threatened plant species and one chronically threatened bird species is known from the site.

Notes Matata Scenic Reserve was formerly part of a much larger forest tract, extending west to the Pongakawa plains and inland to Lakes Rotoma, Rotoiti, Rotoehu and beyond. The former larger tract has now been reduced to a series of smaller remnants, of which the reserve is the largest example of coastal forest (Beadel 2001c).

References Nicholls 1968; Nicholls 1976; Beadel 1991a; Beadel *et al.* 1996a; Beadel 2000; Beadel 2001c.

6.5 White Island Ecological District

White Island Ecological District includes several islands and rocks. The largest of these is Whakaari (White Island), a 238 ha active andesite volcanic island situated about 50 k, NNE of Whakatane. The island, which reaches 321 m asl, is the summit of the large, mainly submarine volcano. Moutohora (Whale Island) is a remnant volcanic cone which has been heavily eroded, leaving two peaks (353 m asl and 189 m asl) which fall away to cliffs in the north and at the western and eastern ends of the island. Three small sandy bays are located on the southern coast. Hydrothermal activity occurs on the south-west flanks of the central cone in Sulphur Valley with some hot springs at sea level. Rurima Island, Tokata Island, Moutoki Island, Te Paepae o Aotea and Club Rocks are the other small islands within the district.

Large areas of pohutukawa forest were killed during volcanic activity on Whakaari between 1976 and 1981, reducing the total vegetation cover on the island by more that 50%. Today, only about 48 ha of forest and scrub entirely dominated by pohutukawa remains, along with the herbfields and grasslands associated with gannetries (in which the dominant species are *Disphyma australe* subsp. *australe, Einadia trigonos* subsp. *trigonos* and *Poa anceps* subsp. *anceps*). The island has very low plant species diversity, with only seven species recorded (Clarkson *et al.* 1989).

Pohutukawa forest was probably once the dominant vegetation on Moutohora with occasional mangeao and possible podocarps (Rijkse 1980). However, the vegetation of Moutohora has been highly modified, beginning with clearing and burning by Māori, followed by European farming and the introduction of goats, sheep and Norway rats. The combined effects of humans and introduced animals devastated the indigenous vegetation. Introduced animals have been eradicated and the vegetation is recovering rapidly, and today the island is covered by a mosaic of pohutukawa forest, mahoe forest, kanuka shrubland, and bracken. Natural regeneration of canopy species such as pohutukawa, mahoe (*Melicytus ramiflorus* subsp. *ramiflorus*) and kanuka is occurring in scrub and shrublands.

Pohutukawa forest, scrub dominated by *Melicytus novae-zelandiae* and taupata, and glasswort and New Zealand iceplant rocklands comprise the main vegetation cover on Moutoki and Rurima Islands. There is a small example of spinifex-(pingao) sandfield on Rurima Island.

Moutoki Island is the present-day southern limit of distribution for mawhai (*Sicyos australis*) (Data Deficient). *Lepidium oleraceum* (Acutely Threatened, Nationally Endangered) occurs on the Volkner Rocks.

Moutoki and Moutohora have natural and translocated tuatara populations, respectively. Eradication of introduced mammals from Moutohora in particular means that the Ecological District sustains a healthy and presumably recovering indigenous fauna, including both land and sea bird species, and a range of lizard species.

Table 12: Threatened and notable species in White Island Ecological District, coastal bioclimatic zone.

Scientific Name	Common Name	Threat Classification/ Significance
BIRDS		
Acutely Threatened		
Nestor meridionalis septentrionalis[1]	North Island kaka	Nationally Endangered
Charadrius obscurus aquilonius	NZ dotterel	Nationally Vulnerable
Sterna caspia	Caspian tern	Nationally Vulnerable
Falco novaeseelandiae "bush"	NZ falcon	Nationally Vulnerable
Egretta sacra sacra	reef heron	Nationally Vulnerable
Chronically Threatened		
Larus novaehollandiae scopulinus	red-billed gull	Gradual Decline
Eudyptula minor iredalei	northern little blue penguin	Gradual Decline
Charadrius bicinctus bicinctus	banded dotterel	Gradual Decline
Puffinus carneipes	flesh-footed shearwater	Gradual Decline
At Risk		
Puffinus bulleri	Buller's shearwater	Range Restricted
Philesturnus carunculatus rufusater[2]	North Island saddleback, tieke	Range Restricted
REPTILES		
Oligosoma infrapunctatum	speckled skink	Gradual Decline
At Risk		
Sphenodon p. punctatus	northern tuatara	Sparse
VASCULAR PLANTS		
Acutely Threatened		
Lepidium oleraceum	Cook's scurvy grass	Nationally Endangered
Chronically Threatened		
Desmoschoenus spiralis	pingao	Gradual Decline
Cyperus insularis		Gradual Decline
Doodia squarrosa		Gradual Decline
At Risk		
Tetragonia tetragonioides	NZ spinach	Sparse
Myosotis spathulata		Sparse
Schizaea dichotoma	Fan fern	Sparse
Kunzea ericoides var. *microflora*	prostrate kanuka	Range Restricted
Sicyos australis	mawhai	Data Deficient

Notes
[1] Transient only.
[2] Reintroduced; founding population was translocated to Moutohora from Cuvier Island in 1999.

References
Beadel 1994a; DOC 1999; Brunton 2000; Heaphy 2003b; Boyt 2004; Heenan and de Lange 2005.

RURIMA, MOUTOKI AND TOKATA ISLANDS

Site Number SVHZ-211
Grid Reference (NZMG) 2851245 6367260
Local Authority
Ecological District White Island
Status Protected (DOC, Rurima Islands Wildlife Refuge)
Site Area 22.5 ha
Altitudinal Range 0-14 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
	Rurima Island	
Terrestrial	Pohutukawa forest.	Rocky island
Terrestrial	Pohutukawa/taupata-*Melicytus novae-zelandiae* scrub.	Rocky island
Terrestrial	Spinifex-oioi-ripgut brome grassland.	Rocky island
Terrestrial	Glasswort herbfield.	Rocky island
Terrestrial	NZ iceplant rockland.	Rocky island
	Moutoki Island	
Terrestrial	Pohutukawa forest.	Rocky island
Terrestrial	Taupata-*Melicytus novae-zelandiae* scrub.	Rocky island
Terrestrial	Glasswort rockland.	Rocky island
	Tokata Island	
	Not described.	
	(Beadel 1994a)	

Indigenous Flora

Pingao (Chronically Threatened, Gradual Decline) is present on Rurima Island; two small groups of this species covering approx. 10 x 10 m were confirmed present in 2004 (Beadel 1994a, Boyt 2004). NZ spinach (At Risk, Sparse) occurs on Moutoki and Rurima Islands (Beadel 1994a). Mawhai (Data Deficient) reaches its present-day southern limit of distribution on Moutoki Island (Cameron 1992). There were 21 healthy plants in 2004 (Boyt 2004). *Melicytus novae-zelandiae*, a species generally confined to islands, is present on Moutoki and Rurima Islands, and is not known from elsewhere in the White Island Ecological District (Beadel 1994a).

Indigenous Fauna

A pair of reef herons (Acutely Threatened, Nationally Vulnerable) was breeding on Rurima in 2003 (Heaphy 2003b). Blue penguin (Chronically Threatened, Gradual Decline) and red-billed gull (Chronically Threatened, Gradual Decline) were recorded in 2004 (Boyt 2004). Other native bird species include North Island fantail, Australasian gannet, black-backed gull, NZ kingfisher, variable oystercatcher, grey-faced petrel, sooty shearwater, welcome swallow, tui and pied shag (Boyt 2004).

There are common gecko and shore skink populations on Rurima Island, and tuatara (At Risk, Sparse) on Moutoki Island (Boyt 2004). This is one of four remaining natural populations of tuatara in the Bay of Plenty (Heaphy 2003b).

Condition/Pressures

Kiore were eradicated from Rurima in 1983 as part of early experimentation in eradication of this species (McFadden and Towns 1991) and no introduced mammals occur on the islands today (Beadel 1994a). Regular bait station checks on Rurima were started in 2004 (Boyt 2004). Common garden snails are abundant, preventing the reintroduction of native cress (*Lepidium oleraceum*) (Heaphy 2003b). There are regular landings by the public, which present a fire and biosecurity risk (Heaphy 2003b).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	H
	3.4	M
	3.5	L
	3.6	M
Diversity and Pattern	3.7	H
Naturalness	3.8	H
Ecological Context	3.9	L
	3.10	H
Viability and Sustainability	3.11	M
	3.12	H
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance

National

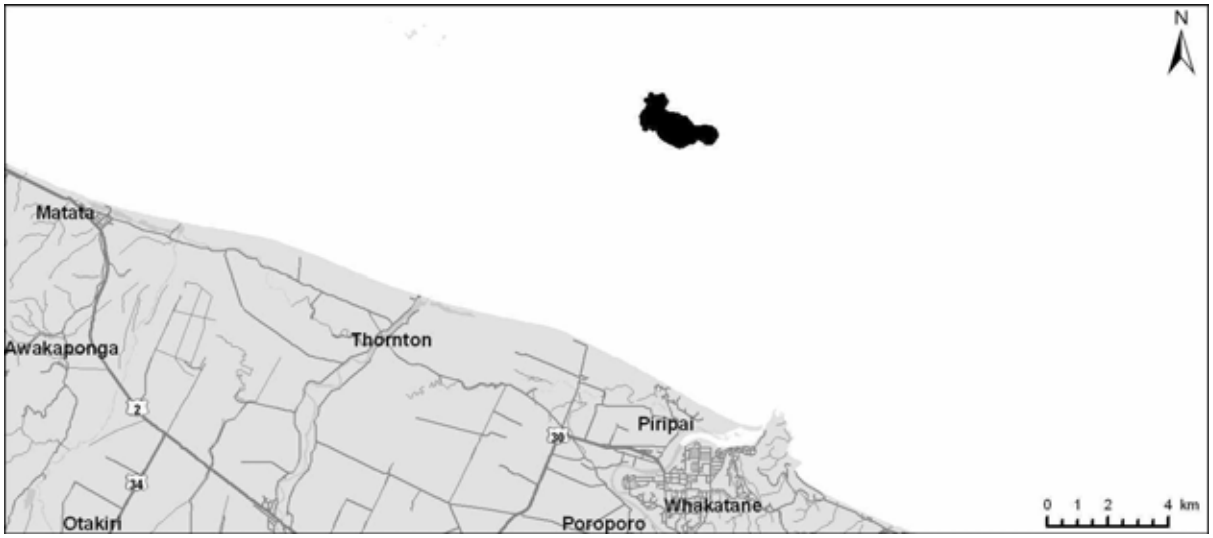
Significance Justification

Apart from Tokata Island (about which little is known) these islands contain good quality representative examples of the vegetation of the Ecological District. The vegetation types present do not occur on either Moutohora or Whakaari (Beadel 1994a). The islands are free of introduced pest mammals, but common garden snails are impacting on some plant regeneration. There are chronically threatened, at risk, data deficient, and regionally uncommon plant species present on the islands. One acutely threatened and two chronically threatened bird species, and three at risk reptile species are present.

Notes	The islands are owned by local iwi, but are managed as a Wildlife Refuge in conjunction with the Department of Conservation (see DOC Bay of Plenty file PAW-04-02-07).
References	Cameron 1992; Beadel 1994a; Heaphy 2003b; Boyt 2004.

MOUTOHORA (WHALE ISLAND)

Site Number SVHZ-212
Grid Reference (NZMG) 2859550 6364257
Local Authority
Ecological District White Island
Status Protected (DOC, Moutohora (Whale) Island Wildlife Management Reserve)
Site Area 171.1 ha
Altitudinal Range 0-160 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa forest.	Volcanic hard coast
Terrestrial	Pohutukawa-(cabbage tree) forest and scrub⇔ bracken fernland⇔oioi rushland⇔hairy lotus-grasses herbfield.	Volcanic hard coast
Terrestrial	Pohutukawa shrubland.	Dune sands
Terrestrial	Mahoe forest.	Volcanic hard coast
Terrestrial	Kanuka scrub.	Volcanic hard coast
Terrestrial	Pohutukawa/kanuka scrub and forest.	Volcanic hard coast
Palustrine	Cyperus[11]-*Juncus* tussockland⇔oioi rushland.	Wetland
Palustrine	Oioi-kanuka-(pohutukawa)-(pampas) shrub-sedgeland.	Wetland
Terrestrial	*Cyperus ustulatus* tussockland.	Volcanic hard coast
Terrestrial	Oioi rushland.	Volcanic hard coast
Estuarine	Sea rush tussockland.	Intertidal flat
Terrestrial	(Pohutukawa)/oioi-(lupin) sandfield.	Sand dune
Terrestrial	Spinifex-(tauhinu) sandfield.	Sand dune
Terrestrial	Bracken fernland.	Volcanic hard coast
Terrestrial	(Oioi)/grasses-hairy lotus-scarlet pimpernel grassland and herbfield⇔ring fern-*Pteris tremula* fernland⇔rautahi sedgeland.	Volcanic hard coast
Terrestrial	Rockland and boulderfield.	Volcanic hard coast
Terrestrial	(Lupin)/(*Carex pumila*) sandfield.	Beach sands

[11] Identity not confirmed – *Cyperus ustulatus* or *Cyperus insularis*.

Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Prostrate kanuka shrubland.	Ridge,hillslope (sinter deposits)
Terrestrial	Pohutukawa-kanuka forest.	Hillslope
Terrestrial	(Pohutukawa)/prostrate kanuka forest.	Hillslope
Terrestrial	Bare soil	Sinter deposits
	(Regnier 1986 and Wildland Consultants 2005b)	

Indigenous Flora

There are 190 indigenous and 119 exotic vascular plant species on Moutohora (Ogle 1990; DOC 1999). In addition, the island has a relatively well described non-vascular flora, with 79 species of moss (Beever and Brownsey 1990) and 144 species of lichen recorded (Hayward and Hayward 1990). Five lichen species have their first New Zealand records from this island.

Threatened plants:
Myosotis spathulata (At Risk, Sparse), NZ spinach (*Tetragonia tetragonioides* - At Risk, Sparse), *Asplenium appendiculatum* subsp. *maritimum* and *Asplenium haurakiense* all occur naturally on the island (Ogle 1990a[1]). Moutohora is the southernmost limit of distribution of *A. haurakiense* (NZPCN 2006). A newly described and chronically threatened sedge species, *Cyperus insularis* (Chronically Threatened, Gradual Decline), occurs on Moutohora (Heenan and de Lange 2005). Prostrate kanuka (*Kunzea ericoides* var. *microflora* – At Risk, Range Restricted) and *Schizaea dichotoma* (At Risk, Sparse) grow on geothermal areas and *Doodia squarrosa* (Chronically Threatened, Gradual Decline) is locally common throughout (Paul Cashmore pers. comm. 2006). Since 1999 ten threatened plant species which occur naturally in the Bay of Plenty coastal bioclimatic zone have been planted on Moutohora (Shaw 1997b; Gosling 1999): *Sicyos australis* (Data Deficient), pingao (Chronically Threatened, Gradual Decline), *Pimelea tomentosa* (Chronically Threatened, Serious Decline), parapara (At Risk, Sparse), *Euphorbia glauca* (Chronically Threatened, Serious Decline), sand pimelea (Chronically Threatened, Gradual Decline), *Austrofestuca littoralis* (Chronically Threatened, Gradual Decline), *Lepidium oleraceum* (Acutely Threatened, Nationally Endangered), NZ spinach (*Tetragonia tetragonioides* - At Risk, Sparse) and *Rorippa divaricata* (Acutely Threatened, Nationally Endangered). Most of these appear to be establishing except sand pimelea (limited recruitment), *Austrofestuca littoralis* (limited recruitment) and *Rorippa divaricata* (unsuccessful). Tawapou has also been planted as part of this programme, but this species is no longer considered nationally threatened (Paul Cashmore pers. comm. 2006).

A unique sequence of geothermal vegetation occurs from the high tide mark up to prostrate kanuka scrub and shrubland through to pohutukawa forest (Wildland Consultants 2005b). Indigenous species typical of geothermal sites include *Schizaea dichotoma* (At Risk, Sparse), prostrate kanuka (At Risk, Range Restricted), kanuka, mingimingi, turutu, *Psilotum nudum*, *Lycopodiella cernua*, *Drosera auriculata* and *Histopteris incisa* (Wildland Consultants 2005b).

Kanuka scrub on sand is a regionally rare vegetation type (Beadel 1994a).

[1] Scientific names updated since original paper.

From 1984 to 1989 there was an extensive planting programme to supplement natural regeneration and enrich species diversity (McGlynn 1990; Smale and Owen 1990). This programme stopped because natural regeneration of species such as pohutukawa, mahoe and kanuka was abundant (Shaw *et al.* 2002). Photopoint vegetation monitoring has been carried out on Moutohora from 1990 to the present (Shaw *et al.* 2002).

Indigenous Fauna

There are 40 naturally occurring indigenous bird species on the island (DOC 1999), including the following threatened species: NI kaka (Acutely Threatened, Nationally Endangered), Caspian tern (Acutely Threatened, Nationally Vulnerable), reef heron (Acutely Threatened, Nationally Vulnerable), NZ dotterel (Acutely Threatened, Nationally Vulnerable), blue penguin (Chronically Threatened, Gradual Decline), red-billed gull (Chronically Threatened, Gradual Decline); banded dotterel (Chronically Threatened, Gradual Decline); flesh-footed shearwater (Chronically Threatened, Gradual Decline) and Buller's shearwater (At Risk, Range Restricted). A pair of NZ falcons (Acutely Threatened, Nationally Vulnerable) was first recorded nesting on the island in 2000 (Parker *et al*. 2000) and has been resident ever since (Nancy Willems, pers. comm. 2006). Grey-faced petrel are the dominant avifauna on the island (Nancy Willems pers. comm. 2006).

Two reintroduced indigenous bird species now have breeding populations on Moutohora. Forty North Island saddlebacks (At Risk, Range Restricted) were translocated to Moutohora from Cuvier Island in 1999 (Brunton 2000). Captive-bred hybrid red-crowned kakariki were introduced in 1986 (DOC 1999). North Island brown kiwi have recently been reintroduced but have not bred yet (Nancy Willems, pers. comm. 2006).

Speckled skink (Chronically Threatened, Gradual Decline), common gecko and copper skink are present on the island (DOC 1999). In 1996, 32 adult tuatara (At Risk, Sparse) were released on Moutohora. Seven were recaptured in 2005, and there were a further seven island-born individuals. The chances of long-term establishment of tuatara on Moutohora are said to be promising (Ussher and Willems 2006).

Fourteen species of native land snail are present on Moutohora (Ogle 1990b).

Condition/Pressures

The vegetation of Moutohora has been highly modified, beginning with clearing and burning by Maori, followed by European farming and the introduction of goats, sheep, Norway rats and rabbits. All these introduced animals have subsequently been eradicated, leading to a recovery of the vegetation from mostly grassland with very little forest (Parris *et al.* 1971) to that described above (Wright 1990; Beadel 1994a).

There are numerous weed threats on the island however most infestations are under control. Department of Conservation weed control over the past decade has focussed on pampas (especially on coastal cliffs), moth plant, *Lilium formosanum* (in dunes), tree lucerne, boxthorn and any new incursions found during surveillance monitoring (e.g. washed up *Juglans ailantifolia*) (Paul Cashmore pers. comm. 2006).

Although there is an island quarantine programme, there is still a substantial threat to the biodiversity of the island from illegal landings with associated fire and biosecurity risks (Paul Cashmore pers. comm. 2006).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	H
	3.4	H
	3.5	M
	3.6	H
Diversity and Pattern	3.7	H
Naturalness	3.8	H
Ecological Context	3.9	L
	3.10	H
Viability and Sustainability	3.11	H
	3.12	H
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance National

Significance Justification As a relatively large island free of mammalian pests, Moutohora is nationally significant. The highly modified vegetation of the island is regaining elements of its natural character through a combination of revitalised ecological processes, e.g. pollination, seedling recruitment, increased nutrient inputs from seabirds, and active management. The presence of a diverse suite of weeds is the major pressure operating on this site, however a sustained weed control programme has reduced the impact of weeds. Flora includes two acutely threatened, seven chronically threatened, and five at risk species. Avifauna includes six acutely threatened, four chronically threatened, and two at risk species. One chronically threatened and one at risk reptile species are present. Moutohora is unique in New Zealand in having a relatively large area of geothermal activity and associated geothermal vegetation at sea level. It is also unique in having a relatively large geothermal site that does not have any introduced mammals. It is the only example of geothermal vegetation in the White Island Ecological District (Wildland Consultants 2005b).

Notes Ngati Awa, the Department of Conservation and the Bay of Plenty Conservation Board manage the island jointly. Prior to introduction of pests, there used to be large populations of grey-faced petrel and sooty shearwater on the island which were harvested as muttonbirds or 'titi' by Ngati Awa, but harvest has not continued to the present day (Te Runanga o Ngati Awa 1992; DOC 1999). This site contains six regionally important geological sites of volcanic or geothermal origin (Kenny and Hayward 1996).

References Parris *et al.* 1971; Regnier 1986; Beever and Brownsey 1990; McGlynn 1990; Hayward and Hayward 1990; Ogle 1990a; Ogle 1990b; Smale and Owen 1990; Wright 1990; Beadel 1994a; Kenny and Hayward 1996; Patrick 1996; Shaw 1997b; DOC 1999; Parker *et al.* 2000; Brunton 2000; Shaw *et al.* 2002; Heenan and de Lange 2005; Wildland Consultants 2005b; Ussher and Willems 2006.

TE PAEPAE O AOTEA (VOLKNER ROCKS)

Site Number SVHZ-213
Grid Reference (NZMG) 2875593 6405396
Local Authority
Ecological District White Island
Status Unprotected
Site Area 2.4 ha
Altitudinal Range 0 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa/taupata scrub.	Volcanic hard coast
Terrestrial	Taupata shrubland.	Volcanic hard coast
Terrestrial	Glasswort rockland. (Beadel 1994a)	Volcanic hard coast

Indigenous Flora Cook's scurvy grass (Acutely Threatened, Nationally Endangered) was present in 1993. In terms of terrestrial flora, Te Paepae o Aotea are considered complementary to Whakaari, containing several taxa not currently known from Whakaari, and potentially acting as a seed source for Whakaari during times when Whakaari is relatively stable (Shaw 1993).

Indigenous Fauna This is an important breeding site for coastal avifauna. Red-billed gull, flesh-footed shearwater (Chronically Threatened, Gradual Decline), grey ternlet, Buller's shearwater (At Risk, Range Restricted) and other non-threatened sea birds have been recorded here since 2003 (OSNZ 2006).

Condition/Pressures No information.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	H
	3.5	M
	3.6	L
Diversity and Pattern	3.7	L
Naturalness	3.8	H
Ecological Context	3.9	H
	3.10	L
Viability and Sustainability	3.11	L
	3.12	H
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance National

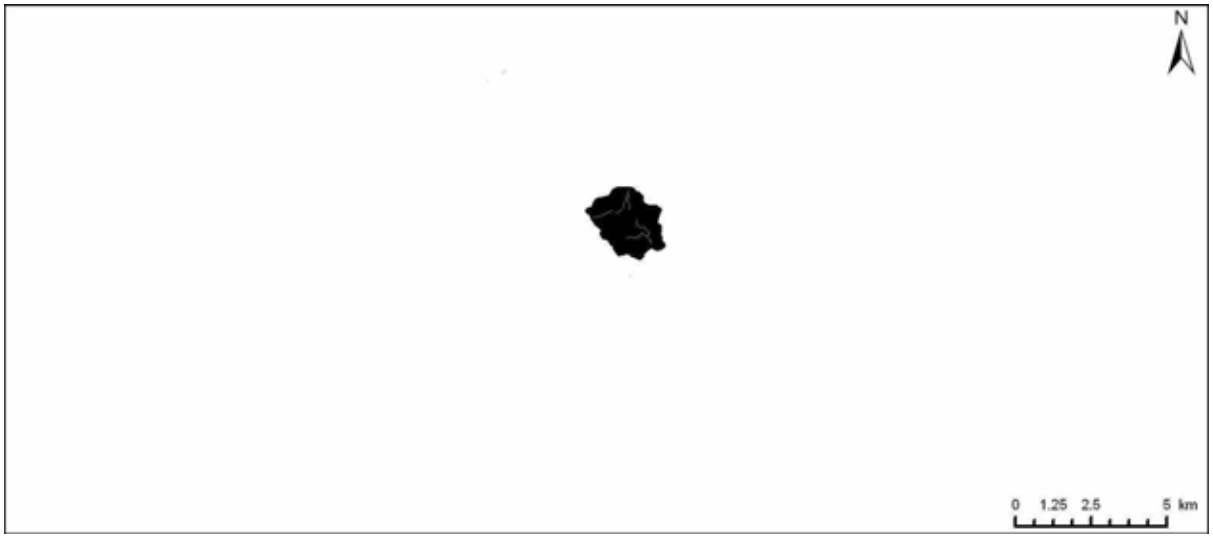
Significance Justification A representative example of vegetation and flora of the ecological district. Te Paepae o Aotea is particularly significant as a pest-free breeding site for chronically threatened and at risk sea birds, as habitat for an acutely threatened plant species, and as a potential seed source for Whakaari.

Notes Te Paepae Aotea (Volkner Rocks) Marine Reserve was proposed in 2002 (DOC and Whakaari Marine Protection Steering Committee 2002) and officially opened in October 2006. It extends one nautical mile out from the rocks except on the southwestern side.

References Shaw 1993; Beadel 1994a; Kenny and Hayward 1996; DOC and Whakaari Marine Protection Steering Committee 2002; OSNZ 2006.

WHAKAARI (WHITE ISLAND)

Site Number SVHZ-214
Grid Reference (NZMG) 2879818 6400517
Local Authority
Ecological District White Island
Status Protected (White Island Private Scenic Reserve)
Site Area 334.9 ha
Altitudinal Range 0-74 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa forest and scrub.	Volcanic hard coast
Terrestrial	Dead and damaged pohutukawa forest and scrub.	Volcanic hard coast
Terrestrial	NZ iceplant-*Einadia trigonos-Poa anceps* subsp. *anceps* herbfield and grassland. (Clarkson *et al.* 1989)	Volcanic hard coast

Indigenous Flora Much of the island is unvegetated due to the impact of volcanic eruptions. The understorey of pohutukawa forest and scrub is very depauperate. Only seven vascular plant species were recorded on the island in 1989 (Clarkson *et al.* 1989).

Indigenous Fauna No information.

Condition/Pressures Kiore are the only introduced mammals that occur on the island (Beadel 1994a).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	L
	3.3	L
	3.4	H
	3.5	H
	3.6	N/A
Diversity and Pattern	3.7	L
Naturalness	3.8	H
Ecological Context	3.9	H
	3.10	L
Viability and Sustainability	3.11	H
	3.12	H
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance National

Significance Justification Whakaari contains representative examples of vegetation regenerating on an active volcano.

Whakaari is of international scientific importance as a place where an active volcano and its effects on plant and animal populations can be studied (Beadel 1994a).

Contains seven volcanic or geothermal sites of national or international geological importance, including NZ's most active volcano over the last thirty years and deposits from the debris avalanche that killed eleven sulphur miners in 1914 (Kenny and Hayward 1996).

References Clarkson *et al.* 1989; Beadel 1994a.

7. WHAKATANE ECOLOGICAL REGION

7.1 Overview

The Whakatane Ecological Region comprises the Te Teko, Taneatua and Opotiki Ecological Districts, all of which adjoin the coast. This region is characterised by coastal and lowland alluvial plains and terraces and rolling hill country. Major features of the region are the Rangitaiki Plains (through which flow the Whakatane, Tarawera and Rangitaiki Rivers) and Ohiwa Harbour. The Waioweka and Otara Rivers flow through the Opotiki Ecological District.

7.2 Te Teko Ecological District

Te Teko Ecological District comprises the Rangitaiki plains, a recent alluvial floodplain of the Whakatane, Rangitaiki and Tarawera Rivers. The plains were originally largely wetlands but virtually the entire area has been drained and developed for farming. Today less than 1% of the original wetlands remain (Gibbons 1990, Pike 1991).

The coastal zone of Te Teko Ecological District largely consists of coastal sand dunes. However, where the sand dunes extend less than 1 km from the coast, farmland (originally part of the Rangitaiki swamp) makes up the remainder of the zone. There is a small estuary at the mouth of the Whakatane River. Both the Rangitaiki and Tarawera Rivers have been diverted from their original shared outlet, but coastal wetlands still remain at this site (Matata Wildlife Refuge).

The sand dune vegetation (both foredune and back dunes) has been subjected to a long history of disturbance, burning and grazing. Spinifex and pingao would have been common on the foredune, grading into pohuehue-*Ficinia nodosa* vineland and sedgelands and kanuka forest and scrub. Today the foredune is generally dominated by spinifex. There is scattered pingao along much of the coast and it is common at several sites. Behind the foredune the dominant species are pohuehue, African boxthorn (*Lycium ferocissimum*) and *Ficinia nodosa*. Whilst the majority of the back dunes have been completely cleared of vegetation and are intensively grazed, there are relatively large areas of "rough pasture" where pohuehue is relatively common. In recent years some of these areas have been retired from farming and are beginning to recover. In addition, kanuka "Thornton" forest, scrub and shrublands occur on the Wahieroa sand dunes between the Rangitaiki and Tarawera Rivers. This is considered to be a different species from the more common kanuka species found throughout the central North Island. Kanuka forest on sand dunes is a nationally rare vegetation type. Behind the sand dunes the Rangitaiki swamp would have been dominated by raupo, cabbage tree, harakeke and *Carex* species.

A lagoon in the old Tarawera River estuary near Matata is surrounded by a moderate sized wetland dominated by raupo reedland, and mixtures of harakeke, saltmarsh ribbonwood, sea rush and oioi. There are small estuarine wetlands in the Whakatane estuary dominated by sea rush, *Bolboschoenus fluviatilis, B. caldwellii* and *Schoenoplectus pungens*, with local saltmarsh ribbonwood, glasswort, oioi and bachelor's button (*Cotula coronopifolia*). Thornton Lagoon to the east of the Rangitaiki River mouth is bounded by a narrow band of raupo reedland.

Cyclosorus interruptus (ranked Chronically Threatened, Gradual Decline, de Lange *et al.* 2004) and pingao (Chronically Threatened, Gradual Decline) both occur in the coastal zone of the district.

Coastal areas of Te Teko Ecological District provide habitat for several acutely threatened bird species such as white heron, black-fronted tern and NZ dotterel. Long-finned eel and giant kōkopu, both chronically-threatened species, have been recorded here.

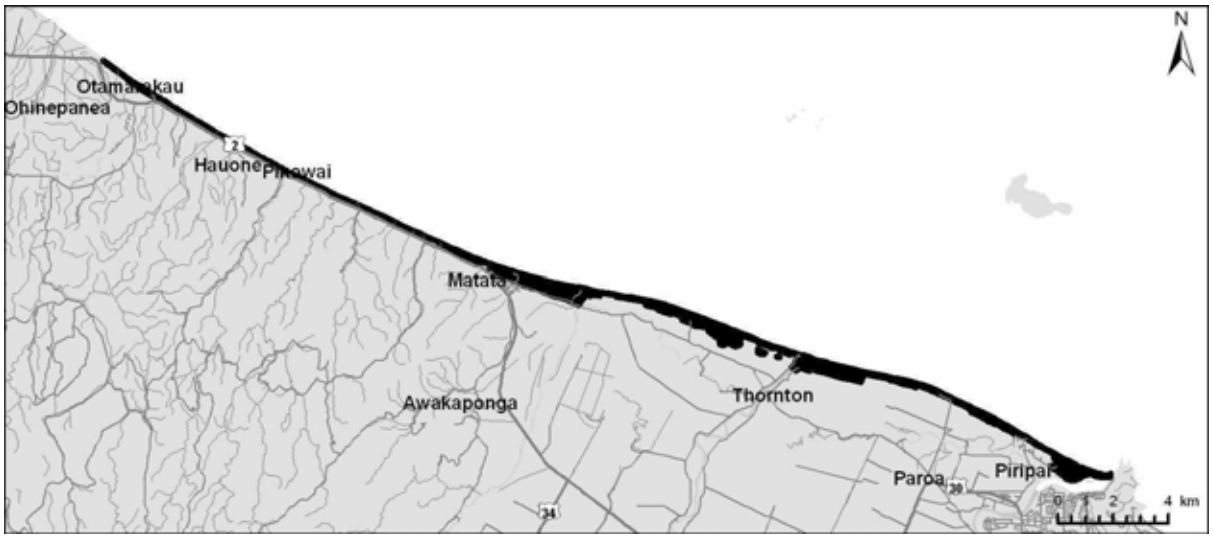
Table 13: Threatened and notable species in Te Teko Ecological District, coastal bioclimatic zone.

Scientific Name	Common Name	Threat Classification
BIRDS		
Acutely Threatened		
Egretta alba modesta	white heron	Nationally Critical
Anas superciliosa superciliosa	grey duck	Nationally Endangered
Botaurus poiciloptilus	Australasian bittern	Nationally Endangered
Sterna albostriata	black-fronted tern	Nationally Endangered
Charadrius obscurus aquilonius	NZ dotterel	Nationally Vulnerable
Sterna caspia	Caspian tern	Nationally Vulnerable
Egretta sacra sacra	reef heron	Nationally Vulnerable
Chronically Threatened		
Larus bulleri	black-billed gull	Serious Decline
Charadrius bicinctus bicinctus	banded dotterel	Gradual Decline
Sterna striata striata	white-fronted tern	Gradual Decline
Larus novaehollandiae scopulinus	red-billed gull	Gradual Decline
At Risk		
Porzana tabuensis plumbea	spotless crake	Sparse
Bowdleria punctata vealeae	North Island fernbird	Sparse
Poliocephalus rufopectus	New Zealand dabchick	Sparse
Gallirallus philippensis assimilis	banded rail	Sparse
Porzana pusilla affinis	marsh crake	Sparse
Phalacrocorax varius varius	pied shag	Sparse
Phalacrocorax sulcirostris	little black shag	Range Restricted
VASCULAR PLANTS		
Acutely Threatened		
Thelypteris confluens	marsh fern	Gradual Decline
Desmoschoenus spiralis	pingao	Gradual Decline
Cyclosorus interruptus		Gradual Decline
At Risk		
Tetragonia tetragonioides	NZ spinach	Sparse
Kunzea aff. *erioides* (a)	Thornton kanuka	Nationally Vulnerable
FRESHWATER FISH		
Acutely Threatened		
Galaxias argenteus	giant kōkopu	Gradual Decline
Anguilla dieffenbachii	long-finned eel	Gradual Decline

References
Rasch 1989a; OSNZ 1999; Beadel *et al.* 2003; OSNZ 2006; NIWA 2006.

OTAMARAKAU-MATATA-WHAKATANE DUNES

Site Number SVHZ-115
Grid Reference (NZMG) 2846534 6360059
Local Authority Whakatane District Council
Ecological District Te Teko, Otanewainuku
Status Protected (DOC, Matata Wildlife Refuge Reserve, Thornton Lagoon Government Purpose (WM) Reserve, Piripai Wildlife Management Reserve) and unprotected parts
Site Area 798.1 ha
Altitudinal Range 0-29 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Saltmarsh ribbonwood shrubland.	Intertidal flat
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	Sea rush-oioi tussockland.	Intertidal flat
Estuarine	(Harakeke)/sea rush-oioi-*Baumea juncea* tussock-sedgeland.	Intertidal flat
Estuarine	*Baumea juncea* sedgeland.	Intertidal flat
Palustrine	*Bolboschoenus fluviatilis* sedgeland.	Wetland
Palustrine	*Baumea articulata-Bolboschoenus fluviatilis*-raupo reedland.	Wetland
Palustrine	Pampas-harakeke/raupo-*Baumea articulata-Schoenoplectus tabernaemontani-Persicaria decipiens* reedland.	Wetland
Palustrine	Raupo reedland.	Wetland
Estuarine	Bachelor's button herbfield.	Intertidal flat
Estuarine	Bachelor's button-*Selliera radicans-Apium prostratum-Isolepis cernua*-arrow grass herbfield.	Intertidal flat
	(Grey willow)/*Baumea juncea* treeland	
Palustrine	Grey willow/*Cyperus ustulatus-Carex geminata*	Wetland
Palustrine	sedgeland and rough pasture	Wetland
	Crack willow/reed sweet grass treeland.	
Palustrine	Reed sweetgrass grassland.	Wetland
Palustrine	Kanuka forest.	Wetland
Terrestrial	Kanuka scrub.	Dune and beach sands
Terrestrial	Kanuka shrubland.	Dune and beach sands
Terrestrial	*Ficinia nodosa*/pohuehue vineland.	Dune and beach sands

Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohuehue vineland.	Dune and beach sands
Terrestrial	Pohuehue-mapou vineland.	Dune and beach sands
Terrestrial	(African boxthorn)/pohuehue vineland.	Dune and beach sands
Terrestrial	(African boxthorn)/pohuehue- sea couch-harestail-	Dune and beach sands
Terrestrial	catsear grass-vineland.	Dune and beach sands
	Spinifex-pingao tussockland.	
Terrestrial	Spinifex-(pingao) tussockland.	Dune and beach sands
Terrestrial	Spinifex sandfield and tussockland.	Dune and beach sands
Terrestrial	Bracken fernland.	Dune and beach sands
Terrestrial	*Carex pumila* sandfield.	Dune and beach sands
Terrestrial	Pingao-*Carex pumila*-spinifex sandfield.	Dune and beach sands
Terrestrial	(Lupin)/*Carex pumila*-harestail-pohuehue-catsear-	Dune and beach sands
Terrestrial	grass-sedgeland.	Dune and beach sands
	Carex pumila/catsear-harestail sedge-grass-	
Terrestrial	herbfield.	Dune and beach sands
	Exotic tree plantations.	
Terrestrial	Gorse-pampas-blackberry shrubland.	Dune and beach sands
Terrestrial	Japanese honeysuckle-tall fescue-pampas	Dune and beach sands
Terrestrial	grassland and vineland.	Dune and beach sands
	Marram grassland.	
Terrestrial	Kikuyu grassland.	Dune and beach sands
Terrestrial	Pasture.	Dune and beach sands
Terrestrial	(Taupata)/*Ficinia nodosa*/pohuehue vineland.	Dune and beach sands
Terrestrial	(Beadel *et al.* 1996a)	Dune and beach sands

Indigenous Flora

Cyclosorus interruptus (Chronically Threatened, Gradual Decline), *Ozothamnus leptophylla, Coprosma acerosa,* and *Oxalis rubens* (Beadel *et al.* 1996a), *Suaeda novae-zelandiae* (Irving & Beadel 1992). A small whau (*Entelea arborescens*) is present in the dunes opposite Ohinekoao Scenic Reserve in 2002 (Greg Jenks pers. comm. 2006). One population of hinarepe (sand tussock) was present in this site in the 1990s (Beadel In press). It has died out, although it may be present elsewhere in the site. No comprehensive field survey of the site for sand tussock has been undertaken since the early 1990s.

Indigenous Fauna

White heron (Acutely Threatened, Nationally Critical); Australasian bittern, grey duck (Acutely Threatened, Nationally Endangered); reef heron (Acutely Threatened, Nationally Vulnerable); banded dotterel (Chronically Threatened, Gradual Decline); banded rail, dabchick, North Island fernbird, spotless crake (At Risk, Sparse); little black shag (Range Restricted) have been recorded at this site (Beadel *et al.* 1996a, OSNZ 2006).

These dunes are also summer breeding areas for NZ dotterel (Acutely Threatened, Nationally Vulnerable) (OSNZ 2006). Nesting areas occur principally on sand dunes at or around river/stream mouths, e.g. Pikowai Stream, Herepuru Stream, Tarawera River and Rangataiki River (John Heaphy pers. comm. 2006).

Matata Lagoon, Tarawera River mouth, Rangitaiki River mouth and Thornton Lagoon are important shorebird roosts that also incur significant human disturbance. A number of smaller stream mouths are visited by or breeding sites for shorebirds, although none could be classed as true roost sites (Owen *et al.* 2006).

Moko skink (At Risk, Sparse) are known to inhabit the dunes around the Waitahanui Stream mouth (John Heaphy pers. comm. 2006).

Giant kōkopu and long-finned eel (Chronically Threatened, Gradual Decline) have been recorded from this site (NIWA 2006).

Condition/Pressures Pampas control has been carried out in this site. This site includes popular camping and fishing spots. Ongoing damage to the dune system is occurring from trampling, camping activities, trail bike riding, and rabbit browse. Following trail bike damage in 1993 the hinarepe (sand tussock) population in the western part of the site was fenced in a joint Western Bay District Council/DOC initiative. This population is browsed by rabbits (Beadel, In press).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	M
	3.5	M
	3.6	M
Diversity and Pattern	3.7	H
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	H
Viability and Sustainability	3.11	H
	3.12	M
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance National

Significance Justification The large size and length of this site, diversity of vegetation types on a characteristically limited range of landforms, and significance as a geological feature make this a site of national significance, despite a correspondingly diverse set of pressures impacting on it. Recent records exist of five acutely threatened, one chronically threatened, and five at risk bird species, two chronically threatened freshwater fish species, one at risk lizard species. The site is also habitat for two chronically threatened plant species.

This site contains a regionally important geological feature - an actively prograding cuspate foreland (Kenny and Hayward 1996).

References Beadel 1994a; Beadel *et al.* 1996a; Kenny and Hayward 1996; NIWA 2006; OSNZ 2006; Owen *et al.* 2006; Beadel (In press).

KOHIKA WETLAND (PART)[13]

Site Number SVHZ-118
Grid Reference (NZMG) 2843161 6360150
Local Authority Whakatane District Council
Ecological District Te Teko
Status Unprotected
Site Area 3.5 ha
Altitudinal Range 4-5 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Palustrine	Ti kouka/raupo-harakeke-*Coprosma propinqua* subsp. *propinqua* shrub-flax-reedland.	Wetland
Palustrine	Raupo-*Bolboschoenus fluviatilis*/swamp millet sedge-reedland.	Wetland
Palustrine	Raupo-*Baumea articulata*/swamp millet reedland.	Wetland
Palustrine	Ti kouka-grey willow/*Coprosma propinqua* subsp. *propinqua*-swamp coprosma scrub. (Beadel *et al.* 2003)	Wetland

Indigenous Flora *Thelypteris confluens* and *Cyclosorus interruptus*, both species classified as chronically threatened (Chronically Threatened, Gradual Decline) (Beadel *et al.* 2003).

Other taxa present include *Myriophyllum propinquum*, *Hypolepis distans*, swamp millet, *Baumea articulata* and harakeke (Beadel *et al.* 2003).

Indigenous Fauna Australasian bittern (Acutely Threatened, Nationally Endangered); banded dotterel (Chronically Threatened, Gradual Decline); North Island fernbird and spotless crake (At Risk, Sparse) (Beadel *et al.* 1996a).

Condition/Pressures No information.

[13] Part of Kohika Wetland occurs outside the 'coastal environment' study area (i.e. further than 1 km inland of MHWS).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	H
	3.4	M
	3.5	M
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	H
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

Significance Justification Kohika Wetland is ecologically important because it is a relatively large freshwater wetland linking two protected freshwater wetlands and it is one of the few remaining examples of wetland vegetation in the Te Teko Ecological District, (Beadel *et al.* 2003). Site provides habitat for one acutely threatened, one chronically threatened, and two at risk bird species. Two chronically threatened plant species are also present.

Notes Kohika Pa, an archaeological site of national significance, extends into this site (Beadel *et al.* 2003). This site was ranked as a Category 2 Natural Heritage Area in Beadel *et al.* (1996b).

References Beadel *et al.* 1996a; Beadel *et al.* 1996b; Beadel *et al.* 2003.

THORNTON ROAD DUNES

Site Number SVHZ-119
Grid Reference (NZMG) 2845353 6360545
Local Authority Whakatane District Council
Ecological District Te Teko
Status Protected (Western Whakatane Coastal Recreation Reserves)
Site Area 30.3 ha
Altitudinal Range 0-1 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	(Boxthorn)/Indian doab-ratstail-yarrow grassland.	Sand dune
Terrestrial	(Boxthorn)/(sweet brier)/kikuyu grassland.	Sand dune
Terrestrial	Kanuka-(boxthorn) treeland. (Gosling and Beadel 2000a)	Sand dune

Indigenous Flora No significant species recorded.

Indigenous Fauna No significant species recorded.

Condition/Pressures This area is dominated by exotic vegetation, including some well established invasive plants (e.g. boxthorn, exotic grasses, sheep's sorrel, wild carrot, lupin, sweet brier, blackberry and pampas)

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	L
Rarity or Distinctive Features	3.2	L
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	L
Naturalness	3.8	L
Ecological Context	3.9	M
	3.10	L
Viability and Sustainability	3.11	M
	3.12	L
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

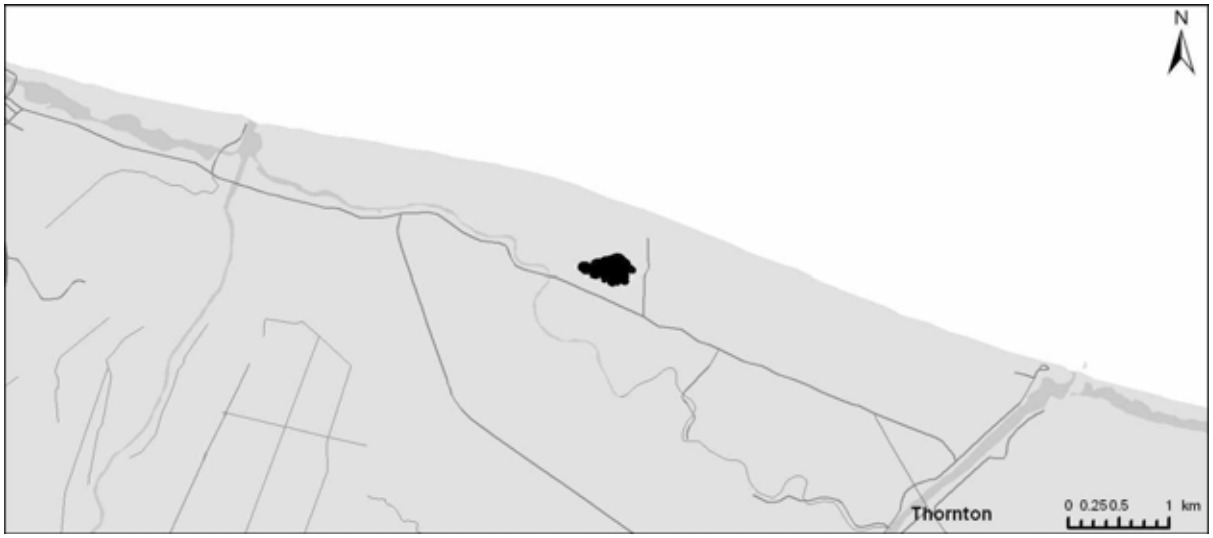
Relative Significance Local

Significance Justification This site, although dominated by exotic plant species, is of local ecological significance as a protective buffer to the less modified naturally significant dunelands to which it is adjacent (Otamarakau-Matata-Whakatane Dunes).

References Gosling and Beadel 2000a.

WAHIEROA WETLAND

Site Number SVHZ-120
Grid Reference (NZMG) 2846835 6359584
Local Authority Whakatane District Council
Ecological District Te Teko
Status Unprotected
Site Area 6.4 ha
Altitudinal Range 2-3 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Palustrine	(Grey willow)/Mercer grass-*Schoenoplectus tabernaemontani* sedge-grassland.	Wetland
Palustrine	Grey willow-(ti kouka) forest.	Wetland
Palustrine	(Grey willow)/raupo reedland.	Wetland
Palustrine	Bamboo forest.	Wetland
Palustrine	Open water.	Wetland
Palustrine	Grey willow forest. (Gosling 2001)	Wetland

Indigenous Flora No significant species recorded.

Indigenous Fauna Spotless crake (At Risk, Sparse) (Rasch 1989a).

Condition/Pressures Grey willow and bamboo infestations.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	L
Naturalness	3.8	M
Ecological Context	3.9	L
	3.10	L
Viability and Sustainability	3.11	M
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

Significance Justification Although small and dominated by exotic vegetation, this is one of the few remaining examples of freshwater wetland in Te Teko Ecological District (Beadel *et al.* 2003). Habitat for an at risk wetland bird species.

Notes This site was ranked as a Category 3 Natural Heritage Area in Beadel *et al.* 1996b.

References Rasch 1989a; Beadel *et al.* 1996a; Beadel *et al.* 1996b; Gosling 2001; Beadel *et al.* 2003.

ORINI STREAM (PART)[14]

Site Number	SVHZ-121
Grid Reference (NZMG)	2858061 6355469
Local Authority	Whakatane District Council
Ecological District	Te Teko
Status	Unprotected
Site Area	3.1 ha
Altitudinal Range	13-20 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Palustrine	Raupo reedland (raupo abundant, with scattered crack willow, *Carex secta*, *Persicaria decipiens* and local *Bolboschoenus fluviatilis*).	Wetland
Palustrine	Duckweed herbfield (dense cover of duckweed).	Wetland
Palustrine	Open water. (Beadel *et al.* 2003)	Wetland

Indigenous Flora Vegetation has established in the Orini Stream channel when the natural water floor was diverted to an artificial canal. Plant species present include ti kouka, *Schoenoplectus tabernaemontani*, *Coprosma propinqua* subsp. *propinqua* x *C. robusta, Pratia angulata, Eleocharis acuta* and pohuehue (Beadel *et al.* 2003).

Indigenous Fauna Pukeko present. This area contains suitable habitat for spotless crake (Beadel *et al.* 2003), though none have been recorded here.

Condition/Pressures This area is currently grazed. It should be fenced to exclude grazing. The vegetation is predominantly indigenous with a few scattered grey and crack willow (Beadel *et al.* 2003).

[14] Part of Orini Stream occurs outside the 'coastal environment' study area (i.e. further than 1 km inland of MHWS).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	L
Rarity or Distinctive Features	3.2	L
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	L
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	M
Viability and Sustainability	3.11	L
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

Significance Justification Although small, this area is one of the few remaining examples of indigenous wetland vegetation in the Ecological District.

Notes Identified as a Recommended Area for Protection (RAP) in the Te Teko Protected Natural Areas Programme (PNAP) report (Beadel *et al.* 2003).

References Beadel *et al.* 2003.

WHAKATANE ESTUARY

Site Number SVHZ-122
Grid Reference (NZMG) 2860825 6353855
Local Authority Whakatane District Council
Ecological District Te Teko
Status Protected (DOC, Keepa Road Conservation Area and Piripai Wildlife Management Reserve) and unprotected parts
Site Area 150.4 ha
Altitudinal Range 0-12 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Pampas tussockland; *Schoenoplectus pungens* sedgeland; saltmarsh ribbonwood-sea rush shrubland; sea rush tussockland.	Intertidal flat
Estuarine	Saltmarsh ribbonwood/sea rush shrubland.	Intertidal flat
Estuarine	Pampas tussockland (with saltmarsh ribbonwood/sea rush shrubland, *Bolboschoenus caldwellii* sedgeland, *Bolboschoenus fluviatilis-Bolboschoenus medianus* sedgeland, *Schoenoplectus pungens* sedgeland, bachelor's button herbfield); crack willow/tall fescue-pampas grassland and treeland.	Intertidal flat/river flats
Estuarine	Glasswort herbfield.	Intertidal flat
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	Sea rush tussockland; saltmarsh ribbonwood/sea rush-oioi shrubland.	Intertidal flat
Estuarine	Sea rush/arrow grass tussockland; *Bolboschoenus caldwellii*-raupo-saltmarsh ribbonwood-sea rush reed-shrubland; open water.	Intertidal flat
Estuarine	Pasture.	Intertidal flat
Estuarine	Oioi-sea rush sedgeland.	Intertidal flat
Palustrine	Raupo reedland and pasture.	Wetland
Palustrine	*Schoenoplectus pungens* sedgeland; raupo reedland; arrow grass herbfield; bachelor's button herbfield; sea rush/arrow grass tussockland; *Bolboschoenus medianus*-raupo-saltmarsh ribbonwood-sea rush reed-shrubland;	Wetland/river flats

Hydrosystem	Vegetation/Habitat Type	Landform
	Bolboschoenus caldwellii sedgeland; pasture.	
Palustrine	Raupo reedland; crack willow treeland and pasture.	Wetland/river flats
Palustrine	*Juncus articulata-Isolepis cernua* herbfield.	Wetland/river flats
Estuarine/palustrine	Raupo-saltmarsh ribbonwood-sea rush shrub-reedland and mudflats.	Wetland/intertidal flats
Marine	Worm field.	Subtidal channel
Marine	Worm field.	Intertidal flat
Marine	Pipi bed.	Subtidal channel
	(Beadel *et al.* 1996a; Beadel 1999a; Stephen Park, Environment BOP, pers. comm. 2006).	

Indigenous Flora

Bolboschoenus caldwellii is present. This is the only location for this species in the ecological district. This species is considered to be regionally uncommon (Beadel 2006).

Indigenous Fauna

Several threatened bird species have been recorded in the Whakatane Harbour, including: Caspian tern (Acutely Threatened, Nationally Vulnerable), reef heron (Acutely Threatened, Nationally Vulnerable), banded dotterel (Chronically Threatened, Gradual Decline) (Rasch 1989a), banded rail (At Risk, Sparse), North Island fernbird (Matt Bloxham pers. comm. 2006), spotless crake (At Risk, Sparse), NZ dabchick (At Risk, Sparse) and white heron (Acutely Threatened, Nationally Critical) (OSNZ 2006). Royal spoonbills and dabchicks (At Risk, Sparse) are occasionally observed here.

Condition/Pressures

Since the early 1900s about 29 ha of land has been infilled adjacent to the estuary. Harbour works include the construction of the eastern training wall, closure of the Orini Channel, river training devices, rock blasting, and flood protection works, and have been carried out by the Whakatane Harbour Board and Bay of Plenty Catchment Commission and their successors - Environment Bay of Plenty, and Whakatane District Council. Aerial photography from 1944 shows that saltmarsh vegetation was formerly more extensive (Gosling and Beadel 2000b). Currently there are local concentrations of pampas around the estuary margins (Beadel *et al.* 1996a). A marina development is proposed.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	H
	3.4	M
	3.5	M
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	M
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

Significance Justification Very little indigenous vegetation remains in the Te Teko Ecological District and the Whakatane Estuary contains the only sizeable examples of estuarine saltmarsh (Gosling and Beadel 2000b). However these remnants of estuarine vegetation are greatly reduced from their former extent through human disturbance and modification. Three acutely threatened, one chronically threatened, and four at risk bird species have been recorded recently. There is one regionally uncommon plant species present.

References Rasch 1989a; Beadel 1995a; Beadel *et al.* 1996a; Beadel 1999a; Gosling and Beadel 2000b; OSNZ 2006, current study.

7.3 Taneatua Ecological District

There is considerable variation in landform where Taneatua Ecological District adjoins the coast. Most of the coastal strip is a long sandy beach (Ohope Beach) running into a large spit at the eastern end. Much of the formerly extensive dune system has been levelled for residential development. A major estuary system, Ohiwa Harbour, occurs behind the spit. This largely shallow estuary is a post-glacial drowned valley system. West of Ohiwa Harbour, and behind much of Ohope Beach, a system of coastal cliffs extends to meet a series of rugged greywacke headlands in the vicinity of Otarawairere Bay and Kohi Point.

Before the arrival of humans, most of the Ecological District would have been forested. Non-forest vegetation would have been limited to coastal cliffs, dunelands, estuaries, riverbeds, wetlands and areas of secondary vegetation induced by natural fires (e.g. caused by lightning strike) or wind damage to forests. The coastal dune system would have been dominated by native sand-binders such as spinifex and pingao. Mangroves would probably have occurred in Ohiwa Harbour but may not have covered as extensive an area as they do now. The coastal forests would have been dominated by pohutukawa, houpara (*Pseudopanax lessonii*), puriri and kohekohe, with a range of other species present.

The present day vegetation is vastly different. The limited sand dune system which remains is dominated by spinifex sandfield and grassland, and pohuehue-bracken vineland and fernland. In the past, pingao (Chronically Threatened, Gradual Decline), now reduced to only a few plants, would have been common. Ohope Scenic Reserve contains the largest area of coastal forest. Kohi Point has been burnt (probably repeatedly) and is now dominated by secondary forest (dominants include rewarewa, mahoe, houpara and kanuka) with scattered pockets of pohutukawa, mangeao and houpara. The coastal cliffs support windshorn scrub comprising kanuka, whaririki (*Phormium cookianum*) and mingimingi.

A narrow fringe of estuarine wetland vegetation lines the margins of much of Ohiwa Harbour, dominated by sea rush and oioi with local mangroves. There are several more extensive areas of estuarine wetland, notably in Nukuhou estuary and Motuotu Island. Locally there are small freshwater wetlands (comprising manuka and raupo) contiguous with the estuarine wetlands. A few small remnant pockets of pohutukawa forest and treeland occur on the steep hillslopes around the harbour, and secondary forest, scrub and shrubland occurs locally (e.g. Uretara Island). Dominants include kanuka, manuka, rewarewa, kamahi and mamaku (*Cyathea medullaris*).

Ohiwa Harbour is the southern limit of distribution for mangrove communities in New Zealand. *Pimelea tomentosa* (ranked Chronically Threatened, Serious Decline, de Lange *et al.* 2004), occurs at several sites in the coastal zone of this ecological district.

Ohiwa Harbour provides extensive habitat for waders, shorebirds and marsh birds, including acutely threatened species such as white heron and fairy tern that use the area for roosting and feeding outside of their breeding seasons. Forest at Ohope supports highly significant forest bird species such as North Island brown kiwi. North Island kaka are seasonal visitors.

Table 14: Threatened and notable species in Taneatua Ecological District, coastal bioclimatic zone.

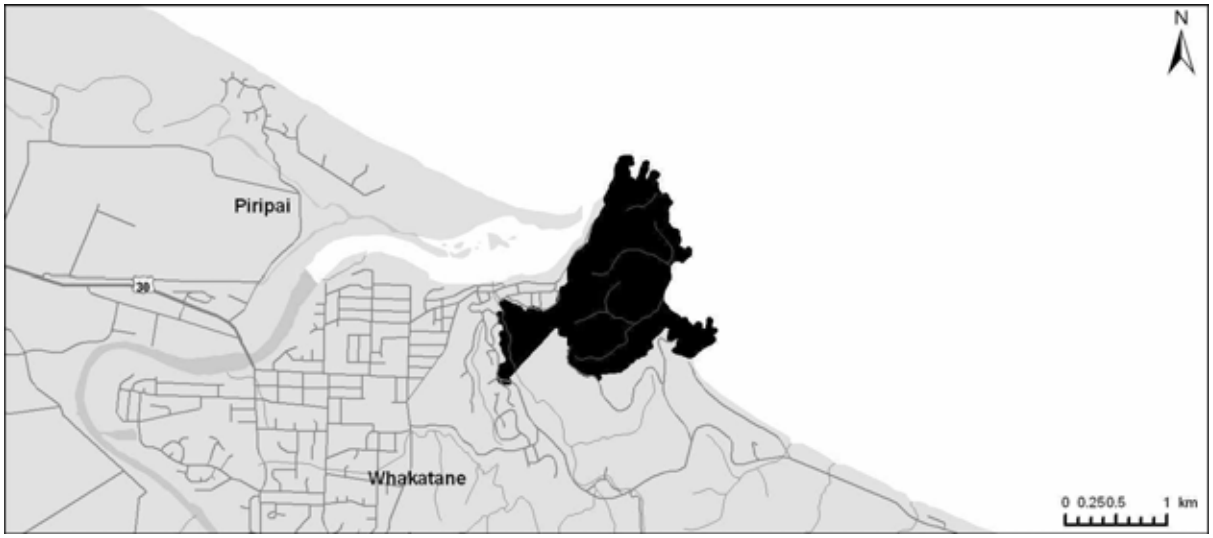
Scientific Name	Common Name	Threat Classification/ Significance
BIRDS		
Acutely Threatened		
Egretta alba modesta	white heron	Nationally Critical
Sterna nereis davisae[1]	fairy tern	Nationally Critical
Nestor meridionalis septentrionalis	North Island kaka	Nationally Endangered
Botaurus poiciloptilus	Australasian bittern	Nationally Endangered
Charadrius obscurus aquilonius	NZ dotterel	Nationally Vulnerable
Sterna caspia	Caspian tern	Nationally Vulnerable
Egretta sacra sacra	reef heron	Nationally Vulnerable
Anarhynchus frontalis	wrybill	Nationally Vulnerable
Acutely Threatened		
Apteryx mantelli	North Island brown kiwi	Serious Decline
Larus bulleri	black-billed gull	Serious Decline
Eudynamys taitensis	long-tailed cuckoo	Gradual Decline
Hemiphaga novaeseelandiae	kereru	Gradual Decline
Sterna striata striata	white-fronted tern	Gradual Decline
Charadrius bicinctus bicinctus	banded dotterel	Gradual Decline
At Risk		
Porzana tabuensis plumbea	spotless crake	Sparse
Porzana pusilla affinis	marsh crake	Sparse
Gallirallus philippensis assimilis	banded rail	Sparse
Bowdleria punctata vealeae	North Island fernbird	Sparse
Other Notable Species		
Limosa lapponica	bar-tailed godwit	Migrant
Calidris canutus	lesser knot	Migrant
VASCULAR PLANTS		
Chronically Threatened		
Pimelea tomentosa		Serious Decline
At Risk		
Peperomia tetraphylla		Sparse
Tetragonia tetragonioides	NZ spinach	Sparse
Korthalsella salicornioides	dwarf mistletoe	Sparse
Other Notable Species		
Austrostipa stipoides		regionally uncommon
Avicennia marina subsp. *australasica*[2]	mangrove	distribution limit

Notes
[1] Reaches its southern limit on the eastern side of the North Island in Ohiwa Harbour.
[2] Attains its southernmost limit of distribution in Ohiwa Harbour.

References
Beadel 1993c ; Owen 1994a; Beadel 1994a; Beadel 1995a; Beadel *et al.* 1999; Wildland Consultants 1999a; OSNZ 2000; Dowding and Moore 2006; NZPCN 2006; OSNZ 2006; Beadel 2006.

KOHI POINT

Site Number SVHZ-123
Grid Reference (NZMG) 2862799 6353577
Local Authority Whakatane District Council
Ecological District Taneatua
Status Protected (DOC, Kohi Point Scenic Reserve) and unprotected parts
Site Area 191.5 ha
Altitudinal Range 0-180 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Rewarewa/mahoe-whauwhaupaku-kanuka forest ⇔ pohutukawa-mangeao forest.	Steep hillslope, gully
Terrestrial	Pohutukawa/houpara forest.	Steep hillslope
Terrestrial	Kanuka-whararikiki-mingimingi flaxland-scrub.	Steep hillslope
Terrestrial	Bracken fernland.	Steep hillslope
Terrestrial	Grassland-herbfield.	Steep hillslope
Terrestrial	(*Carex pumila*) sandfield.	Steep hillslope
Terrestrial	(Pohutukawa) rockland.	Steep hillslope
Terrestrial	Brush wattle forest.	Steep hillslope
Terrestrial	(Rewarewa)/mahoe-whauwhaupaku-(kanuka)-mamaku forest.	Steep hillslope
Terrestrial	Pohutukawa/privet forest (with occasional brush wattle, kanuka, whauwhaupaku, mamaku, kawakawa and infrequent ngaio. Small-leaved privet and cotoneaster occur locally). (Beadel *et al.* 1996a; Beadel *et al.* 1999a; Beadel and Shaw 1988)	Steep hillslope, cliff

Indigenous Flora *Korthalsella salicornioides* (At Risk, Sparse), *Drosera binata, Crassula sieberiana, Juncus pauciflorus, Senecio quadridentatus* (all considered to be regionally uncommon species, Beadel 2006).

Indigenous Fauna Common forest and field birds are present (Beadel *et al.* 1999a). NZ falcon (Acutely Threatened, Nationally Vulnerable) spotted in flight, 2006; North Island brown kiwi (Chronically Threatened, Serious Decline) (Llewellyn 2005); long-tailed cuckoo (Chronically Threatened, Gradual Decline) recorded since 2003 (OSNZ 2006). Grey-faced petrel nesting colony.

Condition/Pressures The steep, western part of the site (outside the reserve) has been heavily modified by human-induced fire, local landslides and weed invasion. There are large areas of privet forest (Beadel *et al.* 1999a).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	H
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	H
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

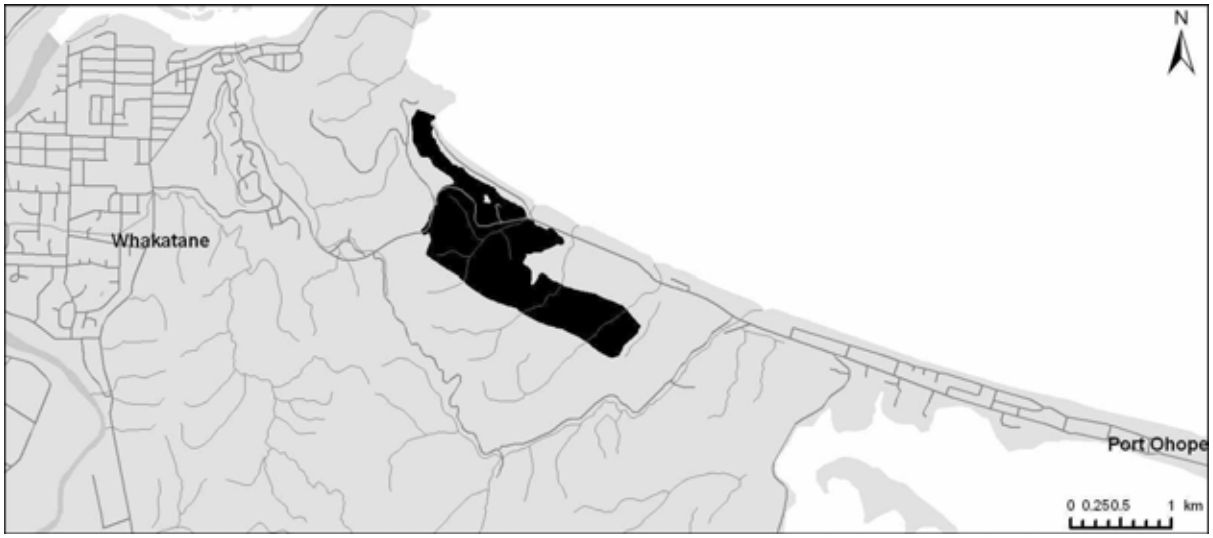
Significance Justification Kohi Point is a regionally significant coastal headland. The vegetation is diverse and supports one at risk plant species and several plant species considered regionally uncommon. North Island brown kiwi, which are chronically threatened, have been recorded in low numbers within this site and are part of a regionally significant population which extends into Ohope Scenic Reserve. The site is also occasionally used by the acutely threatened NZ falcon and the chronically threatened long-tailed cuckoo. It supports one of the few mainland breeding populations of grey-faced petrels in the region.

Notes The unprotected steep land on the western side of the reserve (with Vegetation Types 9 and 10) was selected as a Category 2 RAP (see 'Whakatane Heads') for its landscape values as a scenic backdrop to Whakatane and because it contains a considerable indigenous element that is improving in quality as the succession develops (Beadel *et al.* 1999a).

References Beadel and Shaw 1988; Beadel 1994a; Beadel *et al.* 1996a; Beadel *et al.* 1999a; Llewellyn 2005; OSNZ 2006; Beadel 2006.

OHOPE SCENIC RESERVE AND EXTENSION

Site Number SVHZ-124
Grid Reference (NZMG) 2864341 6351516
Local Authority Whakatane District Council
Ecological District Taneatua
Status Protected (DOC, Ohope Scenic Reserve) and unprotected parts
Site Area 138.4 ha
Altitudinal Range 4-138 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa forest.	Hillslope
Terrestrial	Rewarewa/kanuka/karamu-kohuhu-hangehange-whauwhaupaku-manuka forest and scrub.	Hillslope
Terrestrial	Mamaku-mapou-mahoe-karamu-hangehange forest and scrub.	Hillslope
Terrestrial	Rewarewa-pohutukawa forest.	Hillslope
Terrestrial	Rewarewa/kanuka forest.	Hillslope
Terrestrial	Rewarewa/kanuka-pohutukawa forest.	Hillslope
Terrestrial	Pohutukawa forest.	Hillslope
Palustrine	*Carex geminata* sedgeland. (Beadel *et al.* 1999a)	Wetland

Indigenous Flora *Pimelea tomentosa* (Chronically Threatened, Serious Decline) is present (Beadel *et al.* 1999a). *Peperomia tetraphylla* (At Risk, Sparse), *Adiantum diaphanum* and *Melicope ternata* are present (considered to be regionally uncommon species, Beadel 2006).

Indigenous Fauna Common forest birds are present (Beadel *et al.* 1999a). Long-tailed cuckoo (Chronically Threatened, Gradual Decline) recorded since 2003 (OSNZ 2006). North Island brown kiwi (Chronically Threatened, Serious Decline) under management by DOC and Environment Bay of Plenty (Llewellyn 2005).

Condition/Pressures This area is under threat of subdivision and clearance for house sites and amenities (e.g. driveways, tennis court). Weeds are common around the margins of this site (e.g. wild ginger), with eucalyptus regeneration following logging of a eucalyptus stand (Beadel *et al.* 1999a).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	H
	3.4	H
	3.5	H
	3.6	N/A
Diversity and Pattern	3.7	H
Naturalness	3.8	H
Ecological Context	3.9	H
	3.10	H
Viability and Sustainability	3.11	H
	3.12	H
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance National

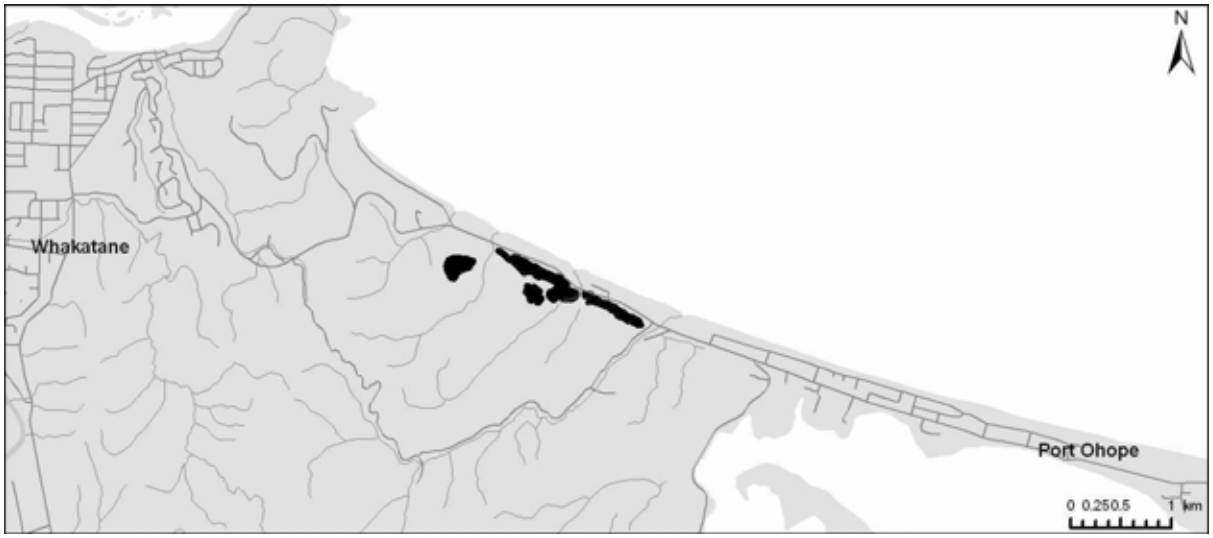
Significance Justification The pohutukawa forest within this site is recognised as being of exceptional botanical conservation value (Shaw 1988b) and has been ranked previously by Environment Bay of Plenty as a nationally significant site for botanical conservation values (Beadel 1994a – see 'SS Ohope'). This site contains the best example of pohutukawa forest in the Taneatua Ecological District, and is also one of the best examples of pohutukawa forest on the New Zealand mainland (Beadel *et al.* 1999a). Major pressures on the site are residential development, pest plants on the margins, and pest animals throughout. One chronically threatened, one at risk, and two regionally uncommon plant species are present, as well as two chronically threatened bird species.

Notes There are three unprotected areas within this site which are Recommended Areas for Protection (RAPs) in the Taneatua Ecological District Protected Natural Areas Programme report (Beadel *et al.* 1999a) - see 'West End', 'Pohutukawa Remnant' and 'Ohope Scenic Reserve Extension'.

References Beadel and Shaw 1988; Shaw 1988b; Beadel 1994; Beadel 1995; Beadel *et al.* 1999a; Llewellyn 2005; OSNZ 2006.

OHOPE POHUTUKAWA REMNANTS

Site Number SVHZ-125
Grid Reference (NZMG) 2865387 6351330
Local Authority Whakatane District Council
Ecological District Taneatua
Status Unprotected
Site Area 15.3 ha
Altitudinal Range 17-121 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa-(radiata pine) forest. (Current study)	Steep hillslope and cliff

Indigenous Flora No significant species recorded.

Indigenous Fauna No significant species recorded.

Condition/Pressures The pohutukawa forest understorey includes hangehange, mahoe, fivefinger, rangiora and mapou. The pohutukawa forest type also includes minor areas of manuka-*Machaerina sinclairii*-whararikiri-koromiko shrubland, mamaku forest; rewarewa/kanuka/karamu-kohuhu-hangehange-fivefinger-mamaku forest and scrub; mamaku-mapou-mahoe-karamu-hangehange forest and scrub; rewarewa-pohutukawa forest and rewarewa/kanuka forest (Wildland Consultants 2002c).

The site is currently heavily infested with wild ginger, and further encroachment of garden plants are a threat, especially along the northern edge.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	L
	3.3	L
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	L
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	L
	3.12	H
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

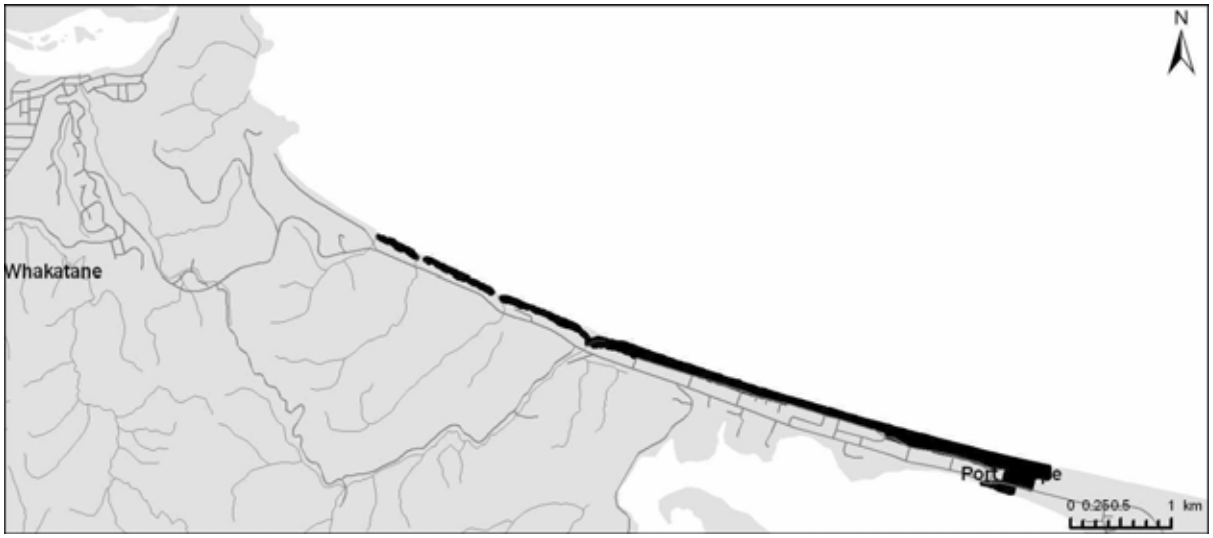
Significance Justification This site is of local significance in augmenting and buffering the nearby Ohope Scenic Reserve, which contains one of the best mainland NZ examples of pohutukawa forest.

Notes Parts of this site are considered important for erosion control (Wildland Consultants 2002c).

References Wildland Consultants 2002c; current study.

OHOPE DUNES

Site Number SVHZ-126
Grid Reference (NZMG) 2869077 6350299
Local Authority Whakatane District Council
Ecological District Taneatua
Status Unprotected
Site Area 44.0 ha
Altitudinal Range 0-20 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Sandfield.	Sand dune
Terrestrial	Exotic grassland.	Sand dune
Terrestrial	Spinifex sandfield.	Sand dune
Terrestrial	Bracken/pohuehue-sea couch grass-vine-fernland.	Sand dune
Terrestrial	Lupin-(pohuehue) shrubland.	Sand dune
Terrestrial	Pampas/lupin shrubland .	Sand dune
Terrestrial	Sea couch grassland.	Sand dune
	(Beadel 1988b and Beadel *et al.* 1999a)	

Indigenous Flora No significant species recorded.

Indigenous Fauna Banded dotterel (Chronically Threatened, Gradual Decline) use this area.

Condition/Pressures Widespread infestations of lupin, pampas, kikuyu and sea couch, and local infestations of iceplant, wild ginger and fennel (Beadel 1988b). Heavily modified through disturbance of the vegetation cover, weed establishment, and establishment of walking tracks (Beadel *et al.* 1999a).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	L
Rarity or Distinctive Features	3.2	L
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	L
Naturalness	3.8	L
Ecological Context	3.9	M
	3.10	L
Viability and Sustainability	3.11	L
	3.12	L
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

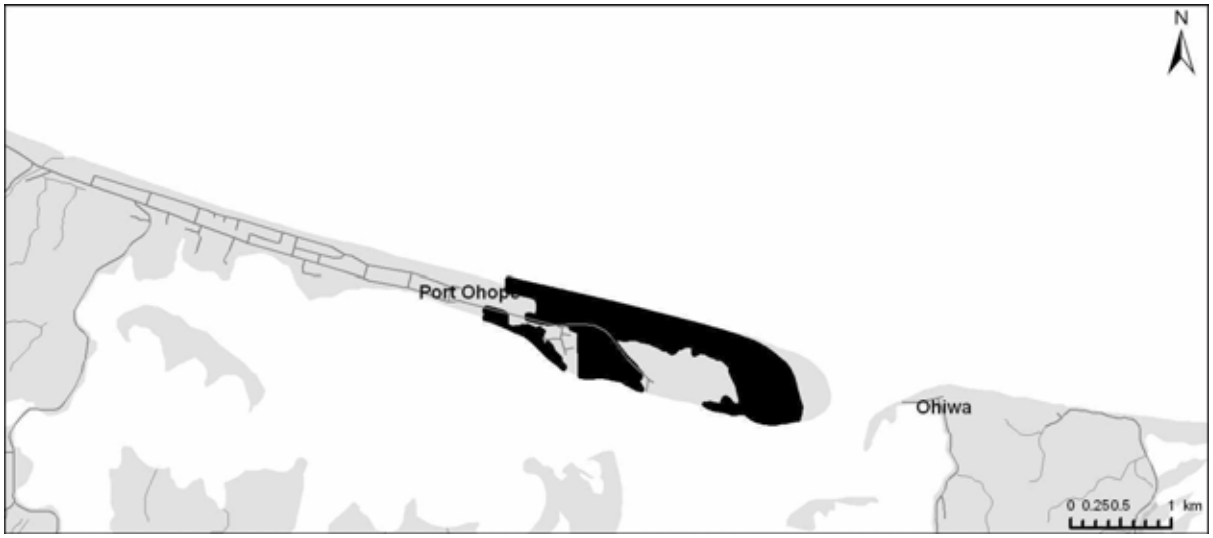
Significance Justification This site is locally significant for sand dune vegetation which, although modified, comprises predominantly indigenous species. One chronically threatened bird species uses this area.

Notes Part of the eastern end of this site was identified as a Category 3 recommended area for protection (RAP) in the Taneatua Ecological District PNA report (Beadel *et al.* 1999a).

References Beadel 1988b; Beadel 1999a.

OHOPE SPIT

Site Number SVHZ-127
Grid Reference (NZMG) 2872754 6349117
Local Authority Whakatane District Council
Ecological District Taneatua
Status Protected (DOC, Port Ohope Recreation Reserve) and unprotected parts
Site Area 133.1 ha
Altitudinal Range 0-20 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Maritime pine treeland.	Dune and beach sands
Terrestrial	Torrey pine treeland.	Dune and beach sands
Terrestrial	Manuka scrub and shrubland.	Dune and beach sands
Palustrine	Manuka scrub and shrubland.	Wetland
Terrestrial	Bracken fernland⇔bracken-pohuehue-sea couch-blackberry fernland⇔sea couch-pohuehue grassland.	Dune and beach sands
Terrestrial	Pampas/sea couch-pohuehue grassland.	Dune and beach sands
Palustrine	*Baumea articulata*/*B. juncea*-sea couch grass-sedgeland⇔raupo reedland.	Wetland
Terrestrial	Spinifex sandfield. (Beadel 1993c)	Dune and beach sands

Indigenous Flora Pingao (Chronically Threatened, Gradual Decline), *Limosella lineata*.

Indigenous Fauna One of two principal spring tide shorebird roosts in Ohiwa Harbour (Owen *et al.* 2006). North Island fernbird (At Risk, Sparse) seen and heard in 1990 (Owen 1994a). NZ dotterel (Acutely Threatened, Nationally Vulnerable) and banded dotterel (Chronically Threatened, Gradual Decline) are present.

Condition/Pressures Vulnerability of significant geological feature to development (Kenny and Hayward 1996). Weeds (including moth plant, wild ginger, pampas, Japanese honeysuckle, blackberry, sea couch, pampas, wilding pines etc) have a major impact on this site. In 1990 many informal walking tracks and organic rubbish dumps were recorded (Owen 1994a). Faces the additional pressure of natural erosion and accretion (Owen *et al.* 2006).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	M
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

Significance Justification Ohope Spit is regarded as the best example of sand dune vegetation in the Taneatua Ecological District (Beadel 1993c). One chronically threatened plant species, one acutely threatened bird species, one chronically threatened bird species, and one at risk bird species have been recorded.

Notes A regionally important example of a late Holocene barrier spit/dune ridge formation (Kenny and Hayward 1996).

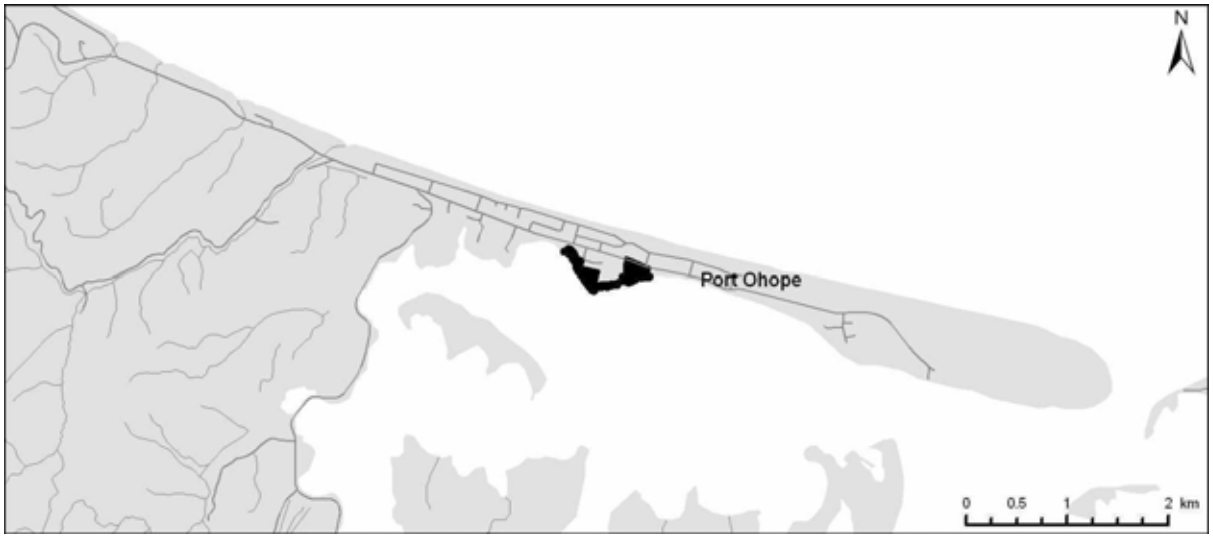
The Port Ohope Wharf area (western side of site) was identified as a Category 3 Recommended Area for Protection (RAP) in the Taneatua Ecological District Protected Natural Areas Programme report (Beadel *et al.* 1999a).

The western end of the site is subject to development pressure.

References Beadel 1993c; Owen 1994a; Kenny and Hayward 1996; Beadel *et al.* 1999a; Owen *et al.*2006.

HARBOUR ROAD

Site Number SVHZ-128
Grid Reference (NZMG) 2869440 6349748
Local Authority Whakatane District Council
Ecological District Taneatua
Status Unprotected
Site Area 8.9 ha
Altitudinal Range 0 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	Oioi-sea rush tussock-sedgeland.	Intertidal flat
Estuarine	Manuka scrub. (Beadel 1993c)	Intertidal flat

Indigenous Flora *Austrostipa stipoides* (considered to be regionally uncommon; Beadel 2006).

Indigenous Fauna North Island fernbird (At Risk, Sparse) reported by resident in 1990 (Owen 1994a).

Condition/Pressures Dumping of garden waste recorded in 1990 (Owen 1994a).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	L
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	L
	3.12	H
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

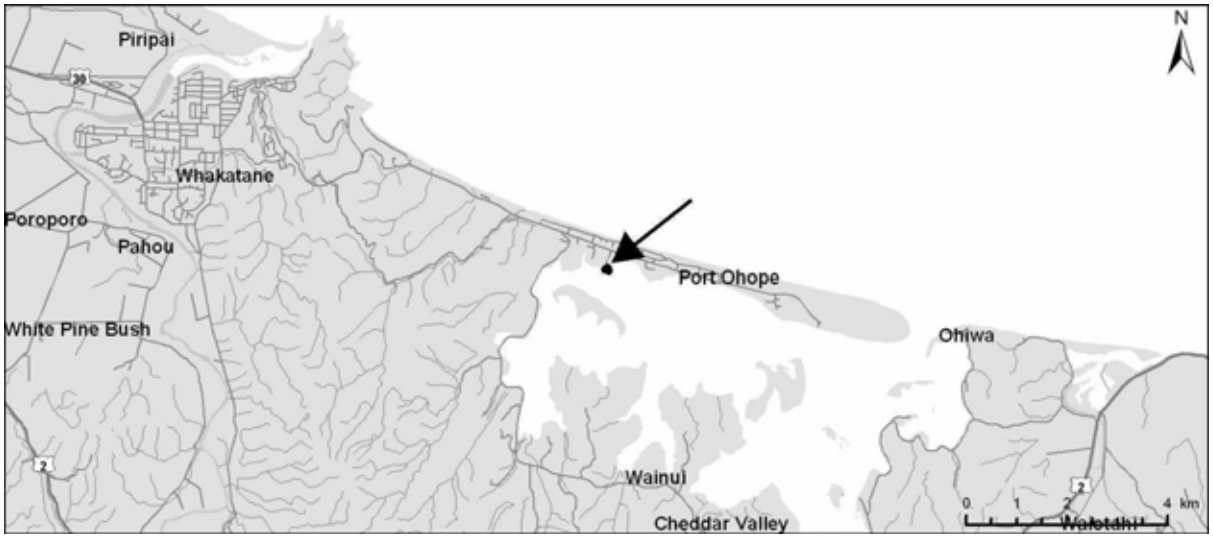
Relative Significance Local

Significance Justification This site comprises a small example of estuarine vegetation typical of Ohiwa Harbour. It is exposed to pressure from residential areas along its landward edge, however it may be habitat of an at risk bird species.

References Beadel 1993c; Owen 1994a.

CLAYTON PLACE

Site Number SVHZ-129
Grid Reference (NZMG) 2868438 6349837
Local Authority Whakatane District Council
Ecological District Taneatua
Status Unprotected
Site Area 0.8 ha
Altitudinal Range 0-20 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa forest. (Beadel *et al.* 1999a)	Steep hillslope

Indigenous Flora A single plant of *Pimelea tomentosa* (Chronically Threatened, Serious Decline) was recorded here in the early 1990s (Beadel *et al.* 1999a).

Indigenous Fauna No specific fauna information.

Condition/Pressures Recorded in 1990 (Owen 1994a): weeds on site - wattle, banana passionfruit and grape.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	L
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	L
	3.5	L
	3.6	L
Diversity and Pattern	3.7	L
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	L
Viability and Sustainability	3.11	L
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

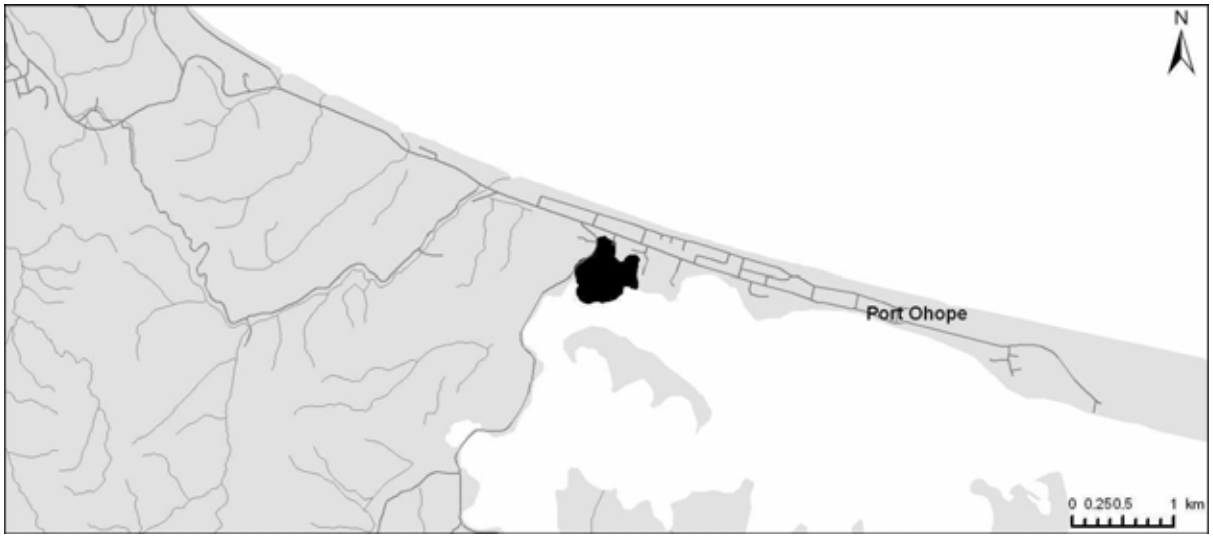
Significance Justification Though small, this area of coastal pohutukawa forest is a remnant of a vegetation type which has been greatly reduced in extent. It provides habitat for a chronically threatened plant species, though only one plant was recorded from here in the early 1990s and may not still be present.

Notes Identified as a Category 4 Recommended Area for Protection (RAP) in the Taneatua Protected Natural Areas Programme report (Beadel *et al.* 1999a).

References Owen 1994a; Beadel *et al.* 1999a.

TAUWHARE

Site Number SVHZ-130
Grid Reference (NZMG) 2867765 6350061
Local Authority Whakatane District Council
Ecological District Taneatua
Status Protected (DOC, Tauwhare Pa Scenic Reserve) and unprotected parts
Site Area 21.6 ha
Altitudinal Range 0-40 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa forest.	Sea cliff hillslope
Terrestrial	Manuka-brush wattle scrub and shrubland.	Hillslope
Terrestrial	Blackberry/*Carex geminata* shrub-sedgeland.	Wetland
Terrestrial	Sea rush tussockland.	Intertidal flat
Terrestrial	Exotic grassland.	Hilltop
	(Beadel *et al.* 1999a)	

Indigenous Flora No significant species recorded.

Indigenous Fauna Common forest birds present, including kotare (Owen, 1994a).

Condition/Pressures Recorded in 1990 (Owen 1994a): weeds on site – brush wattle, pampas, blackberry, Tasmanian blackwood, eliminate dumping of garden waste and roading spoil. Banana passionfruit, wild ginger and walnut are also problem weeds within the site.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	L
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

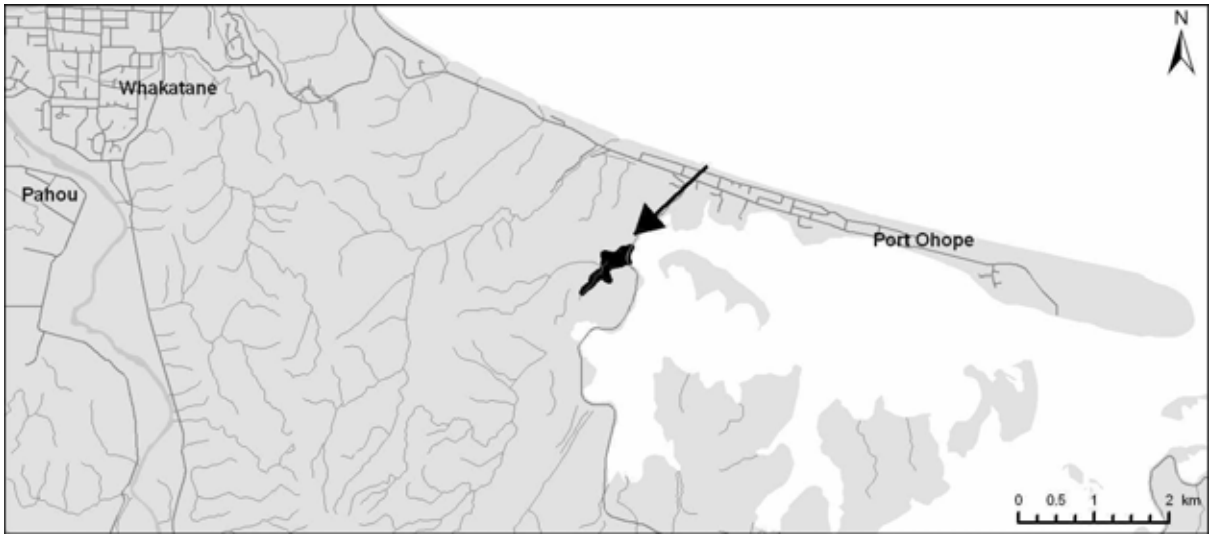
Significance Justification A good quality example of pohutukawa forest on the harbour margin (Beadel *et al.* 1999a), of reasonable size and regular shape, and grading into estuarine vegetation. A wide range of weeds are present.

Notes This site was identified as an area of significant conservation value based on a detailed survey of Ohiwa Harbour vegetation in 1992 (Beadel 1993c), and includes a Category 3 Recommended Area for Protection (RAP) in the Taneatua Ecological District Protected Natural Areas Programme report (Beadel *et al.* 1999a).

References Beadel 1988b; Beadel 1992c; Beadel 1993c; Owen, 1994a; Beadel *et al.* 1999a.

AWARAPUTUNA STREAM

Site Number SVHZ-131
Grid Reference (NZMG) 2866727 6349365
Local Authority Whakatane District Council
Ecological District Taneatua
Status Unprotected
Site Area 8.7 ha
Altitudinal Range 0-40 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Indigenous scrub and shrubland.	Hillslope
Terrestrial/Palustrine	Manuka shrubland.	Hillslope/wetland
Estuarine	Sea rush tussockland.	Intertidal flat
Palustrine	Freshwater wetland vegetation.	Wetland
	(Beadel *et al.* 1999a)	

Indigenous Flora No significant species recorded.

Indigenous Fauna Australasian bittern (Acutely Threatened, Nationally Endangered) and North Island fernbird (At Risk, Sparse) recorded in 1990 (Owen 1994a).

Condition/Pressures Recorded in 1990 (Owen 1994a): rubbish, weeds, pumice in-wash from nearby quarry. This site is cut off from the main harbour by Wainui Road.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	L
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

Significance Justification This site is a small example of estuarine and freshwater vegetation and secondary scrub. Several pressures including weeds and human activity have impacted on the site. Acutely threatened and at risk marshbird species have been recorded from here in the 1990s.

Notes Identified as a Category 4 Recommended Area for Protection (RAP) in the Taneatua Ecological District Protected Natural Areas Programme report (Beadel *et al.* 1999a).

References Beadel *et al.* 1999a; Owen 1994a.

TUNANUI STREAM INLET

Site Number SVHZ-132
Grid Reference (NZMG) 2866326 6348407
Local Authority Whakatane District Council
Ecological District Taneatua
Status Unprotected
Site Area 11.9 ha
Altitudinal Range 0-11 ha

Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	Oioi rushland.	Intertidal flat
Estuarine	Saltmarsh ribbonwood shrubland.	Intertidal flat
Estuarine	*Schoenoplectus pungens* sedgeland.	Intertidal flat
Estuarine	Mudflat.	Intertidal flat
Estuarine	Mangrove scrub.	Intertidal flat
Palustrine	Manuka shrubland. (Beadel 1993c)	Wetland

Indigenous Flora No significant species recorded.

Indigenous Fauna Australasian bittern (Acutely Threatened, Nationally Endangered); North Island fernbird, banded rail (At Risk, Sparse) recorded in 1990 (Owen 1994a). Bittern are likely to be intermittent visitors, not breeding at the site. Neap high tide roost for shorebirds (Owen *et al.* 2006).

Condition/Pressures Reclamation, drainage, stock access, herbicide contamination via road verge spraying. Most of this site is cut off from the main harbour by Wainui Road.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	M
	3.12	H
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

Significance Justification This site comprises a small example of estuarine and wetland vegetation characteristic of Ohiwa Harbour. Several pressures including weeds and human activity have impacted on the site. Acutely threatened and at risk marshbird species have been recorded from here in the 1990s.

Notes Ranked 'High' quality habitat for marshbirds (Owen 1994a).

Identified as a Category 4 Recommended Area for Protection (RAP) in the Taneatua Ecological District Protected Natural Areas Programme report (Beadel *et al.* 1999a).

References Beadel 1993c; Owen 1994a; Beadel *et al.* 1999a; Owen *et al.* 2006.

WAIOTANE STREAM

Site Number SVHZ-133
Grid Reference (NZMG) 2866413 6347462
Local Authority Whakatane District Council
Ecological District Taneatua
Status Unprotected
Site Area 4.9 ha
Altitudinal Range 1-20 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	Manuka scrub and shrubland. (Beadel 1993c)	Wetland

Indigenous Flora No significant species recorded.

Indigenous Fauna Banded rail and North Island fernbird (At Risk, Sparse) present in 1990 (Owen 1994a).

Condition/Pressures Recorded in 1990 (Owen 1994a): stock access, grey willow present. This site is cut off from the main harbour by Wainui Road.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	L
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	L
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	L
	3.12	H
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

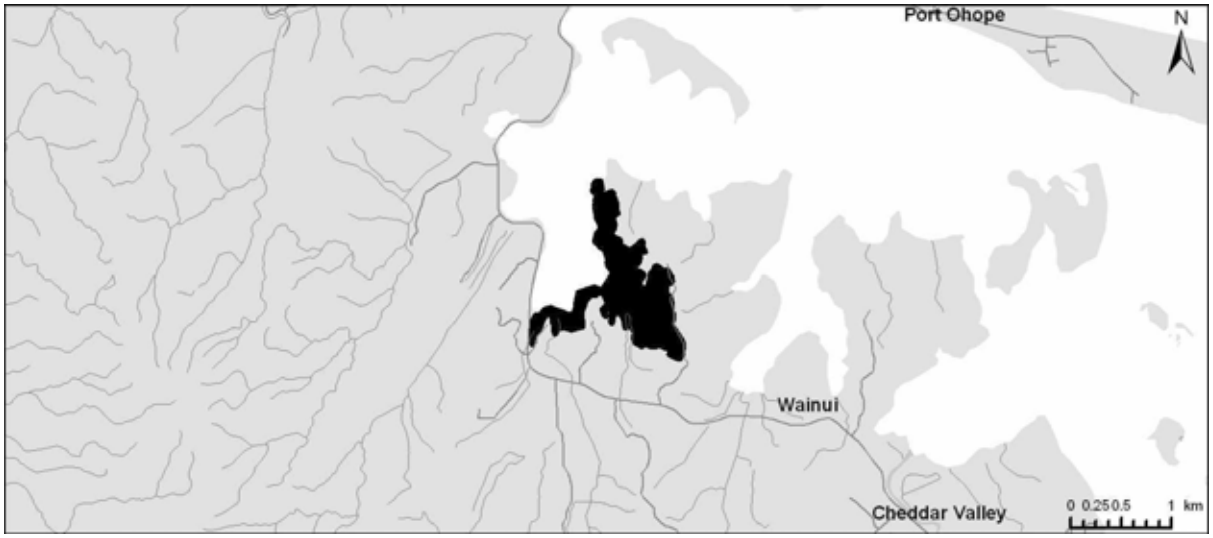
Significance Justification This site is a small example of estuarine and wetland vegetation characteristic of Ohiwa Harbour. Weeds and human activity impacts have been noted in the past. Acutely threatened and at risk marshbird species have been recorded from here in the 1990s.

Notes Identified as a Category 4 Recommended Area for Protection (RAP) in the Taneatua Ecological District Protected Natural Areas Programme report (Beadel *et al.* 1999a).

References Beadel 1993c; Owen 1994a.

WHITIWHITI

Site Number SVHZ-134
Grid Reference (NZMG) 2867586 6346847
Local Authority Whakatane District Council; Opotiki District Council
Ecological District Taneatua
Status Unprotected
Site Area 69.3 ha
Altitudinal Range 0-80 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Palustrine	Grey willow forest.	Wetland
Terrestrial	Pole kahikatea forest.	Alluvial terrace
Terrestrial	Kanuka forest.	Hillslope
Terrestrial	Rewarewa/kamahi-kanuka-mamaku forest.	Hillslope
Estuarine	Open water.	Intertidal flat
Terrestrial	Manuka scrub.	Hillslope
Terrestrial	Manuka shrubland.	Wetland
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	Oioi rushland.	Intertidal flat
Estuarine	*Schoenoplectus pungens* sedgeland.	Intertidal flat
Palustrine	Raupo reedland. (Beadel *et al.* 1999a)	Wetland

Indigenous Flora Black beech is present (Beadel *et al.* 1999a).

Indigenous Fauna Banded rail and North Island fernbird (At Risk, Sparse) were recorded in 1990 (Owen 1994a).

Condition/Pressures Stock access, pampas, blackberry and mature pines present, possible illegal reclamation (Owen 1994a). Beadel *et al.* (1999a) noted severe grazing and minor drainage in wetlands.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	M
	3.5	M
	3.6	M
Diversity and Pattern	3.7	H
Naturalness	3.8	H
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	M
	3.12	H
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

Significance Justification Relatively good quality representative examples of contiguous estuarine and freshwater wetlands and hillslope vegetation. Examples of such sequences are uncommon in the Taneatua Ecological District (Beadel *et al.* 1999a). Two at risk bird species recorded in the 1990s, and size of this site makes it likely that they have persisted here.

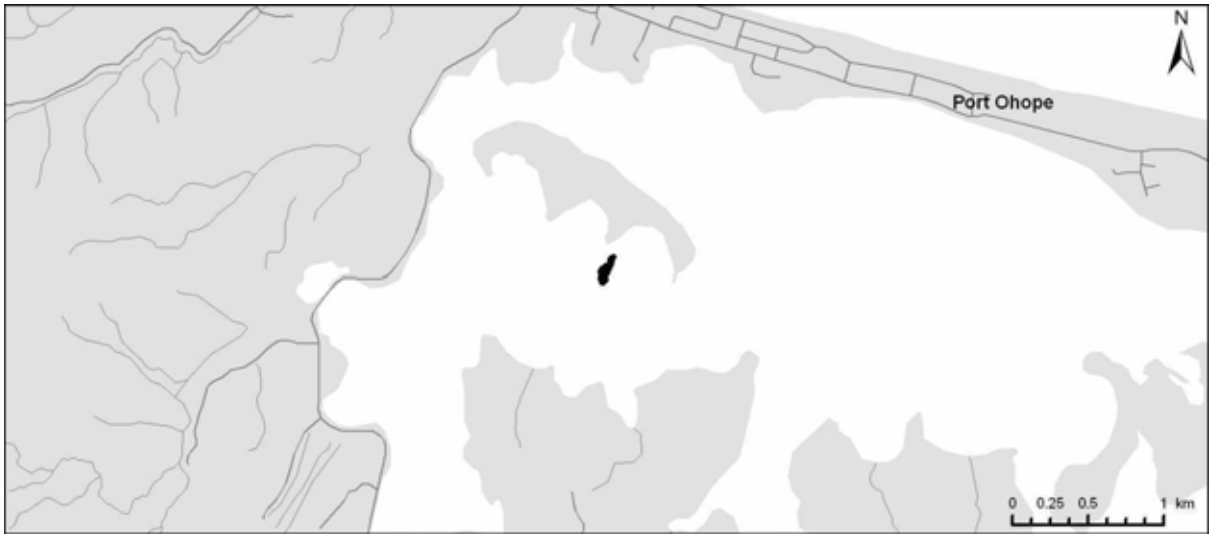
Notes Identified as a Category 1 Recommended Area for Protection (RAP) in the Taneatua Ecological District Protected Natural Areas report (Beadel *et al.* 1999a). Some estuarine areas in this site were ranked as 'High' quality habitat for marshbirds (Owen 1994a).

Part of this site is protected under a Land Improvement Agreement on the McKay property (Beadel *et al.* 1999a).

References Beadel 1993d; Owen 1994a; Beadel *et al.* 1999a; Wildland Consultants 1999a.

ISLETS NEAR OHAKANA ISLAND (UNNAMED)

Site Number SVHZ-135
Grid Reference (NZMG) 2868233 6348565
Local Authority Whakatane District Council
Ecological District Taneatua
Status Unprotected
Site Area 0.4 ha
Altitudinal Range 0 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa forest. (Beadel *et al.* 1999a)	Hillslope; cliff

Indigenous Flora Horokaka (native iceplant; *Disphyma australe*) is common on the steep sides of the islets (Beadel *et al.* 1999a).

Indigenous Fauna No specific information.

Condition/Pressures No information.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	L
	3.3	M
	3.4	M
	3.5	L
	3.6	N/A
Diversity and Pattern	3.7	L
Naturalness	3.8	H
Ecological Context	3.9	H
	3.10	L
Viability and Sustainability	3.11	L
	3.12	H
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

Significance Justification These islets contain small but locally significant examples of pohutukawa on harbour margins. The understorey on these islets is in good condition (Beadel *et al.* 1999a). Unmodified coastal forest is severely depleted in the Taneatua Ecological District.

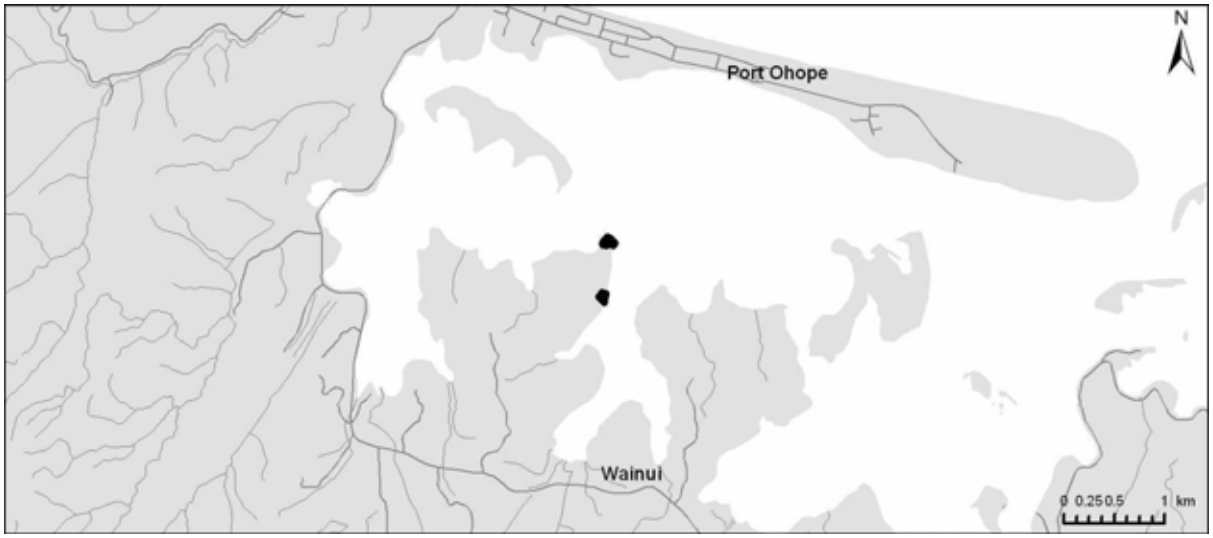
Notes This site was identified as an area of significant conservation value based on a detailed survey of Ohiwa Harbour vegetation in 1992 (Beadel 1993c).

Identified as a Category 3 Recommended Area for Protection (RAP) in the Taneatua Ecological District Protected Natural Areas Programme report (Beadel *et al.* 1999a).

References Beadel 1993c; Beadel *et al.* 1999a.

PAPAROA PA HISTORIC RESERVE AND SURROUNDS

Site Number SVHZ-136
Grid Reference (NZMG) 2869160 6347795
Local Authority Whakatane District Council
Ecological District Taneatua
Status Protected (DOC, Paparoa Pa Historic Reserve).
Site Area 1.6 ha
Altitudinal Range 0-20 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa-(kanuka)-(brush wattle) forest. (Beadel 1995a)	Cliff, steep hillslope

Indigenous Flora No unusual species noted.

Indigenous Fauna Common field birds.

Condition/Pressures Not known.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	L
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	L
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	L
Viability and Sustainability	3.11	L
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

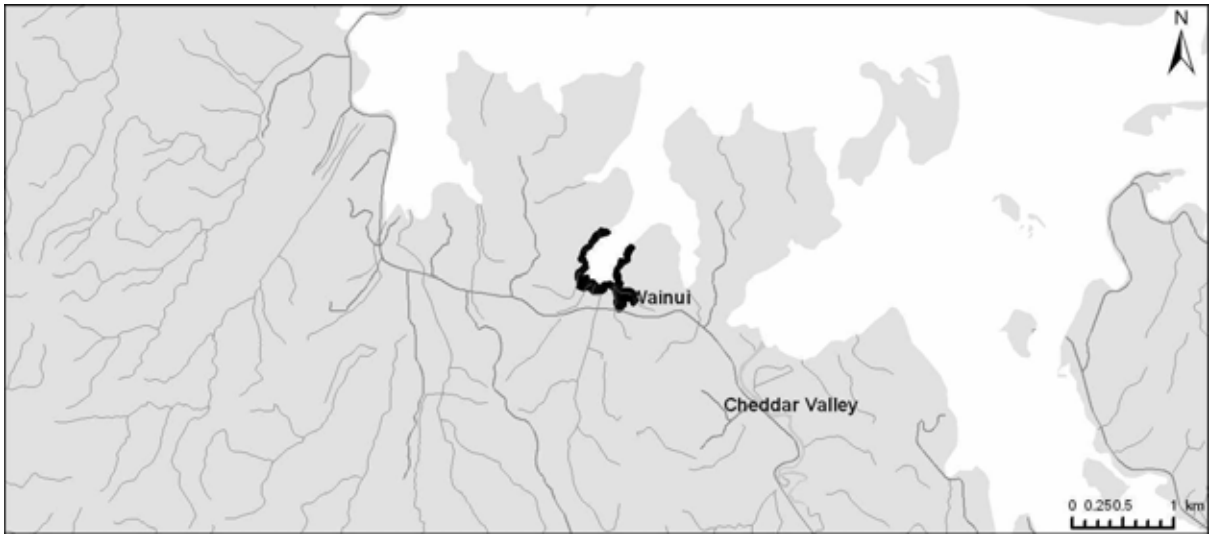
Significance Justification Small patches of pohutukawa forest in good condition. This is a coastal vegetation type that has been severely depleted in extent.

Notes This site has a 'moderate' botanical conservation rank in Beadel (1995a). Two pa sites are present.

References Beadel 1995a, Wildland Consultants 1999a.

WAINUI WETLAND

Site Number SVHZ-137
Grid Reference (NZMG) 2868888 6345865
Local Authority Whakatane District Council
Ecological District Taneatua
Status Unprotected
Site Area 6.6 ha
Altitudinal Range 0-20 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	*Schoenoplectus pungens* sedgeland.	Intertidal flat
Palustrine	Grey willow forest.	Wetland
Palustrine	Raupo reedland.	Wetland
Palustrine	Freshwater wetland vegetation.	Wetland
Terrestrial	Indigenous forest and shrubland.	Alluvial plain
Terrestrial	Estuary margin vegetation. (Beadel 1993c)	Alluvial plain

Indigenous Flora No significant species recorded.

Indigenous Fauna Banded rail, spotless crake and North Island fernbird (At Risk, Sparse) recorded in 1990 (Owen 1994a). Spotless crake have been recorded on two occasions in recent visits by Matt Bloxham (pers. comm. 2006). A neap high tide roost site of importance for shorebirds (Owen *et al.* 2006).

Condition/Pressures The freshwater wetland extent has increased over the past few years following a lapse in maintenance of farm drains, however there has also been progressive infilling on the western side since the marshbird survey in 1990. Stock have only recently been excluded from the wetland so vegetation is degraded in parts with pugged soils (Matt Bloxham pers. comm. 2006).

Ed Reid is planning to poison willows and replant the margins of the freshwater wetland on Ed Reid's property (Matt Bloxham pers. comm. 2006).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	L
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

Significance Justification Wainui Wetland is a small, irregularly shaped example of estuarine and freshwater wetland vegetation. Parts are heavily modified by human activity. Three at risk bird species are known from here, one of which has been recorded during recent visits.

Notes Identified as a Category 4 Recommended Area for Protection (RAP) in the Taneatua Ecological District Protected Natural Areas Programme report (Beadel *et al.* 1999a).

References Beadel 1993c; Beadel *et al.* 1999a; Owen 1994a; Wildland Consultants 1999a; Owen *et al.* 2006.

WILLIAMS WETLAND (PART)[15]

Site Number SVHZ-138
Grid Reference (NZMG) 2868186 6345245
Local Authority Whakatane District Council
Ecological District Taneatua
Status Unprotected
Site Area 3.4 ha
Altitudinal Range 20-40 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Palustrine	(Grey willow)-(ti kouka)/manuka-raupo-harakeke/swamp millet scrub and shrubland.	Wetland
Terrestrial	Kanuka-mamaku forest (with local rewarewa, pohutukawa, kahikatea, kamahi, mangeao, manuka, rimu, mapou and black wattle). (Beadel *et al.* 1999a)	Hillslope

Indigenous Flora No significant species recorded.

Indigenous Fauna North Island fernbird (At Risk, Sparse) and pukeko occur in the wetland (Beadel *et al.* 1999a).

Condition/Pressures This wetland has been invaded by grey willow. The surrounding hillslope has been cleared for farming, however small examples of secondary indigenous vegetation have developed on some of the hillslopes adjacent to the wetland. Grazing and trampling are ongoing threats. A duck pond has been created by the construction of a dam which bisects the wetland (Beadel *et al.* 1999a).

[15] Part of Williams Wetland occurs outside the 'coastal environment' study area (i.e. further than 1 km inland of MHWS).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	L
	3.6	H
Diversity and Pattern	3.7	L
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	M
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

Significance Justification This site provides an example of wetland vegetation and secondary scrub. Both these habitats are modified by adventive plants. One at risk bird species has been recorded from here.

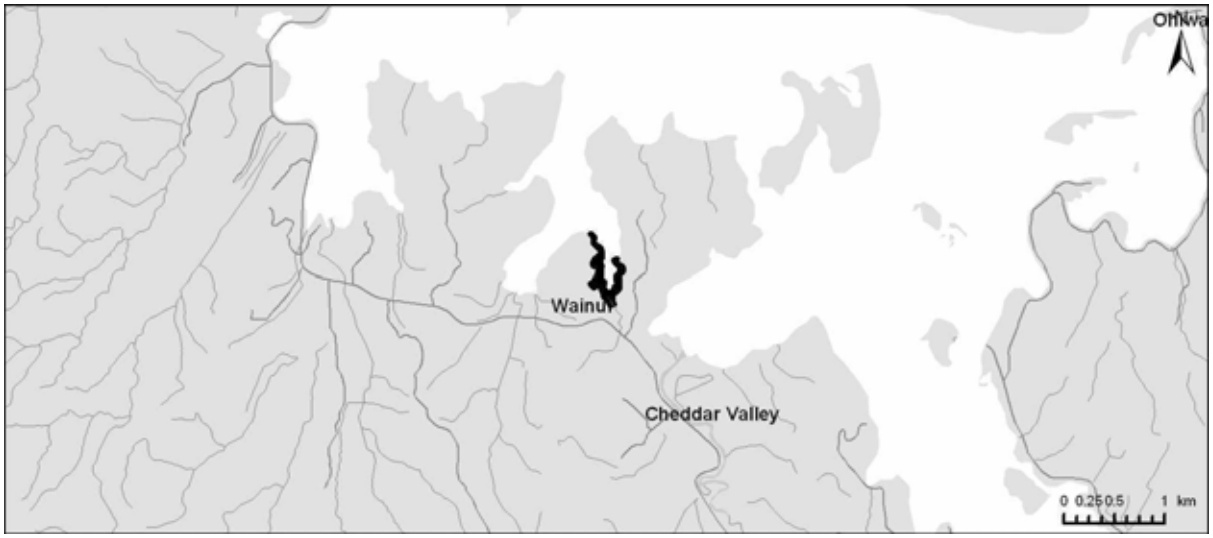
Notes Identified as a Category 3 Recommended Area for Protection (RAP) in the Taneatua Ecological District Protected Natural Areas Programme report, on the basis of its wildlife habitat values (Beadel *et al.* 1999a).

SSWI Site No. 4 'Hiwarau Swamp', of 'potential' rank (Rasch 1989b).

References Rasch 1989b; Beadel *et al.* 1999a.

OUAKI CREEK WETLANDS

Site Number SVHZ-139
Grid Reference (NZMG) 2869645 6345987
Local Authority Whakatane District Council
Ecological District Taneatua
Status Unprotected
Site Area 4.6 ha
Altitudinal Range 0-20 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	*Schoenoplectus pungens* sedgeland.	Intertidal flat
Estuarine	Mangrove mudflat.	Intertidal flat
Estuarine	Mudflat.	Intertidal flat
Palustrine	Manuka scrub.	Wetland
Palustrine	Freshwater wetland vegetation. (Beadel 1993c)	Wetland

Indigenous Flora *Sparganium subglobosum* is known to occur in freshwater wetland vegetation at this site. This is a species considered to be regionally uncommon in the Bay of Plenty (Beadel 2006).

Indigenous Fauna Australasian bittern (Acutely Threatened, Nationally Endangered); banded rail, North Island fernbird (At Risk, Sparse) recorded in 1990 (Owen 1994a).

Condition/Pressures Recorded in 1990 (Owen 1994a): stock access, pasture drainage and run-off.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	L
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

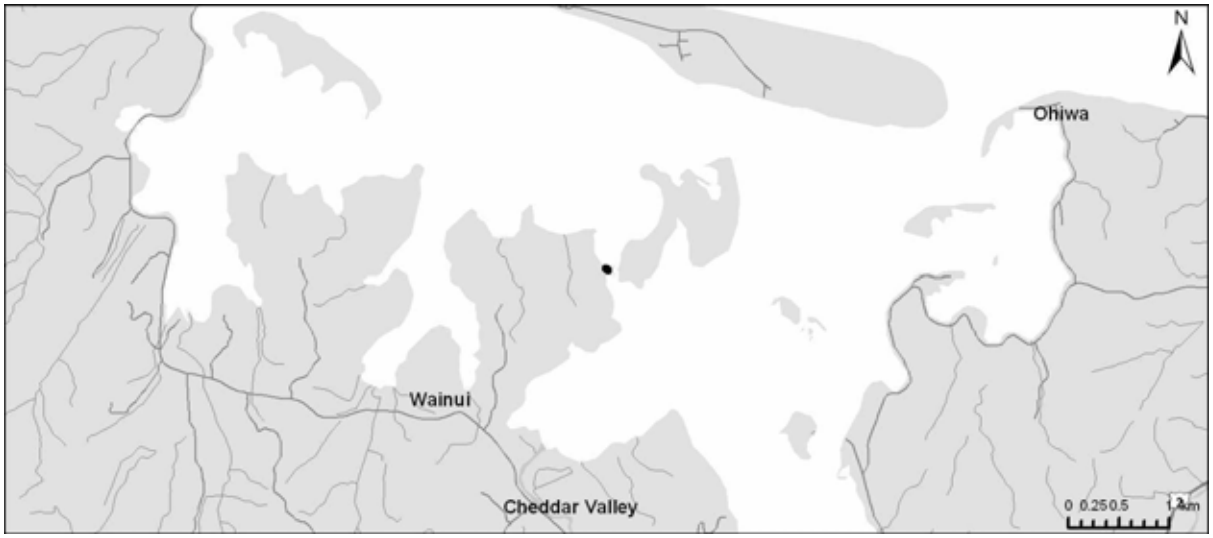
Relative Significance Local

Significance Justification The Ouaki Creek Wetlands are small and typical of estuarine and palustrine vegetation around Ohiwa Harbour. One regionally uncommon plant species is known from here, and there are past records of one acutely threatened and one at risk marshbird species.

References Beadel 1993c; Owen 1994a.

TORITORI

Site Number	SVHZ-140
Grid Reference (NZMG)	2871060 6346992
Local Authority	Whakatane District Council
Ecological District	Taneatua
Status	Protected (Environment Bay of Plenty Land Improvement Agreement)
Site Area	0.2 ha
Altitudinal Range	0-2 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa forest. (Beadel *et al.* 1999a)	Hillslope

Indigenous Flora A single plant of *Pimelea tomentosa* (Chronically Threatened, Serious Decline) was recorded here in the early 1990s (Beadel *et al.* 1999a).

Indigenous Fauna No specific fauna information is available.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	L
Rarity or Distinctive Features	3.2	M
	3.3	L
	3.4	L
	3.5	L
	3.6	L
Diversity and Pattern	3.7	L
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	L
Viability and Sustainability	3.11	L
	3.12	L
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

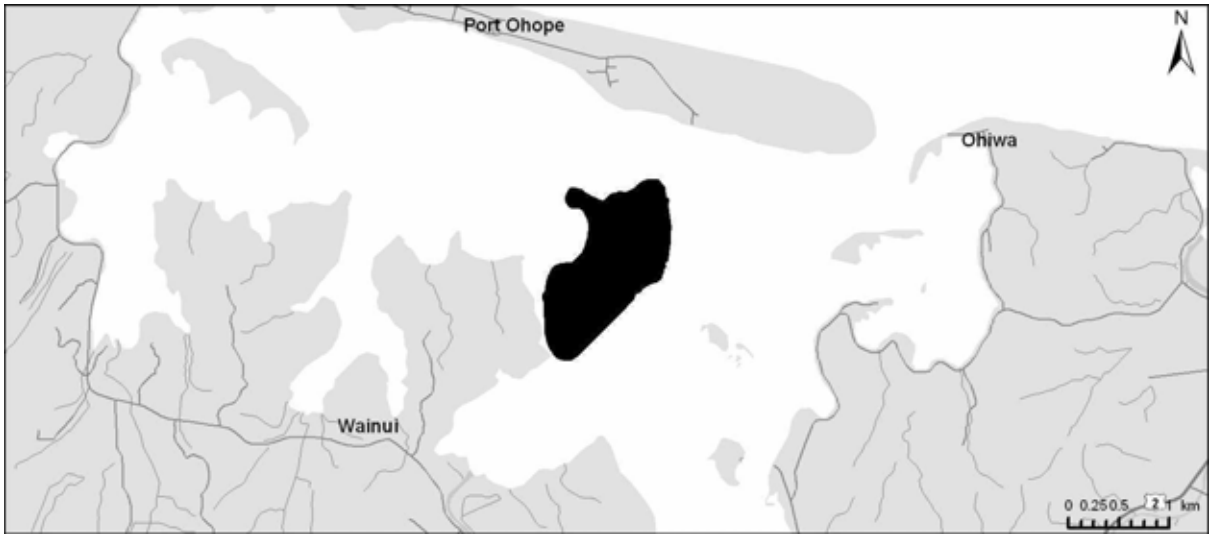
Significance Justification While very small in area, one individual of a chronically threatened plant species has been recorded here.

Notes Identified as a Category 4 Recommended Area for Protection (RAP) in the Taneatua Ecological District Protected Natural Areas Programme report (Beadel *et al.* 1999a).

References Beadel 1993c; Beadel *et al.* 1999a; Wildland Consultants 1999a.

URETARA ISLAND

Site Number SVHZ-141
Grid Reference (NZMG) 2871778 6347298
Local Authority Whakatane District Council
Ecological District Taneatua
Status Protected (DOC, Uretara Island Scenic Reserve) and unprotected parts
Site Area 122.4 ha
Altitudinal Range 0-20 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Kanuka forest.	
Terrestrial	Rewarewa/kanuka forest.	
Terrestrial	Pohutukawa forest (very small areas).	
Terrestrial	Black wattle forest.	
Terrestrial	Brush wattle scrub.	
Terrestrial	Brush wattle-gorse-manuka-bracken scrub and shrubland.	
Palustrine	Raupo reedland.	
Terrestrial	Grassland-herbfield (dominated by adventive species, minor area).	
Terrestrial/Palustrine	Manuka scrub.	
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	Mangrove scrub and shrubland.	Intertidal flat
Estuarine	Mangrove mudflat.	Intertidal flat
Estuarine	Open water.	Intertidal flat
	(Beadel and Shaw 1988)	

Indigenous Flora

Pimelea tomentosa (Chronically Threatened, Serious Decline) is present in the reserve. *Austrostipa stipoides* reaches its southern limit on the eastern side of the North Island in Ohiwa Harbour (Beadel 1993c).

Mangroves attain their southernmost limit of distribution in Ohiwa Harbour (Beadel *et al.* 1999a).

Indigenous Fauna

A moderately important roost site for shorebirds (Owen *et al.* 2006), and part of Ohiwa Harbour (SSWI No. 2), an area of outstanding wildlife value. Important bird species include white heron (Acutely Threatened, Nationally

Critical); Australasian bittern (Acutely Threatened, Nationally Endangered); reef heron, Caspian tern (Acutely Threatened, Nationally Vulnerable); banded rail, spotless crake and North Island fernbird (At Risk, Sparse) (Rasch 1989b; Owen 1994a).

Condition/Pressures The vegetation of Uretara Island has been extensively modified by human activity and most of it is secondary. Possums are present, and are controlled on an ongoing basis by the Department of Conservation (Wildland Consultants 1999a). Pest plants are locally common _ black wattle, brush wattle, pampas, and gorse.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	M
	3.5	H
	3.6	M
Diversity and Pattern	3.7	H
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	H
Viability and Sustainability	3.11	H
	3.12	H
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance National

Significance Justification This site contains one of the best examples of mangrove stands in the Ohiwa Harbour (Beadel *et al.* 1999a), and is also very close to the southern limit of distribution of mangroves. One chronically threatened plant species is present. Uretara Island is a nationally significant area for birdlife, providing habitat for five acutely threatened species, three at risk species, and international migratory waders.

Notes The unprotected parts were identified as a Category 1 Recommended Area for Protection (RAP) in the Taneatua Ecological District Protected Natural Areas Programme report (Beadel *et al.* 1999a).

References Beadel 1993c, 1994a, 1995a; Owen 1994a; Beadel and Shaw 1988; Crisp *et al.* 1990; Rasch 1989b; Smale 1993; Wildland Consultants 1999a; Beadel *et al.* 1999a; Owen *et al.* 2006.

HIWARAU (PART)[16]

Site Number	SVHZ-142
Grid Reference (NZMG)	2871223 6344663
Local Authority	Opotiki District Council and Whakatane District Council
Ecological District	Taneatua
Status	Protected (Unnamed Crown Land Stewardship Area) and unprotected parts
Site Area	333.2 ha
Altitudinal Range	0-160 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Broadleaved species-treefern forest.	Hillslope
Palustrine	Grey willow forest.	Wetland
Terrestrial	Kanuka-kamahi-forest.	Hillslope
Terrestrial	Pohutukawa forest.	Hillslope
Terrestrial	Rewarewa/kamahi forest.	Hillslope
Terrestrial	Tawa forest.	Hillslope
Terrestrial	Tawa-puriri-mangeao-kohekohe forest.	Hillslope
Terrestrial	Tawa-mangeao forest.	Hillslope
Terrestrial	Mahoe-koromiko-karamu scrub.	Hillslope
Estuarine	Mangrove scrub and shrubland.	Intertidal flat
Terrestrial, palustrine	Manuka scrub and shrubland.	Hillslope, wetland
Terrestrial	Manuka-bracken shrubland.	Hillslope
Palustrine	Manuka/*Gleichenia dicarpa-Baumea rubiginosa-B. teretifolia* shrubland.	Wetland
Palustrine	Manuka/swamp millet-*Baumea rubiginosa* grass-shrubland.	Wetland
Terrestrial	Rewarewa-ti kouka-mahoe/manuka treefern - shrubland.	Hillslope
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	Saltmarsh ribbonwood shrubland.	Intertidal flat
Estuarine	Oioi-sea rush tussock-sedgeland.	Intertidal flat
Estuarine	Oioi rushland.	Intertidal flat

[16] Part of Hiwarau occurs outside the 'coastal environment' study area (i.e. further than 1 km inland of MHWS).

Hydrosystem	Vegetation/Habitat Type	Landform
Riverine	*Bolboschoenus fluviatilis* sedgeland.	River margins
Palustrine	Raupo reedland.	Wetland
Riverine	Bachelor's button-arrow grass herbfield.	River margins
Palustrine	Swamp millet-*Baumea rubiginosa*-oioi-manuka-swamp coprosma sedgeland.	Wetland
Riverine	Manuka/raupo-*Baumea rubiginosa*-swamp kiokio-swamp millet sedge-reedland.	River margins
Palustrine	Grey willow/raupo-harakeke-manuka/swamp kiokio forest and reed-flaxland.	Wetland
Estuarine	Tidal flats with seaweed and mangrove. (Beadel *et al.* 1999a)	Intertidal flat

Indigenous Flora

Pimelea tomentosa (Chronically Threatened, Serious Decline) occurs at this site. The plant species diversity of this site is relatively high and contains some species which have not been recorded from elsewhere in the Ecological District, or recorded from only a few other sites (Beadel *et al.* 1999a).

Plant species recorded only from this site in the Taneatua Ecological District:

Astelia grandis
Tetraria capillaris
Hierochloe redolens
Schoenus apogon
Leptinella squalida subsp. *squalida* (Beadel *et al.* 1999a)

Sparganium subglobosum and *Drosera binata* are also present. *Sparganium subglobosum* has only been recorded from one other site in the Ecological District, whilst *Drosera binata* is known from only a few sites (Beadel *et al.* 1999a).

Mangroves reach their southern distribution limit as a community in Ohiwa Harbour (Crisp *et al.* 1990).

Indigenous Fauna

Birds include common field and forest species and migratory waders such as lesser knots and godwits.

Part of Ohiwa Harbour (SSWI site); an area of outstanding wildlife value. White heron (Acutely Threatened, Nationally Critical); reef heron, Caspian tern (Acutely Threatened, Nationally Vulnerable) have all been recorded here (Rasch 1989b).

Mangrove communities are important as a nursery for invertebrates and fish, and as feeding sites for birds.

Australasian bittern (Acutely Threatened, Nationally Endangered), banded rail, spotless crake and North Island fernbird (At Risk, Sparse) recorded in 1990 (Owen 1994a). 'Outstanding' habitat rank (Owen 1994a).

Condition/Pressures

Recorded in 1990 (Owen 1994a): stock access, roading spoil dumping, agricultural wastewater discharge, grey willow.

Ongoing threats include siltation and/or eutrophication from farmland runoff (including upstream areas alongside the Nukuhou River) and physical damage to plant communities by recreational users; mangrove aerial roots are

particularly vulnerable to this form of disturbance (Wildland Consultants 1999a).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	H
	3.4	H
	3.5	H
	3.6	M
Diversity and Pattern	3.7	H
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	H
Viability and Sustainability	3.11	H
	3.12	H
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance National

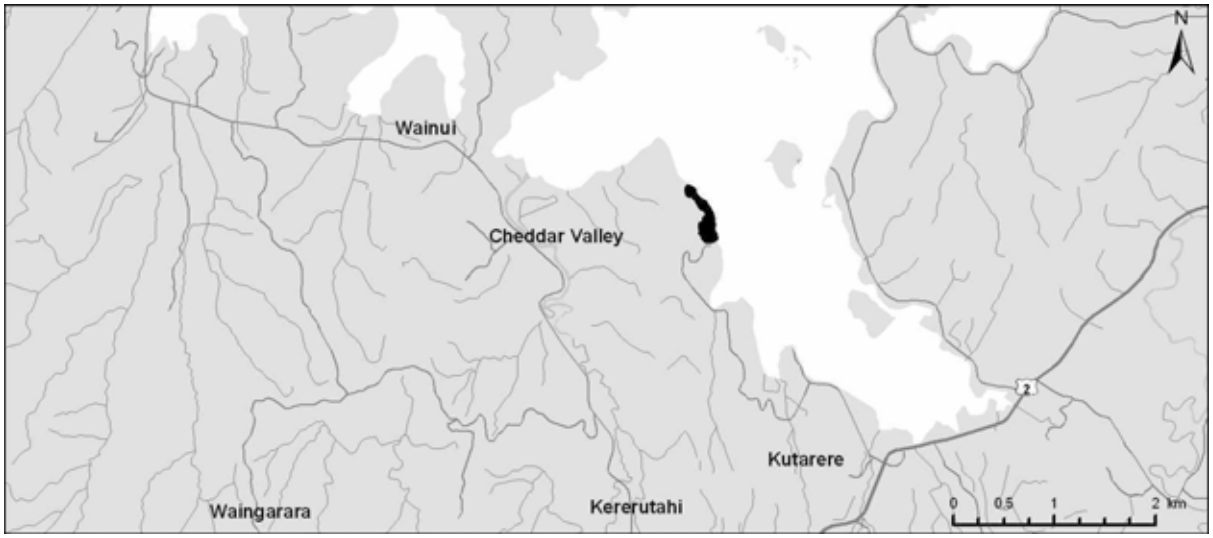
Significance Justification A large estuarine and freshwater wetland contiguous with indigenous forest. It contains some of the best wetland vegetation in Ohiwa Harbour; one of the best quality, large examples of mangrove scrub and shrublands in the harbour, and the best remaining example of wetland manuka scrub and shrubland in the Ecological District. The freshwater wetlands are probably the best remaining examples in the Taneatua Ecological District. The tall forest on the hillslopes is the largest remaining example of its type contiguous with the harbour. It contains some of the only remnants of primary forest (e.g. tawa-puriri-mangeao-kohekohe forest and tawa-puriri-mangeao-pohutukawa forest), apart from pohutukawa forest, adjacent to the harbour (Beadel *et al.* 1999a). Its large size reduces the vulnerability of the site to a suite of pressures common to many natural areas around Ohiwa Harbour. One chronically threatened plant species and several regionally uncommon plant species are found here. One acutely threatened and three at risk marshbird species have been recorded.

Notes Along with Pataua Island, Motuotu Island and Uretara Island, this site contains one of the best examples of mangrove stands in the Ohiwa Harbour (Beadel *et al.* 1999a). Hiwarau (which includes most of the unprotected parts of the present site) was identified as a Category 1 Recommended Area for Protection (RAP) in the Taneatua Ecological District Protected Natural Areas report (Beadel *et al.* 1999a).

References Beadel 1993c; Beadel 1994a; Beadel 1995a; Owen 1994a; Burns and Ogden 1985; Crisp *et al.* 1990; Rasch 1989b, Beadel *et al.* 1999a.

HIWARAU POHUTUKAWA

Site Number SVHZ-143
Grid Reference (NZMG) 2872180 6344800
Local Authority Opotiki District Council
Ecological District Taneatua
Status Unprotected
Site Area 3.5 ha
Altitudinal Range 0-20 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa forest. (Beadel *et al.* 1999a)	Hillslope

Indigenous Flora This site contains some of the largest diameter pohutukawa seen during a botanical survey of the Ohiwa Harbour in 1992/1993 (Beadel *et al.* 1999a).

Indigenous Fauna No specific fauna information.

Condition/Pressures No information.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	L
	3.3	L
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	L
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	L
Viability and Sustainability	3.11	L
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

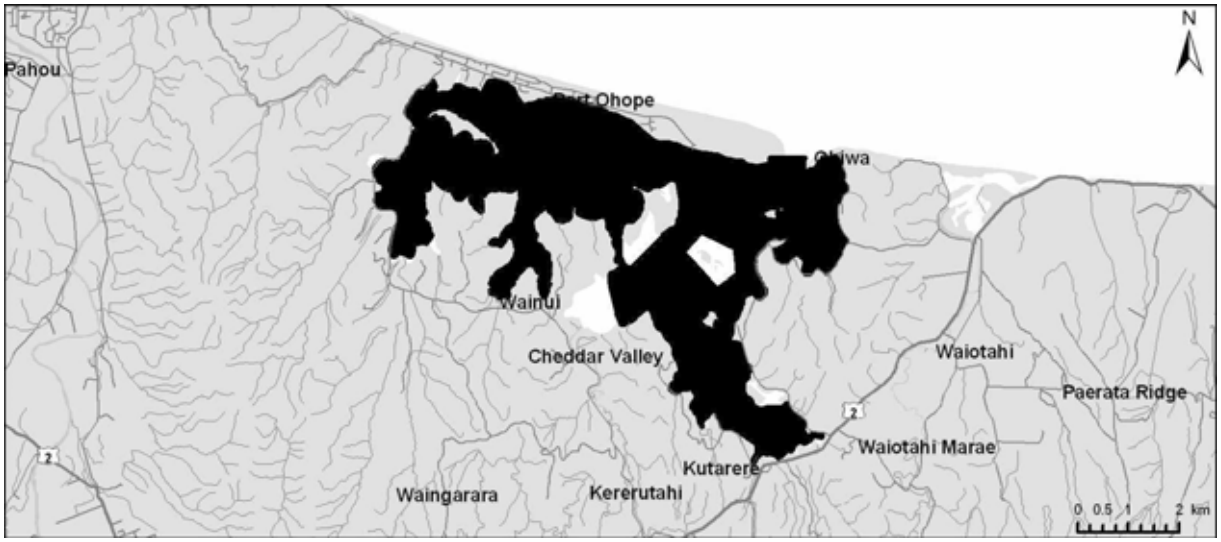
Significance Justification Although small, this site is distinctive for its large diameter pohutukawa, underneath which there is good quality understorey vegetation (Beadel *et al.* 1999a).

Notes Identified as a Category 4 Recommended Area for Protection (RAP) in the Taneatua Ecological District Protected Natural Areas Programme report (Beadel *et al.* 1999a).

References Beadel 1993d; Beadel *et al.*1999a.

OHIWA HARBOUR

Site Number SVHZ-144
Grid Reference (NZMG) 2871375 6347272
Local Authority Whakatane District Council, Opotiki District Council
Ecological District Taneatua
Status Protected (DOC Port Ohope Recreation Reserve, Unnamed Stewardship Areas) and unprotected parts
Site Area 2,387.1 ha
Altitudinal Range 0-27 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	*Bolboschoenus fluviatilis* sedgeland.	Intertidal flat
Estuarine	*Baumea juncea* sedgeland.	Intertidal flat
Estuarine	*Baumea articulata/B. juncea*-sea couch grass sedgeland⇔raupo reedland.	Intertidal flat
Estuarine	Bachelor's button herbfield.	Intertidal flat
Estuarine	*Carex pumila* sandfield.	Intertidal flat
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	Mangrove scrub.	Intertidal flat
Estuarine	Mangrove/sea rush tussock-shrubland.	Intertidal flat
Estuarine	Mangrove scrub and sedgeland.	Intertidal flat
Estuarine	Mangrove sedgeland.	Intertidal flat
Estuarine	Mangrove mudflat.	Intertidal flat
Estuarine	Oioi rushland.	Intertidal flat
Estuarine	Oioi-sea rush tussock-sedgeland.	Intertidal flat
Estuarine	Marsh ribbonwood shrubland.	Intertidal flat
Estuarine	Marsh ribbonwood/oioi shrub-sedgeland.	Intertidal flat
Estuarine	Sea rush-*Baumea juncea*-sea couch-oioi grass-sedge-tussockland.	Intertidal flat
Estuarine	(Sea rush)/*Selliera radicans-Carex pumila-Isolepis cernua*-arrow grass herbfield.	Intertidal flat
Estuarine	Sea couch-pohuehue grassland	Intertidal flat
Estuarine	Sea rush-oioi/*Selliera radicans-Samolus repens* tussockland.	Intertidal flat
Estuarine	*Schoenoplectus pungens* sedgeland.	Intertidal flat
Estuarine	Glasswort herbfield.	Intertidal flat
Estuarine		Intertidal flat

Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	*Samolus repens* herbfield.	Intertidal flat
Estuarine	*Schoenoplectus pungens/Selliera radicans*-sea couch tussockland.	Intertidal and sub-tidal flat
Marine	*Zostera* spp. (seagrass) grassland.	Subtidal channel
Marine	Worm field.	Intertidal flat
Marine	Worm field.	Intertidal flat
Marine	Cockle bed.	Subtidal channel
Marine	Scallop bed.	Subtidal channel
Marine	Pipi bed.	Subtidal channel
Marine	Horse mussel field.	Subtidal channel
	Green-lipped mussel field.	
	(Beadel 1993c; Environment Bay of Plenty 1996; Stephen Park, Environment BOP, pers. comm. 2006; current study).	

Indigenous Flora

Mangroves reach their southernmost limit of distribution nationally within the Ohiwa Harbour.

Indigenous Fauna

Roosting fairy tern (Acutely Threatened, Nationally Critical); NZ dotterel (breeding), wrybill, reef heron, Caspian tern (Acutely Threatened, Nationally Vulnerable); white-fronted tern, banded dotterel (Chronically Threatened, Gradual Decline); breeding North Island fernbird (At Risk, Sparse) recorded recently (OSNZ 2006). A 'top ten' wintering/non-breeding site for NZ and banded dotterel, variable oystercatcher and arctic migrants like godwit (OSNZ 1998, Dowding and Moore 2006).

Condition/Pressures

Historic clearance of vegetation in the harbour catchment, and drainage of harbour catchment wetlands has contributed to increased levels of sedimentation, particularly in low-energy environments of the upper harbour. These processes have manifested in changes to the ecology of the harbour, with mangroves increasing in extent and seagrass decreasing in extent.

The Nukuhou river, which flows into the southern part of the harbour, has the second-lowest water quality of monitored Bay of Plenty rivers, based on parameters including clarity, suspended solids, nutrients and bacteria (Park 2005).

Stock have direct access to many parts of the shoreline (Owen 1994a), resulting in grazing and trampling of shoreline vegetation communities and contributing to the spread of invasive weeds.

Control and eradication efforts in recent years mean that *Spartina alterniflora*, which is a significant weed of intertidal flats, now poses a potential rather than an actual threat.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	H
	3.4	H
	3.5	H
	3.6	H
Diversity and Pattern	3.7	H
Naturalness	3.8	H
Ecological Context	3.9	H
	3.10	H
Viability and Sustainability	3.11	H
	3.12	H
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

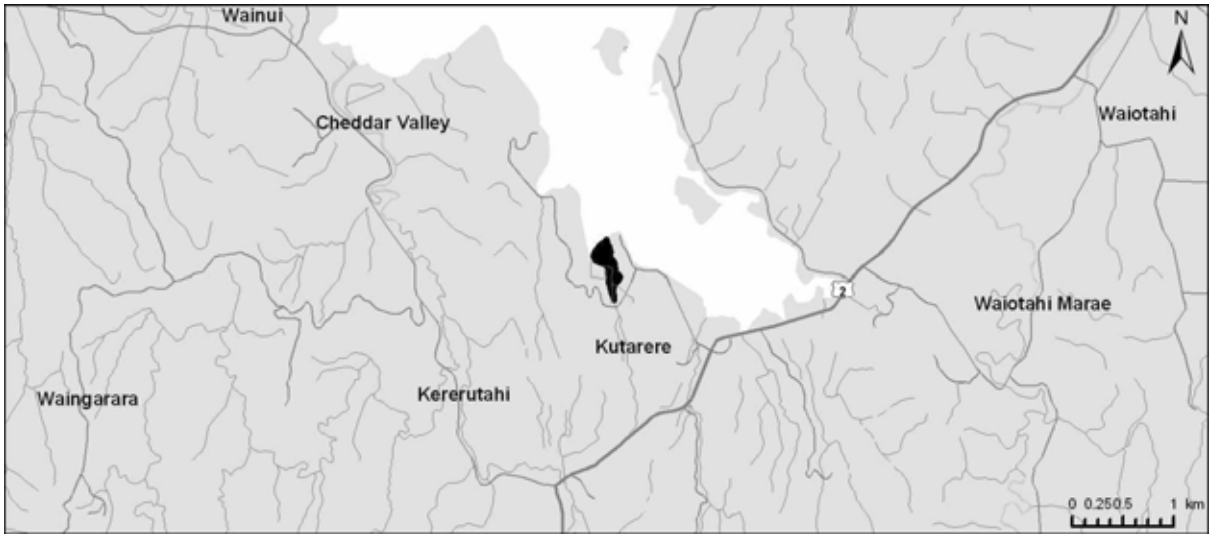
Relative Significance Regional

Significance Justification Ohiwa Harbour contains regionally significant examples of estuarine and marine habitats that are represented on a much larger scale in Tauranga Harbour. A long history of modification and activity in the catchment is reflected in changing patterns of vegetation such as mangrove and seagrass, and variable water quality. Five acutely threatened, two chronically threatened, and one, at risk bird species, as well as a range of international and NZ migratory shorebird species are known to use the harbour.

References Beadel 1993c; Environment Bay of Plenty 1996 (GIS layer: Ohiwa_seagrass 1996_region); Park 2005; Dowding and Moore 2006; OSNZ 2006; current study.

TE AWAWAIROA STREAM

Site Number SVHZ-145
Grid Reference (NZMG) 2872927 6343247
Local Authority Opotiki District Council
Ecological District Taneatua
Status Protected (DOC, Kutarere Recreation Reserve) and unprotected parts
Site Area 5.0 ha
Altitudinal Range 0-20 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	*Schoenoplectus pungens* sedgeland.	Intertidal flat
Estuarine	Mangrove scrub and shrubland.	Intertidal flat
Estuarine	Mangrove mudflat.	Intertidal flat
Estuarine	Sea rush tussockland.	Intertidal flat
Palustrine	*Juncus* spp. tussockland[17]	Wetland
Palustrine	Estuary margin vegetation.	Wetland
Palustrine	Freshwater wetland vegetation. (Beadel 1993c)	Wetland

Indigenous Flora No significant species recorded.

Indigenous Fauna Banded rail, North Island fernbird (At Risk, Sparse) recorded in 1990 (Owen 1994a). Recorded in 1990 (Owen 1994a).

Condition/Pressures Recorded in 1990 (Owen 1994a): stock access, weeds (pampas, grey willow, wattle).

[17] Dominated by rushes, including sea rush, *J. effusus and J. edgariae*.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	M
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

Significance Justification Te Awawairoa Stream has modified estuarine and palustrine vegetation typical of Ohiwa Harbour. Two at risk marshbird species have been recorded here in the past.

References Beadel 1993c; Owen 1994a.

KUTARERE

Site Number SVHZ-146
Grid Reference (NZMG) 2874286 6342603
Local Authority Opotiki District Council
Ecological District Taneatua
Status Unprotected
Site Area 1.8 ha
Altitudinal Range 0-19 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Mangrove scrub and shrubland.	Intertidal flat
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	Open water. (Beadel 1993c)	Intertidal flat

Indigenous Flora This site contains the southernmost mangrove community on the east coast of the North Island (Crisp *et al.* 1990).

Indigenous Fauna Banded rail (At Risk, Sparse) recorded in 1990 (Owen 1994a).

Condition/Pressures Noted in 1990 (Owen 1994a): fish access restricted at Mudflat Creek culvert; road spoil dumping; weeds - wattle, pampas, Japanese honeysuckle.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	H
	3.5	L
	3.6	M
Diversity and Pattern	3.7	L
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	L
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

Significance Justification This site supports the southernmost mangrove community on the east coast of the North Island. This site has been subject to pressures associated with road construction and maintenance. One at risk bird species has been recorded from here.

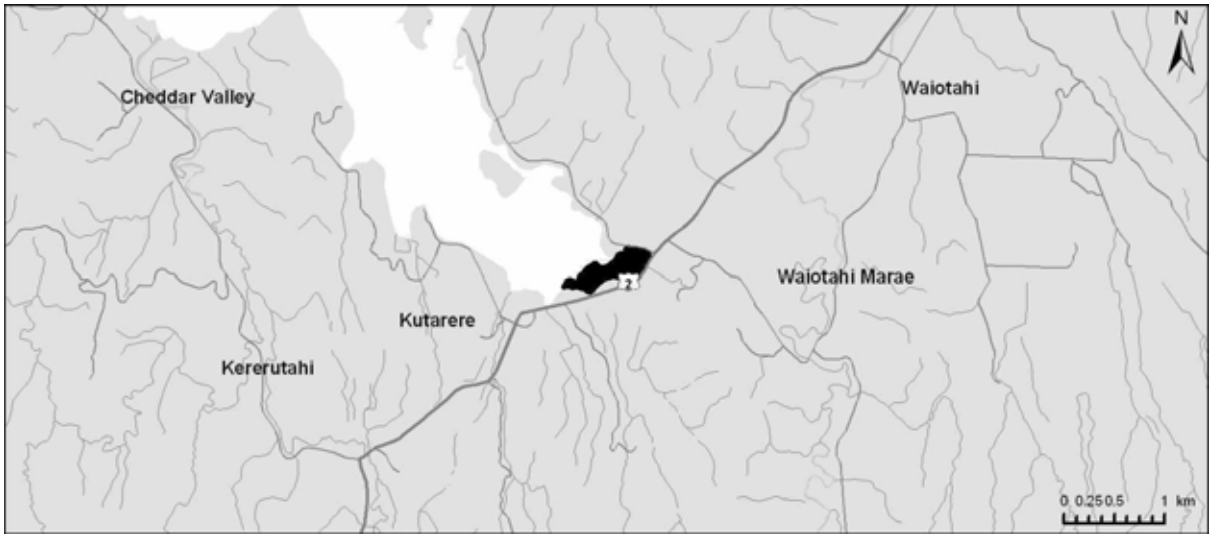
Notes Identified as a Category 2 Recommended Area for Protection (RAP) in the Taneatua Ecological District Protected Natural Areas Programme report (Beadel *et al.* 1999a).

Larger representative examples of Ohiwa Harbour mangrove communities are present at Uretara Island, Hiwarau, Motuotu Island and Pataua Island, and were all ranked as being of national significance by Beadel *et al.* (1999).

References Crisp *et al.* 1990; Beadel 1993c; Owen 1994a; Beadel *et al.* 1999a.

STATE HIGHWAY 2

Site Number SVHZ-147
Grid Reference (NZMG) 2874924 6342919
Local Authority Opotiki District Council
Ecological District Taneatua
Status Unprotected
Site Area 13.7 ha
Altitudinal Range 0-13 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine Palustrine	Sea rush tussockland. *Juncus* spp. tussockland[18] (Beadel 1993c)	`

Indigenous Flora *Bolboschoenus caldwellii* (considered to be regionally uncommon; Beadel 2006) is present.

Indigenous Fauna Banded rail and North Island fernbird (At Risk, Sparse) recorded in 1990 (Owen 1994a).

Condition/Pressures Noted in 1990 (Owen 1994a): stock access; inorganic rubbish dumping; stock access; agricultural run-off.

[18] Dominated by rushes, including sea rush, *J. effusus and J. edgariae*.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	M
	3.3	L
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	L
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	L
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

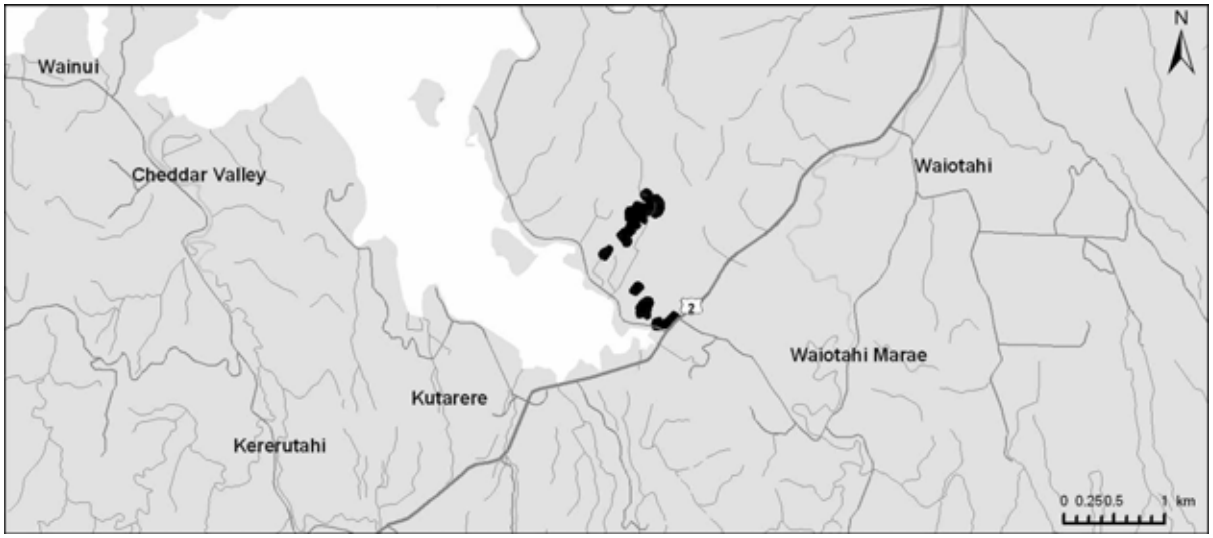
Significance Justification This site is moderate in size and contains typical estuarine and wetland vegetation, but is notable for a current record of a regionally uncommon plant species. There are 1990 records of two at risk marshbird species.

Notes Identified as a Category 4 Recommended Area for Protection (RAP) in the Taneatua Ecological District Protected Natural Areas Programme report (Beadel *et al.* 1999a).

References Beadel 1993c; Owen 1994a; Beadel *et al.* 1999a; Owen 1994a; Wildland Consultants 1999a.

RUATUNA

Site Number SVHZ-148
Grid Reference (NZMG) 2875100 6343883
Local Authority Opotiki District Council
Ecological District Taneatua
Status Unprotected
Site Area 9.3 ha
Altitudinal Range 9-80 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Kahikatea-black beech forest.	Hillslope
Terrestrial	Pole kahikatea forest.	Alluvial terrace
Terrestrial	Kahikatea-pukatea forest.	Hillslope
Terrestrial	Pukatea-tawa-hard beech-puriri forest.	Hillslope
Terrestrial	Puriri-pukatea-tawa forest.	Hillslope
	(Beadel *et al.* 1999a; Beadel 2003)	

Indigenous Flora No rare or threatened species were found during a detailed botanical survey (Beadel 2003), however the occurrence of black beech within the coastal bioclimatic zone is notable.

Indigenous Fauna Kereru (Chronically Threatened, Gradual Decline) use these remnants (Beadel 2003), as well as common forest and field birds.

Condition/Pressures Problem weeds include Japanese honeysuckle, barberry, blackberry, hawthorn, selaginella, black wattle and privet (Beadel 2003). Subdivision and residential development (on what was formerly farmland) are underway between these remnants. Some areas have been fenced and grazing stock have been excluded for over 10 years (Beadel 2003).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	M
	3.5	L
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	M
Viability and Sustainability	3.11	L
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

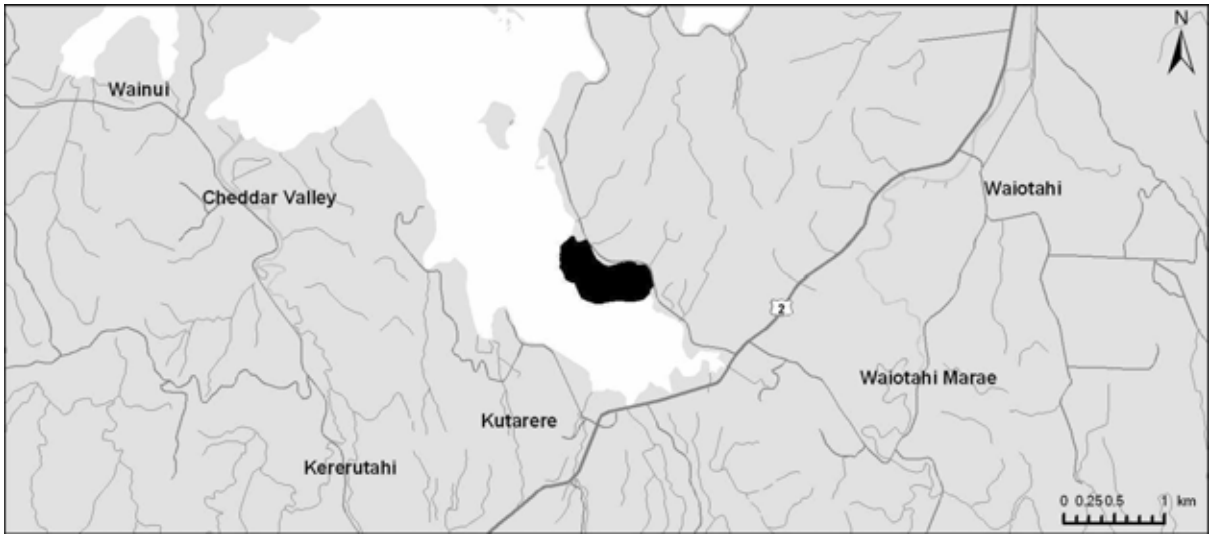
Significance Justification Ruatuna contains small, fragmented remnants of forest types that are under-represented in protected areas within the Bay of Plenty coastal zone (Beadel *et al.* 1999a). Provides habitat for one chronically threatened bird species.

Notes Identified as a Category 3 Recommended Area for Protection (RAP) in the Taneatua Ecological District Protected Natural Areas Programme report (Beadel *et al.* 1999a).

References Beadel *et al.* 1999a; Owen 1994a; Wildland Consultants 1999a; Beadel 2003.

PATAUA ISLAND SCIENTIFIC RESERVE AND EXTENSION

Site Number SVHZ-149
Grid Reference (NZMG) 2874011 6343865
Local Authority Opotiki District Council
Ecological District Taneatua
Status Protected (DOC, Pataua Island Scientific Reserve) and unprotected parts
Site Area 29.4 ha
Altitudinal Range 0-20 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Kanuka-rewarewa forest.	Hillslope
Terrestrial	Mamaku treefernland.	Hillslope
Terrestrial	*Coprosma* spp.-*Olearia solandri/Baumea* sedge-shrubland.	Hillslope
Estuarine	Sea rush-oioi-sea couch-*Schoenoplectus pungens*-rushland.	Intertidal flat
Estuarine	Mangrove shrubland.	Intertidal flat
	(Clarkson and Regnier 1989; Beadel 1993c)	

Indigenous Flora

Pimelea tomentosa (Chronically Threatened, Serious Decline), *Carex lambertiana, Olearia solandri*, and *Lophomyrtus bullata* (all considered to be regionally uncommon – Beadel 2006) are present. *Austrostipa stipoides* occurs in the reserve and reaches its southern limit of distribution on the eastern side of the North Island nearby in Ohiwa Harbour (Beadel 1993c).

An interesting feature of the wetland communities is the presence of *Hebe parviflora*, as this species (while not being rare or uncommon) is not known from any other estuary margin wetland within the Bay of Plenty (Beadel 1993c).

Indigenous Fauna

Common field, water and forest bird species, including international migrants such as lesser knots and bar-tailed godwits (Wildland Consultants 1999a). Banded rail (At Risk, Sparse) were recorded here in 1990 (Owen 1994a).

Part of Ohiwa Harbour (SSWI site), an area of outstanding wildlife value. Important bird species include white heron (Acutely Threatened, Nationally Critical); Australasian bittern (Acutely Threatened, Nationally Endangered);

reef heron, Caspian tern (Acutely Threatened, Nationally Vulnerable); banded rail, spotless crake and North Island fernbird (At Risk, Sparse). The harbour is also a breeding ground for NZ dotterel (Acutely Threatened, Nationally Vulnerable) and banded dotterel (Chronically Threatened, Gradual Decline) (Rasch 1989b), but it is uncertain whether all species are present at this site. It also hosts international migratory wader bird species.

Mangrove communities are important as a nursery for invertebrates and fish, and as a feeding ground for birds.

Condition/Pressures Moderate density of possums. In mid-1980s stock had access to mudflats from the mainland (Clarkson and Regnier 1989). Noted in 1990 (Owen 1994a): continued stock access; farm/roadside rubbish; weeds (pampas, wattle, Japanese honeysuckle, grey and crack willow).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	H
	3.5	M
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	H
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	H
	3.12	H
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance National

Significance Justification Pataua Island and surrounding intertidal flats form a site of national significance for vegetation (Beadel 1994a) and an area of exceptional botanical conservation value (Beadel 1995a). There are records of five acutely threatened, one chronically threatened, and three at risk, bird species around Ohiwa Harbour. One at risk bird species has been recorded from this site, and several other threatened species may use the site.

Notes It contains one chronically threatened and three regionally uncommon plant species, two species at their distributional limits, and one not found in other regional wetlands.

References Beadel 1993c; Beadel 1993d; Beadel 1995a; Owen 1994a; Clarkson and Regnier 1989; Rasch 1989b; Wildland Consultants 1999a; Beadel *et al.* 1999a; Beadel 2006.

STIPA

Site Number SVHZ-150
Grid Reference (NZMG) 2873416 6344987
Local Authority Opotiki District Council
Ecological District Taneatua
Status Unprotected
Site Area 2.2 ha
Altitudinal Range 0-17 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Manuka scrub.	Intertidal flat
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	*Austrostipa stipoides/Selliera radicans*-sea couch tussockland.	Intertidal flat
Estuarine	*Samolus repens* herbfield.	Intertidal flat
Estuarine	Glasswort herbfield.	Intertidal flat
Terrestrial	Estuary margin vegetation. (Beadel 1993d)	Dune mound

Indigenous Flora *Austrostipa stipoides*[19] reaches its southern limit on the east coast of the North Island in Ohiwa Harbour (Beadel *et al.* 1999a).

Indigenous Fauna North Island fernbird (At Risk, Sparse) were recorded at this site in 1990 (Owen 1994a).

Condition/Pressures No information.

[19] The scientific name of this species has changed from *Stipa stipoides* to *Austrostipa stipoides* since this site was first identified.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	M
	3.5	L
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	L
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local.

Significance Justification This small site contains one of the largest known populations of *Austrostipa stipoides* in the Ohiwa Harbour and also contains good examples of saline herbfield (Beadel *et al.* 1999a). One at risk bird species has been recorded here.

Notes Identified as a Category 3 Recommended Area for Protection (RAP) in the Taneatua Ecological District Protected Natural Areas Programme report (Beadel *et al.* 1999a).

References Beadel 1993d; Beadel *et al.* 1996; Owen 1994a; Wildland Consultants 1999a.

HOKIANGA ISLAND

Site Number SVHZ-151
Grid Reference (NZMG) 2872965 6345367
Local Authority Opotiki District Council
Ecological District Taneatua
Status Unprotected
Site Area 11.65 ha
Altitudinal Range 0-15 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Mangrove scrub.	Intertidal flat
Estuarine	Mangrove/sea rush rush-shrubland.	Intertidal flat
Estuarine	Estuarine margin vegetation.	Intertidal flat
Terrestrial	Pohutukawa forest.	Hillslopes, Island
Terrestrial	Indigenous forest and scrub. (Beadel 1993d)	Hillslopes, Island

Indigenous Flora No information.

Indigenous Fauna No fauna information.

Condition/Pressures No information.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	L
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	L
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

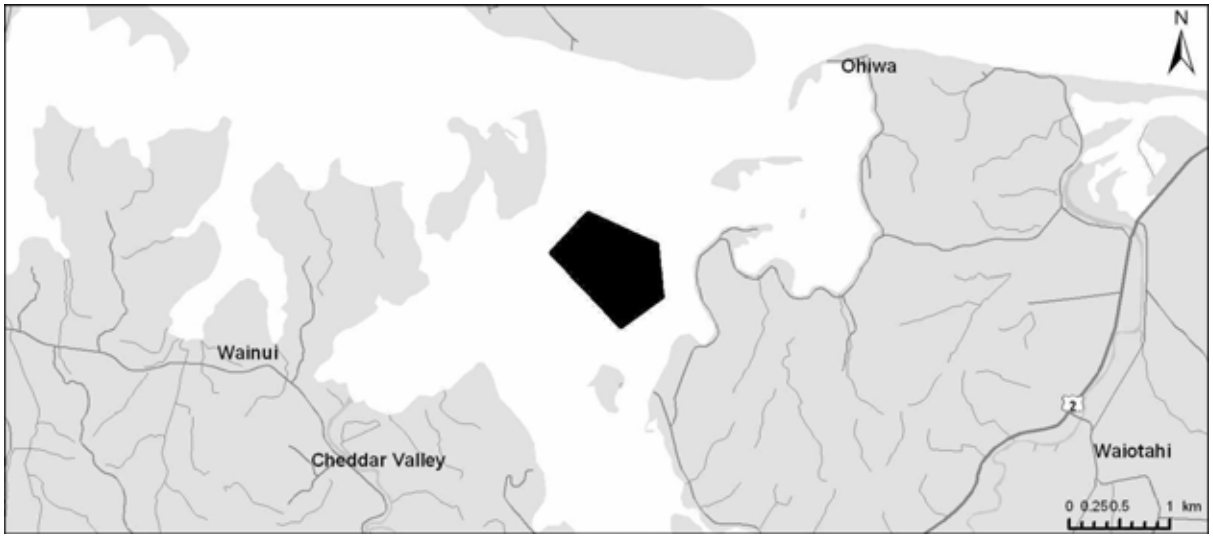
Significance Justification Hokianga Island contains one of the best examples of wetland vegetation around a shell-sandspit in Ohiwa Harbour (Beadel 1993d).

Notes Identified as a Category 4 Recommended Area for Protection (RAP) in the Taneatua Ecological District Protected Natural Areas Programme report (Beadel *et al.* 1999a).

References Beadel 1993d; Beadel *et al.* 1999a.

MOTUOTU ISLAND NATURE RESERVE

Site Number SVHZ-152
Grid Reference (NZMG) 2873024 6346553
Local Authority Opotiki District Council
Ecological District Taneatua
Status Protected (DOC, Motuotu Island Nature Reserve)
Site Area 70.2 ha
Altitudinal Range 0-7 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa/*Olearia solandri*-manuka forest and shrubland.	Sandspit
Terrestrial	Manuka scrub.	Sandspit
Estuarine	Mangrove scrub and shrubland.	Intertidal flat
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	Mangrove mudflat.	Intertidal flat
Estuarine	Open water.	Intertidal flat
	(Clarkson and Regnier 1989; Beadel 1993c)	

Indigenous Flora

These mangrove stands are close to the southern limit of distribution of mangrove communities. *Austrostipa stipoides* also occurs in the reserve. *A. stipoides* reaches its southern limit of distribution on the eastern side of the North Island in Ohiwa Harbour (Beadel 1995a). The site includes some of the largest individual mangroves in the Ohiwa Harbour (Clarkson and Regnier 1989).

Indigenous Fauna

Common field, forest and wader bird species, including international migrants such as lesser knots and bar-tailed godwits (Wildland Consultants 1999a). It is a moderately important roost site for shorebirds (Owen *et al.* 2006).

Banded rail and North Island fernbird (At Risk, Sparse) were recorded here in 1990 (Owen 1994a).

The Ohiwa Harbour SSWI site (of which Motuotu is a part) is an area of outstanding wildlife value. Important bird species include white heron (Acutely Threatened, Nationally Critical); Australasian bittern (Acutely Threatened, Nationally Endangered); reef heron, Caspian tern (Acutely

Threatened, Nationally Vulnerable); banded rail, spotless crake and North Island fernbird (At Risk, Sparse). The harbour is also a breeding ground for NZ dotterel (Acutely Threatened, Nationally Vulnerable) and banded dotterel (Chronically Threatened, Gradual Decline) (Rasch 1989b).

Condition/Pressures Gorse, black wattle and brush wattle occur locally on sandspits (Wildland Consultants 1999a).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	H
	3.4	H
	3.5	M
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	H
Ecological Context	3.9	H
	3.10	H
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance National

Significance Justification Motuotu Island contains good quality, representative examples of the estuarine vegetation of Ohiwa Harbour (Beadel 1995a), protected as nature reserve. This site contains one of the best examples of mangrove stands in the Ohiwa Harbour (Beadel *et al.* 1999a). *Austrostipa stipoides* and mangrove near are near southern limits of distribution nationally. There are past records of five acutely threatened, one chronically threatened, and three at risk bird species around Ohiwa Harbour. It is uncertain whether all species are present at this site however one at risk bird species has been recorded from the site recently. Site also hosts international migratory wader bird species.

Notes This reserve was assigned an 'exceptional' botanical conservation rank by Beadel (1995a).

References Beadel 1993c, 1995a; Clarkson and Regnier 1989; Rasch 1989b; Wildland Consultants 1999a; Beadel *et al.* 1999a; Owen *et al.* 2006.

PUKERURU

Site Number SVHZ-153
Grid Reference (NZMG) 2873870 6345625
Local Authority Opotiki District Council
Ecological District Taneatua
Status Unprotected
Site Area 3.1 ha
Altitudinal Range 1-20 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Palustrine	Grey willow forest.	Wetland
Palustrine	Manuka scrub.	Wetland
Palustrine	Grey willow/manuka scrub.	Wetland
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	Oioi rushland. (Beadel 1993c)	Intertidal flat

Indigenous Flora *Cortaderia toetoe* was recorded at this site, a native grass species which is uncommon around Ohiwa (Beadel *et al.* 1999a).

Indigenous Fauna North Island fernbird (At Risk, Sparse) recorded in 1990 (Owen 1994a).

Condition/Pressures Recorded in 1990 (Owen 1994a): weeds - pampas, wattle, gorse, and blackberry.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	L
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local.

Significance Justification A small enclosed bay with saltmarsh and manuka scrub in relatively good condition, which are contiguous with freshwater wetland (Beadel *et al.* 1999). Contains a locally uncommon plant species, and there is a 1990 record of one at risk marshbird species.

Notes Identified as a Category 4 Recommended Area for Protection (RAP) in the Taneatua Ecological District Protected Natural Areas Programme report (Beadel *et al.* 1999a).

References Beadel 1993d; Owen 1994a; Beadel *et al.* 1999a; Wildland Consultants 1999a.

OHIWA SCENIC RESERVE AND SURROUNDS

Site Number SVHZ-154
Grid Reference (NZMG) 2874131 6346183
Local Authority Opotiki District Council
Ecological District Taneatua
Status Protected (DOC, Ohiwa Scenic Reserve) and unprotected parts
Site Area 17.5 ha
Altitudinal Range 4-40 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa forest.	Hillslope.
Terrestrial	Pohutukawa/kanuka-mamaku forest.	Hillslope.
Terrestrial	Rewarewa-black wattle-kamahi forest.	Hillslope.
Terrestrial	Mamaku-silver fern treefernland.	Hillslope.
Estuarine	Mangrove/sea rush rush-shrubland.	Intertidal flat.
Estuarine	Sea rush tussockland.	Intertidal flat.
Estuarine	Oioi rushland.	Intertidal flat.
	(Clarkson and Regnier 1989; Beadel 1993c)	

Indigenous Flora No significant species have been recorded.

Indigenous Fauna North Island fernbird and banded rail (At Risk, Sparse) recorded in 1990 (Owen 1994a). Kereru (Chronically Threatened, Gradual Decline) and common forest birds (Wildland Consultants 1999a).

Condition/Pressures Tidal flow is at present impeded by the causeway across the mouth of the inlet (Wildland Consultants 1999a). Black wattle occurs locally in Ohiwa Scenic Reserve and blackberry is locally common. Occasional domestic stock access across mudflats (Clarkson and Regnier 1989).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	H
Viability and Sustainability	3.11	L
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

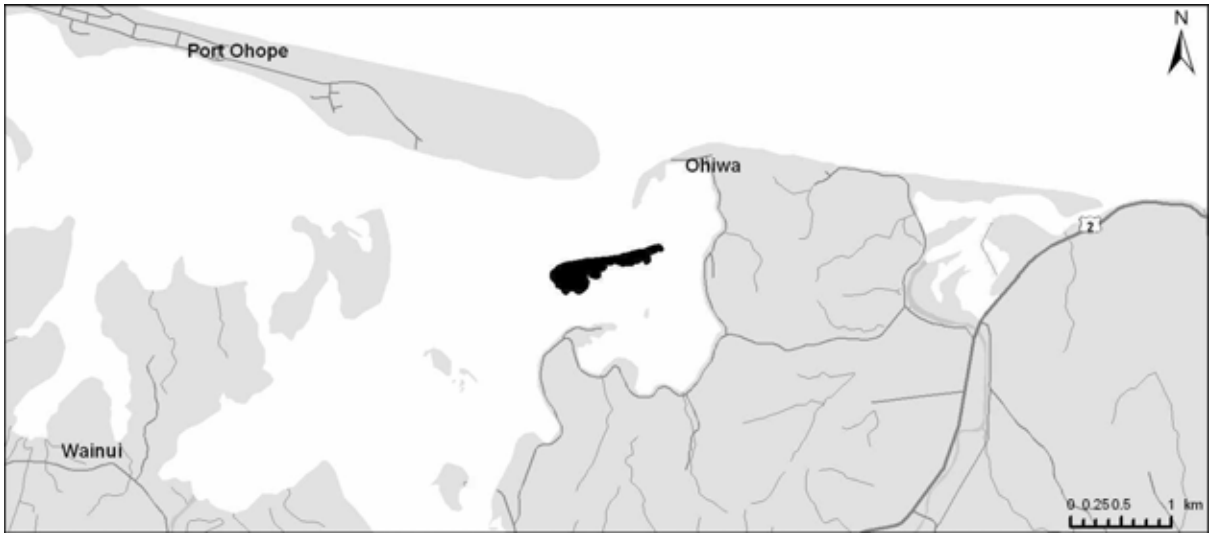
Significance Justification This site includes a good quality, moderately sized example of pohutukawa forest (a regionally and nationally under-represented vegetation type) contiguous with saltmarsh (Beadel *et al.* 1999a), forming a regionally uncommon ecological sequence. Habitat of one chronically threatened and one at risk bird species.

Notes The unprotected part of the site was identified as a Category 3 Recommended Area for Protection (RAP) in the Taneatua Ecological District Protected Natural Areas Programme report (Beadel *et al.* 1999a).

References Beadel 1993c; Beadel 1993d; Beadel *et al.* 1999a; Clarkson and Regnier 1989; Owen 1994a; Wildland Consultants 1999a.

WHANGAKOPIKOPIKO ISLAND

Site Number	SVHZ-155
Grid Reference (NZMG)	2874363 6347503
Local Authority	Opotiki District Council
Ecological District	Taneatua
Status	Protected (DOC, Whangakopikopiko Wildlife Refuge Reserve) and unprotected parts
Site Area	12.9 ha
Altitudinal Range	0 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	Sea rush-oioi/*Selliera radicans-Samolus repens* tussockland.	Intertidal flat
Estuarine	*Samolus repens* herbfield.	Intertidal flat
Terrestrial	Manuka shrubland.	Dune and beach sands
Terrestrial	Sea couch-lupin-blackberry-bracken-pohuehue-Yorkshire fog grassland.	Dune and beach sands
Terrestrial	(Kanuka)/sea couch-lupin-blackberry-bracken-pohuehue-Yorkshire fog grassland. (Beadel *et al.* 1999a)	Dune and beach sands

Indigenous Flora

Kokihi (New Zealand spinach, *Tetragonia tetragonioides*) (At Risk, Sparse) was recorded on the island in 1996 (Beadel *et al.* 1999a). Kunzea is present on the island and may be *Kunzea* 'Thornton' (classed as Acutely Threatened, Nationally Vulnerable), but this needs to be confirmed.

Indigenous Fauna

North Island fernbird (At Risk, Sparse) were present in 1990 (Owen 1994a). The dunes are a nesting area for NZ dotterel (Acutely Threatened, Nationally Vulnerable) (John Heaphy pers. comm. 2006), and site is a high tide shorebird roost of moderate importance (Owen *et al.* 2006).

Condition/Pressures

The vegetation on the higher parts of the island is highly modified and is dominated by adventive species (sea couch-lupin-blackberry-bracken-pohuehue-Yorkshire fog grassland). A few emergent windshorn kanuka (3-4 m tall) remain at the western end of the island.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	M
	3.5	M
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	H
Viability and Sustainability	3.11	M
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

Significance Justification Whangakopikopiko Island is formed of accumulated sand. The wetland vegetation around the margins, while small in extent, is of relatively good quality and includes some of the larger areas of low herbfields in the harbour, (i.e. *Samolus repens* and *Selliera radicans* herbfields). Indigenous species will form the dominant cover on the island if it is left undisturbed (i.e. no fires or clearing of vegetation) (Beadel *et al.* 1999a). One at risk plant species is present. This site is regionally important as a breeding area for northern NZ dotterel (Acutely Threatened), there is a record of one at risk bird species, and site is used as a high tide roost by migratory wader species.

Notes The unprotected parts to the southeast of the reserve were identified as a Category 3 Recommended Area for Protection (RAP) in the Taneatua Ecological District Protected Natural Areas Programme report (Beadel *et al.* 1999a).

References Beadel 1993c; Owen 1994a; Beadel *et al.* 1999a; Owen *et al.*2006.

ISLAND NEAR WHANGAKOPIKOPIKO ISLAND (UNNAMED)

Site Number SVHZ-156
Grid Reference (NZMG) 2874909 6347076
Local Authority Opotiki District Council
Ecological District Taneatua
Status Unprotected
Site Area 0.5 ha
Altitudinal Range 0 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Sea rush-*Baumea juncea*-sea couch-oioi grass-sedge-rushland.	Intertidal flat
Terrestrial	Pohutukawa/*Olearia solandri*-manuka shrubland.	Dune, beach sands
Estuarine	Sea rush tussockland (minor areas).	Intertidal flat
Estuarine	*Baumea juncea* sedgeland (minor area).	Intertidal flat
Estuarine	Mangrove mudflat. (Beadel 1993c)	Intertidal flat

Indigenous Flora No significant species recorded.

Indigenous Fauna Island margins are used as a high tide roost by waders, marsh birds recorded in 1990 (Owen 1994a). A moderately important roost site for shorebirds (Owen et al 2006).

Condition/Pressures Noted in 1990 (Owen 1994a): weeds – blackberry, gorse, lupin.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	L
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	L
Viability and Sustainability	3.11	H
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

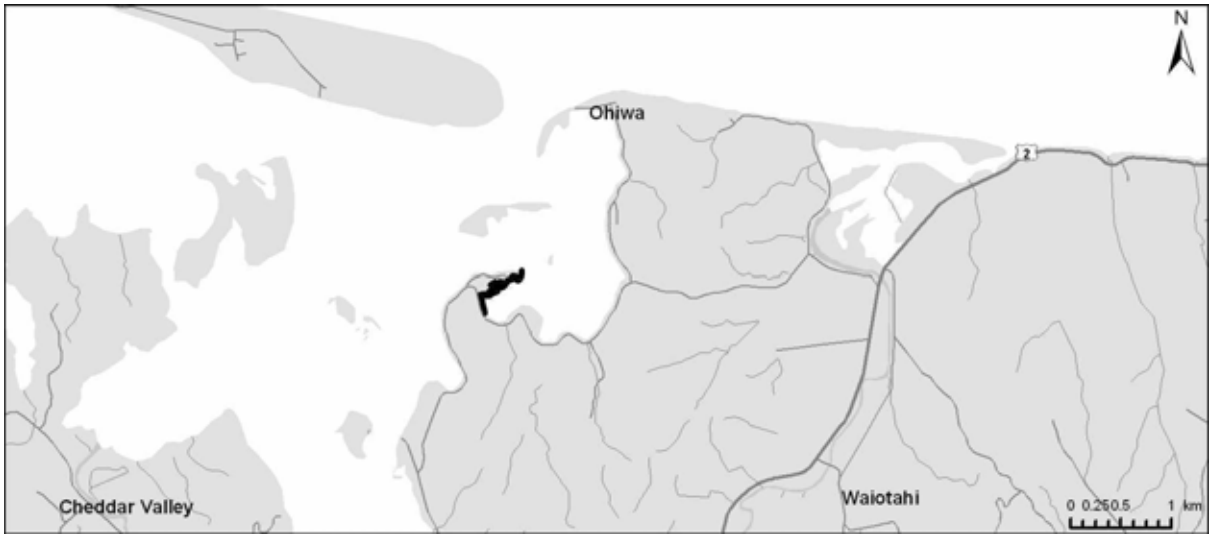
Significance Justification Although small, this island contains a relatively good quality example of indigenous vegetation, grading from saltmarsh to pohutukawa/*Olearia solandri*-manuka shrubland (Beadel *et al.* 1999a). Some weed pressures have been recorded. The site is used as a high tide roost by migratory wader bird species.

Notes Identified as a Category 3 Recommended Area for Protection (RAP) in the Taneatua Ecological District Protected Natural Areas Programme report (Beadel *et al.* 1999a).

References Beadel 1993c; Owen 1994a; Wildland Consultants 1999a; Owen *et al.* 2006.

OHIWA LOOP ROAD SALTMARSH

Site Number SVHZ-157
Grid Reference (NZMG) 2874373 6346798
Local Authority Opotiki District Council
Ecological District Taneatua
Status Unprotected
Site Area 1.6 ha
Altitudinal Range 0-7 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Manuka shrubland.	Intertidal flat
Estuarine	Manuka-*Olearia solandri* shrubland.	Intertidal flat
Estuarine	Oioi rushland.	Intertidal flat
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine	Estuary margin vegetation. (Beadel 1993c)	Intertidal flat

Indigenous Flora No significant species recorded.

Indigenous Fauna Banded rail, North Island fernbird (At Risk, Sparse) recorded in 1990 (Owen 1994a).

Condition/Pressures Recorded in 1990 (Owen 1994a): domestic rubbish dumping; stock access; pampas; alterations to natural shoreline.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	L
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

Significance Justification Although small in size, this site is a typical local example of intertidal vegetation types. Two at risk bird species have been recorded here in the past.

References Beadel 1993c; Owen 1994a.

REEVES ROAD WETLANDS

Site Number SVHZ-158
Grid Reference (NZMG) 2874873 6346050
Local Authority Opotiki District Council
Ecological District Taneatua
Status Unprotected
Site Area 4.4 ha
Altitudinal Range 4-20 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Mangrove mudflat.	Intertidal flat
Estuarine	Mangrove/*Schoenoplectus pungens* shrubland.	Intertidal flat
Estuarine	Mangrove scrub.	Intertidal flat
Estuarine	*Schoenoplectus pungens* sedgeland.	Intertidal flat
Estuarine	Sea rush tussockland.	Intertidal flat
Estuarine/Palustrine	Estuary margin vegetation. (Beadel 1993c)	Intertidal flat/wetland

Indigenous Flora No significant species noted.

Indigenous Fauna Banded rail and North Island fernbird (At Risk, Sparse) were recorded here in 1990 (Owen 1994a).

Condition/Pressures Noted in 1990 (Owen 1994a): stock access; weeds - wattle, pampas, gorse, wild ginger, blackberry. This site is cut off from the main harbour by Reeves Road.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	M
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	L
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

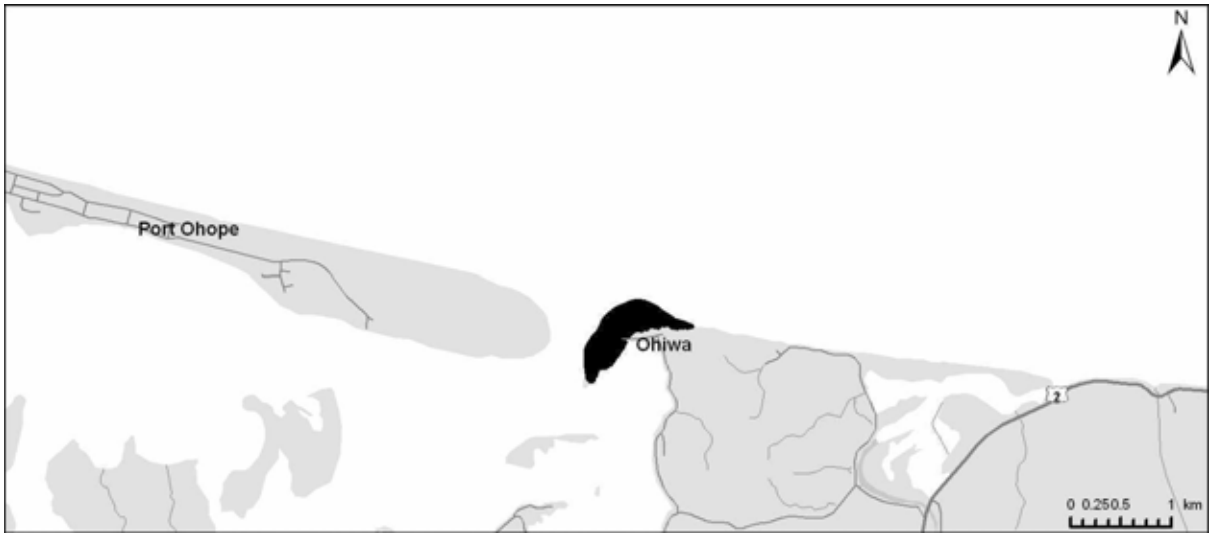
Relative Significance Local

Significance Justification Although small in size, this site is a typical local example of intertidal vegetation types. Along with the suite of pressures common around Ohiwa Harbour site, this site has been impacted by road construction. Two at risk bird species have been recorded here in the past.

References Beadel 1993c; Owen 1994a.

OHIWA SPIT

Site Number SVHZ-159
Grid Reference (NZMG) 2875155 6348655
Local Authority Opotiki District Council
Ecological District Taneatua
Status Protected (DOC, Unnamed Stewardship Area, Recreation and Local Purpose Esplanade Reserves) and unprotected parts
Site Area 26.7 ha
Altitudinal Range 0-8 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial/Estuarine	Spinifex, pampas, lupin, oioi, *Ficinia nodosa* and gorse.	Dune and beach sands
Terrestrial/Marine	Sandfield.	Dune and beach sands
Terrestrial	Pampas-lupin-gorse/spinifex-sea couch shrubland.	Dune and beach sands
Terrestrial	*Carex pumila* sandfield.	Dune and beach sands
Estuarine	(Sea rush)/*Selliera radicans-Carex pumila-Isolepis cernua*-arrow grass herbfield. (Beadel 1993c; Wildland Consultants 1999a)	Dune and beach sands

Indigenous Flora No significant species noted.

Indigenous Fauna Common field and coastal bird species, including waders (Wildland Consultants 1999a). Roosting fairy tern (Acutely Threatened, Nationally Critical); NZ dotterel (breeding), wrybill, reef heron, Caspian tern (Acutely Threatened, Nationally Vulnerable); white-fronted tern, banded dotterel (Chronically Threatened, Gradual Decline) and North Island fernbird (At Risk, Sparse). Many international migrant waders roost here during summer months, e.g. lesser knot, pacific golden plover, whimbrel and bar-tailed godwit (OSNZ 2006). This spit is one of two principal spring tide shorebird roosts in Ohiwa Harbour for NZ and banded dotterel, variable oystercatcher and arctic migrants (Dowding and Moore 2006; Owen *et al.*2006).

Condition/Pressures Pampas, lupin and gorse are present in relatively high densities. Physical damage by recreational users is also a problem (Wildland Consultants 1999a). The spit also faces the natural pressure of erosion and accretion (Owen *et al.* 2006).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	H
	3.3	H
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	H
Viability and Sustainability	3.11	M
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

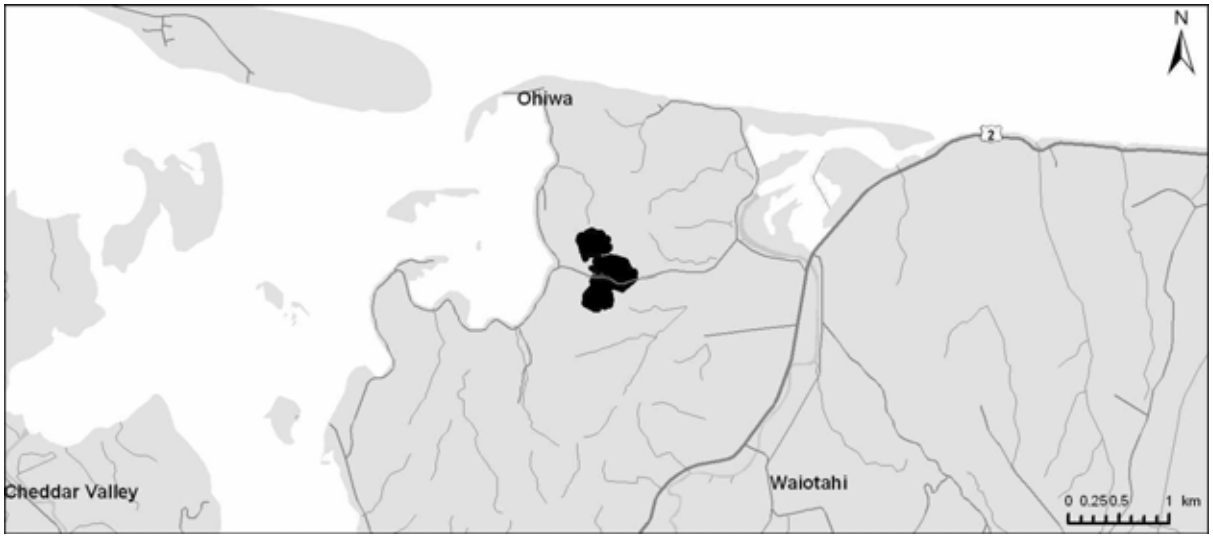
Significance Justification Ohiwa Spit comprises indigenous coastal vegetation of moderate quality, and is degraded by human activity and relatively high pest plant densities. It is of regional significance as a relatively large example of a nationally under-represented habitat. There are current records of five acutely threatened (including breeding northern NZ dotterel), two chronically threatened, and one at risk bird species. It is an important site for a range of migratory waders.

Notes This reserve was given a botanical conservation rank of moderate by Beadel (1995a).

References Beadel 1993c; Beadel 1995a; Wildland Consultants 1999a; OSNZ 2006; Owen *et al.*2006.

OSCAR REEVE SCENIC RESERVE AND EXTENSION

Site Number SVHZ-160
Grid Reference (NZMG) 2876148 6346842
Local Authority Opotiki District Council
Ecological District Taneatua
Status Protected (Oscar Reeve Scenic Reserve) and unprotected parts
Site Area 17.9 ha
Altitudinal Range 20-96 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa-tawa forest.	Hillslope
Terrestrial	Pohutukawa-puriri-mangeao-rewarewa forest (black wattle common throughout).	Hillslope
Terrestrial	Pohutukawa-puriri-rewarewa-tawa/kohekohe forest.	Hillslope
Terrestrial	Black beech forest.	Ridge
Terrestrial	Hard beech forest.	Ridge
Terrestrial	Black wattle-pohutukawa-brush wattle-silver poplar treeland.	Hillslope
Palustrine	*Carex geminata*-raupo-blackberry reed-sedgeland. (Clarkson and Regnier 1989; Wildland Consultants 1999a)	Wetland

Indigenous Flora

Pimelea tomentosa (Chronically Threatened, Serious Decline) has been recorded within the Scenic Reserve (Clarkson and Regnier 1989).

The vegetation comprises an interesting and distinctive mixture of pohutukawa, puriri, hard beech and black beech (Wildland Consultants 1999a). The hard beech and black beech dominant forest types are locally rare (i.e. in Opotiki District) and are not found in any other DOC reserves in the Opotiki District (Beadel 1995a).

Indigenous Fauna

Kereru (Chronically Threatened, Gradual Decline) and a range of common forest bird species were recorded in the early 1990s (Beadel *et al.* 1999a).

Condition/Pressures Within the reserve in late 1980s, there was a moderate-low density of possums and rabbits, old man's beard was present on the eastern boundary and there were several problem weed species (Clarkson and Regnier 1989). Most of the same weed species are present today, e.g. black wattle, silver wattle, blackberry, tall fescue, pampas, however old man's beard has been eradicated from the site.

The unprotected forest remnants within this site are fenced off from surrounding farmland but are still being grazed (Wildland Consultants 1999a).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	H
	3.5	M
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	M
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

Significance Justification This site is notable for its regionally distinctive mixture of pohutukawa, puriri, hard beech and black beech forest types. A diverse range of weed species has modified the natural character of the site. One chronically threatened plant species and one chronically threatened bird species has been recorded here.

Notes The unprotected western and southern remnants were identified as a Category 3 Recommended Area for Protection (RAP) in the Taneatua Ecological District Protected Natural Areas Programme report (Beadel *et al.* 1999a).

References Clarkson and Regnier 1989; Beadel 1995a; Wildland Consultants 1999a; Beadel *et al.* 1999a.

ONEKAWA

Site Number SVHZ-161
Grid Reference (NZMG) 2875999 6348053
Local Authority Opotiki District Council
Ecological District Taneatua
Status Unprotected
Site Area 32.8 ha
Altitudinal Range 6-100 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa-puriri forest.	Hillslope
Terrestrial	(Pohutukawa)/gorse scrub.	Hillslope
Terrestrial	Pohutukawa treeland and forest.	Hillslope
Terrestrial	Manuka-gorse scrub.	Hillslope
Palustrine	Raupo reedland.	Artificial pond
Terrestrial	Secondary scrub and forest.	Hillslope
Terrestrial	Mamaku-(pohutukawa)/kawakawa-taupata-gorse scrub	Hillslope
Terrestrial	(Pohutukawa)/mamaku-mahoe/kawakawa forest. (Current survey and Wildland Consultants 1999a)	Hillslope

Indigenous Flora No significant species were recorded.

Indigenous Fauna Common forest and coastal birds.

Condition/Pressures Some of these areas continue to be grazed. Other areas have recently had stock excluded and surrounding pasture is being colonised by manuka-gorse scrub, and there has been some planting. In 2006 Environment Bay of Plenty laid poison for possums and rats in the Ohiwa Reserve.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	L
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	M
Viability and Sustainability	3.11	M
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

Significance Justification Onekawa is a moderately-sized example of coastal forest, which is under-represented in the reserve system in the Taneatua Ecological District. Ongoing grazing pressure is impacting on the natural character of the site.

Notes Identified as a Category 3 Recommended Area for Protection (RAP) in the Taneatua Ecological District Protected Natural Areas Programme report (Beadel *et al.* 1999a).

References Beadel *et al.* 1999a; Wildland Consultants 1999a.

7.4 Opotiki Ecological District

The coastal zone of the Opotiki Ecological District comprises recent coastal alluvial plains and terraces with Pleistocene marine sandstone headlands. Coastal sand dunes which line the coast in most places are dissected by the Waiotahe, Waioweka and Otara Rivers and the Tirohanga Stream. Small estuaries occur near the mouths of these rivers, the largest being the Waiotahe Estuary.

Indigenous vegetation in Opotiki Ecological District is now restricted to a few highly modified remnants. In the past the Waiotahe, Otara and Waioweka flood plains would have supported kahikatea forest and freshwater wetlands, but there is now extensive farmland. The estuarine wetlands and freshwater wetlands (dominated by sea rush, oioi and raupo) in the estuaries would have been more extensive. The coastal dune system would have been dominated by native sand-binders and pingao whereas today adventive species are common in many places, with only limited areas spinifex and pingao. Pohutukawa, puriri, and karaka would have dominated the hillslopes with small areas of wetland in valley floors.

NZ dotterel breed at several coastal sites within this Ecological District, and a range of shorebird and marsh bird species are present, some of which are classified as threatened. The Waioweka and Waiotahe river estuaries contain inanga (whitebait) spawning areas.

Table 15: Threatened and notable species in Opotiki Ecological District, coastal bioclimatic zone.

Scientific Name	Common Name	Threat Classification/ Significance
BIRDS		
Acutely Threatened		
Egretta alba modesta	white heron	Nationally Critical
Botaurus poiciloptilus	Australasian bittern	Nationally Endangered
Charadrius obscurus aquilonius	NZ dotterel	Nationally Vulnerable
Sterna caspia	Caspian tern	Nationally Vulnerable
Egretta sacra sacra	reef heron	Nationally Vulnerable
Acutely Threatened		
Hemiphaga novaeseelandiae	kereru	Gradual Decline
Sterna striata striata	white-fronted tern	Gradual Decline
Larus novaehollandiae scopulinus	red-billed gull	Gradual Decline
Charadrius bicinctus bicinctus	banded dotterel	Gradual Decline
At Risk		
Porzana pusilla affinis	marsh crake	Sparse
Gallirallus philippensis assimilis	banded rail	Sparse
Bowdleria punctata vealeae	North Island fernbird	Sparse
VASCULAR PLANTS		
Chronically Threatened		
Desmoschoenus spiralis	pingao	Gradual Decline
At Risk		
Tetragonia tetragonioides	NZ spinach	Sparse
Other Notable Species		
Avicennia marina subsp. *australasica*[1]	mangrove	Distributional Limit (past)
FRESHWATER FISH		
Chronically Threatened		
Anguilla dieffenbachii	long-finned eel	Gradual Decline

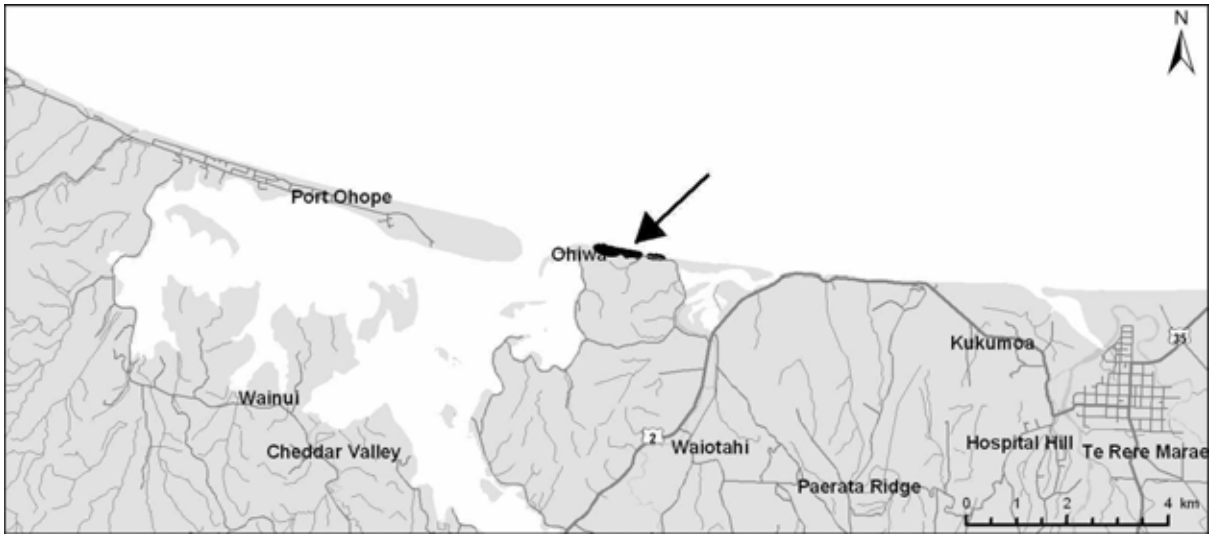
Scientific Name	Common Name	Threat Classification/ Significance
Other Notable Species		
Galaxias maculatus[2]	inanga	Not Threatened

Notes
[1] Mangroves were present in the estuary until at least 1945, but are now gone.
[2] Spawning sites in several estuaries.

References
Daniel 1984; Mitchell 1990; Walls 1991; OSNZ 1998; Wildland Consultants 1999a; OSNZ 2000; Bridson 2003; NZPCN 2006.

BRYANS BEACH B

Site Number SVHZ-162
Grid Reference (NZMG) 2876305 6348604
Local Authority Opotiki District Council
Ecological District Opotiki, Taneatua
Status Protected (Foreshore Local Purpose Reserve[20]) and unprotected parts
Site Area 6.5 ha
Altitudinal Range 0-96 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa forest (40%) ⇔ pohutukawa treeland (60%). (Wildland Consultants 1999a)	Hillslope, cliff and terrace.

Indigenous Flora No significant species recorded (Wildland Consultants 1999a).

Indigenous Fauna Common field and coastal birds (Wildland Consultants 1999a).

Condition/Pressures Damage from recreational users, spread of aggressive weeds (especially kikuyu grass, which suppresses regeneration) and possums are the main current threats.

[20] This reserve is not managed for conservation purposes.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	L
	3.3	M
	3.4	M
	3.5	M
	3.6	M
Diversity and Pattern	3.7	L
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	M
Viability and Sustainability	3.11	L
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

Significance Justification This site is one of the two best remnants of coastal pohutukawa forest in the Opotiki Ecological District and was given an 'outstanding' conservation rank by Walls (1991). It also contains a nationally significant geological site. However, given its small size, the pressures operating on this site are relatively high.

Notes Coastal cliffs on site are best examples of mid-Pleistocene tephra exposures in eastern Bay of Plenty – nationally important geological features (Kenny and Hayward 1996).

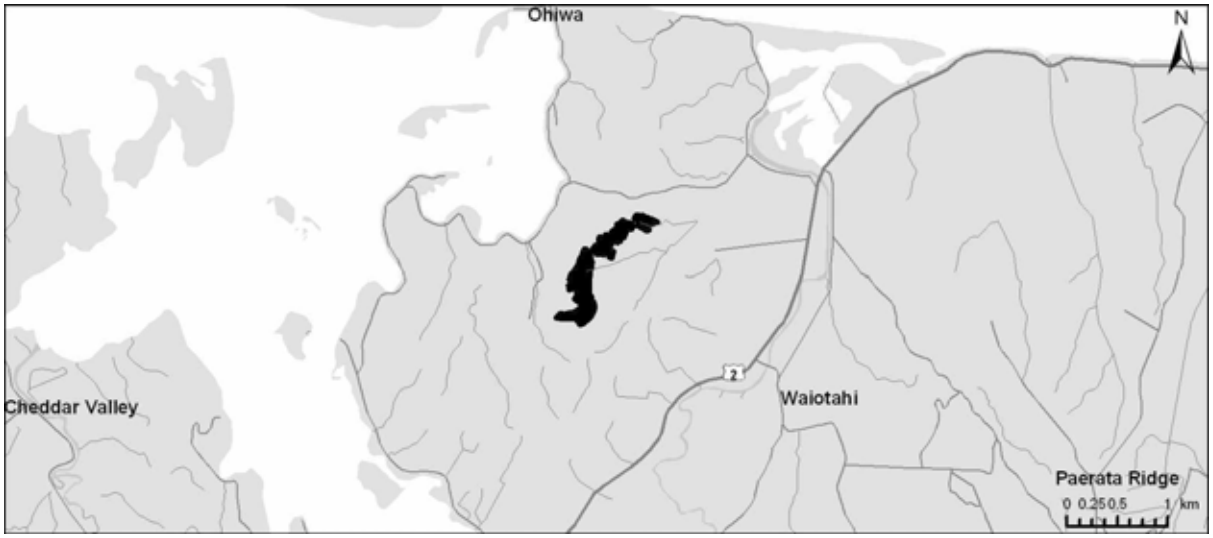
Identified by Beadel *et al.* (1999b) as a Category 1 Natural Heritage Site (large remnant in western part of site only). Vegetation ranked as of District significance in Beadel (1994a).

This site also has high scenic value and includes a major pa site (Wildland Consultants 1999a).

References Beadel 1994a; Rasch 1989b; Walls 1998; Kenny and Hayward 1996; Wildland Consultants 1999a.

LOONEY'S REMNANTS

Site Number SVHZ-163
Grid Reference (NZMG) 2875963 6345999
Local Authority Opotiki District Council
Ecological District Opotiki
Status Unprotected
Site Area 17.7 ha
Altitudinal Range 20-108 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Tawa-(puriri)-(mangeao)-(pohutukawa) forest.	Hillslope, gully
Terrestrial	Puriri-(tawa)-(mangeao) forest.	Hillslope, ridge
Terrestrial	Tawa-(puriri)-(pohutukawa) forest (65%) ⇔ broadleaf species scrub (35%). (Current study and Wildland Consultants 1999a)	Hillslope, ridge

Indigenous Flora No significant species recorded (Wildland Consultants 1999a).

Indigenous Fauna Kereru (Chronically Threatened, Gradual Decline), and common forest and field birds (Wildland Consultants 1999a).

Condition/Pressures None of these remnants are fenced; all areas grazed by cattle or deer. The larger remnants have moderate quality understorey in their central, less accessible sections. There are few weeds beneath the intact native canopy, but brush wattle is becoming prominent in some of the more open areas (Wildland Consultants 1999a).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	L
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	M
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

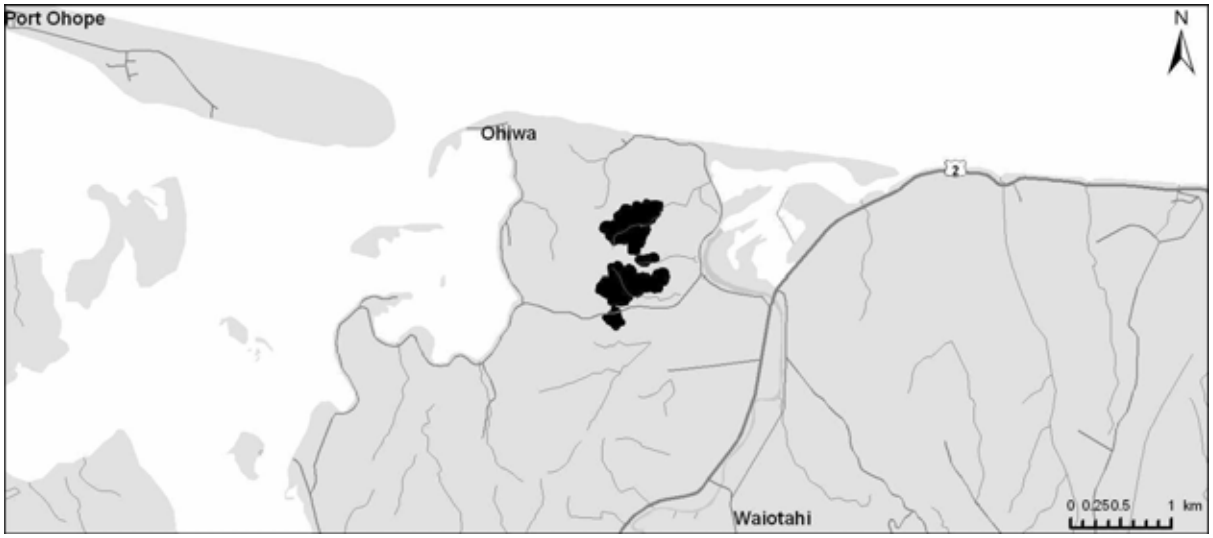
Significance Justification This site contains small examples of moderate quality coastal forest and small representative examples of puriri-dominant forest in the coastal zone of the Opotiki Ecological District (Wildland Consultants 1999a). Ongoing grazing represents the major pressure on the natural character of the site. One chronically threatened forest bird species is known from here.

Notes Mr Looney confirmed that the areas remain unfenced and grazed in 2006; however there is no intention of clearing them.

References Wildland Consultants 1999a; current study.

ONEKAWA FOREST REMNANTS

Site Number SVHZ-164
Grid Reference (NZMG) 2876768 6347320
Local Authority Opotiki District Council
Ecological District Opotiki
Status Unprotected
Site Area 28.6 ha
Altitudinal Range 20-100 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Tawa-puriri-pohutukawa forest.	Hillslope and gully.
Terrestrial	Black beech-tawa-kohekohe forest.	Hillslope and gully.
Terrestrial	Pohutukawa/tawa forest.	Hillslope and gully.
	(Wildland Consultants 1999a)	

Indigenous Flora No significant species recorded. Black beech forest is a rare forest type in the Opotiki Ecological District (Wildland Consultants 1999a).

Indigenous Fauna Kereru (Chronically Threatened, Gradual Decline) and common field and forest birds (Wildland Consultants 1999a).

Condition/Pressures Grazing by domestic stock; possums and rabbits (Wildland Consultants 1999a).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	M
	3.5	M
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

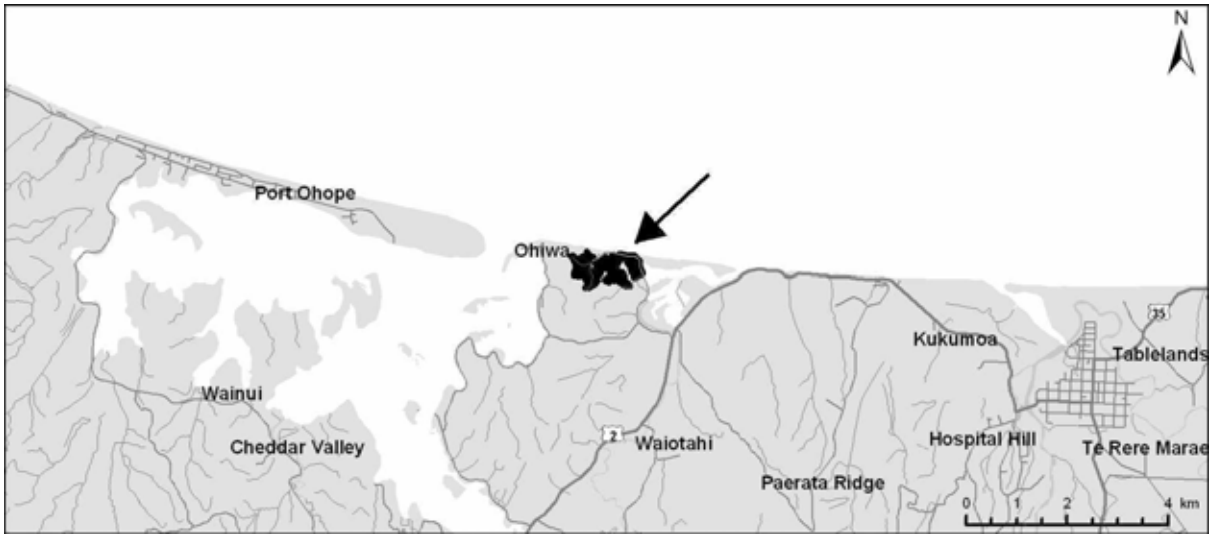
Relative Significance Regional

Significance Justification The site comprises regionally distinctive forest types including pohutukawa and black beech. It is of moderate size, but fragmented and subjected grazing pressure. One chronically threatened forest bird species uses these areas.

References Beadel 1994a; Wildland Consultants 1999a.

BRYANS BEACH A

Site Number SVHZ-165
Grid Reference (NZMG) 2876828 6348187
Local Authority Opotiki District Council
Ecological District Opotiki
Status Unprotected
Site Area 38.9 ha
Altitudinal Range 4-98 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Tawa-puriri-(pohutukawa) forest.	Terrace, cliff.
Terrestrial	(Pohutukawa)/mahoe-kamahi-mamaku shrubland.	Terrace, cliff.
Terrestrial	Pohutukawa forest.	Terrace, cliff.
Terrestrial	(Pohutukawa)-(ngaio)-(karaka)-(puriri)-(adventive tree species)/gorse-(broadleaf species) scrub. (Wildland Consultants 1999a)	Hillslope, terrace and cliff.

Indigenous Flora No significant species recorded (Wildland Consultants 1999a).

Indigenous Fauna Common field and coastal bird species (Wildland Consultants 1999a).

Condition/Pressures High fire risk associated with a flammable vegetation type (gorse dominant), in close proximity to human occupation (Wildland Consultants 1999a). Other threats include domestic pet impacts on wildlife, naturalising exotic trees planted by residents (e.g. *Banksia integrifolia*, loquat, Moreton Bay fig, Tasmanian blackwood) and non-ecosourced native plantings affecting local genetic stock (e.g. variegated pohutukawa, tarata, ngaio).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	L
Rarity or Distinctive Features	3.2	L
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	L
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	M
Viability and Sustainability	3.11	M
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

Significance Justification A moderate-sized example of pohutukawa forest and other coastal forest types with high scenic value; mixed indigenous-exotic forest types judged as having potential to develop into indigenous forest over time (Wildland Consultants 1999a).

References Wildland Consultants 1999a; current study.

WAIOTAHE ESTUARY

Site Number SVHZ-166
Grid Reference (NZMG) 2878265 6347783
Local Authority Opotiki District Council
Ecological District Opotiki
Status Unprotected
Site Area 114.6 ha
Altitudinal Range 0-19 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Oioi-sea rush tussockland (50%) ⇔ oioi rushland (30%) ⇔ sea rush tussockland (20%).	Intertidal flat
Estuarine	Estuarine mudflats and open water.	Intertidal flat
Terrestrial	(Spinifex) sandfield (15%) ⇔ sandfield (85%).	Sand dune
Estuarine/Palustrine	Raupo-*Baumea articulata* reedland (15%) ⇔ open water (85%).	Intertidal flat/wetland
Marine	Worm field.	Subtidal channel
Marine	Worm field.	Intertidal flat
Marine	Cockle bed.	Intertidal flat
Marine	Pipi bed.	Subtidal channel
	(Wildland Consultants 1999a; Stephen Park, Environment BOP, pers. comm. 2006; current study).	

Indigenous Flora

Olearia solandri (not recorded elsewhere in the Ecological District and considered to be regionally uncommon in Beadel 2006), and pingao (Chronically Threatened, Gradual Decline) (Wildland Consultants 1999a).

'Where the Waiotahe River enters the estuary are two small mangroves, the only remnants of the former mangrove forests of the estuary (Daniel 1984). These, and the population in the Waiaua Estuary, are at the south-eastern extreme of the range of mangroves in New Zealand' (Walls 1998).

A few mangroves and tussocks of *Austrostipa stipoides* are present in the saltmarsh areas at the base of the spit (Beadel 2001b). Both these species are at their southern and eastern limits of distribution on the east coast of the North Island.

Indigenous Fauna

'The estuarine mudflats are habitat for birds, several fish species and numerous invertebrates, including shellfish. Whitebait spawn in the seawater/freshwater wedge where the river and streams enter the estuary' (Walls 1998).

Common coastal birds are present, including shags and waders. Important bird species include NZ dotterel, reef heron (Acutely Threatened, Nationally Vulnerable); banded rail and North Island fernbird (At Risk, Sparse). This natural area includes SSWI Site No. 7 (moderate-high rank) (Rasch 1989b).

Condition/Pressures

Surrounded by dairy farms and areas being subdivided for residential housing. Excess siltation or eutrophication from increased run-off are potential future problems (Wildland Consultants 1999a).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	H
	3.4	M
	3.5	H
	3.6	H
Diversity and Pattern	3.7	H
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	H
Viability and Sustainability	3.11	H
	3.12	H
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance

Regional

Significance Justification

This large, estuarine site contains good quality, representative examples of estuarine wetland and dune communities[21] that are characteristic of the Opotiki Ecological District. These are the best examples of these vegetation types in the ED (Beadel 1994a). Intensive neighbouring land use ranks as the most significant pressure operating on the estuary environment. One chronically threatened and one regionally uncommon plant species are present. Two acutely threatened, two at risk, and a range of wader bird species are known from this site.

[21] Only a small area of dunes are in this site. The dunes of the Waiotahe Spit are described in the Waiotahe Spit site (SVHZ-166).

Notes	This site was given an 'outstanding' conservation rank by Walls (1998), which is equivalent to nationally significant or outstanding within the Ecological District. The vegetation of the estuary was ranked as regionally significant in Beadel (1994a).
References	Beadel 1994a; Rasch 1989b; Walls 1998; Wildland Consultants 1999a; Beadel 2001b; current study.

WAIOTAHE SPIT

Site Number	SVHZ-167
Grid Reference (NZMG)	2878281 6348301
Local Authority	Opotiki District Council
Ecological District	Opotiki
Status	Protected (DOC, Waiotahe Spit Scenic and Historic Reserves) and unprotected parts
Site Area	31.0 ha
Altitudinal Range	0-18 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa forest.	Sand dune
Terrestrial	Bracken-sea couch-ripgut brome fern-grassland.	Sand dune
Terrestrial	Mamaku-mahoe treefernland.	Sand dune
Estuarine	Raupo-*Baumea articulata* sedge-reedland.	Intertidal flat
Estuarine	Sea rush tussockland.	Intertidal flat
Terrestrial	(Spinifex) sandfield.	Sand dune
	(Clarkson and Regnier 1989)	

Indigenous Flora

Tetragonia tetragonioides (NZ spinach – At Risk, Sparse) (Wildland Consultants 1999a). A few plants of pingao (Chronically Threatened, Gradual Decline) were planted at Waiotahe Spit in the early 1990s. This species would have occurred here naturally in the past (Beadel 1994a).

Indigenous Fauna

The end of the sandspit is the main shorebird roost in the estuary (Owen *et al.* 2006). Important bird species include breeding NZ dotterel (four pairs, Bridson 2003), reef heron (Acutely Threatened, Nationally Vulnerable); banded rail and North Island fernbird (At Risk, Sparse). This natural area includes SSWI Site No. 7 (moderate-high rank) from Rasch (1989b) in Clarkson and Regnier (1989).

Condition/Pressures

Numerous adventives, with 60 species listed. More aggressive adventives such as pine, boxthorn, blackberry, gorse, and pampas, should be removed (Wildland Consultants 1999a).

Animal pests include rabbits, dogs and mustelids (DOC 1995). Recreational activities such as horse riding, cycling and motor vehicles have damaged the fragile dune structure and caused accelerated erosion. Breeding shorebirds e.g. NZ dotterel are vulnerable to all these types of disturbance (Wildland Consultants 1999a).

DOC and community groups trap mustelids, cats, rats and hedgehogs during NZ dotterel breeding season (Bridson 2003).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	H
	3.4	M
	3.5	H
	3.6	H
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	H
Viability and Sustainability	3.11	H
	3.12	M
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

Significance Justification This site is one of the largest undeveloped sandspits in the region and contains the best examples of these vegetation types remaining in the Opotiki Ecological District (Beadel 1994a). One chronically threatened plant species has been reintroduced, and one at risk plant species persists. The spit supports high numbers of breeding NZ dotterel (an acutely threatened species), while there are records of one other acutely threatened and two at risk bird species, along with migratory waders.

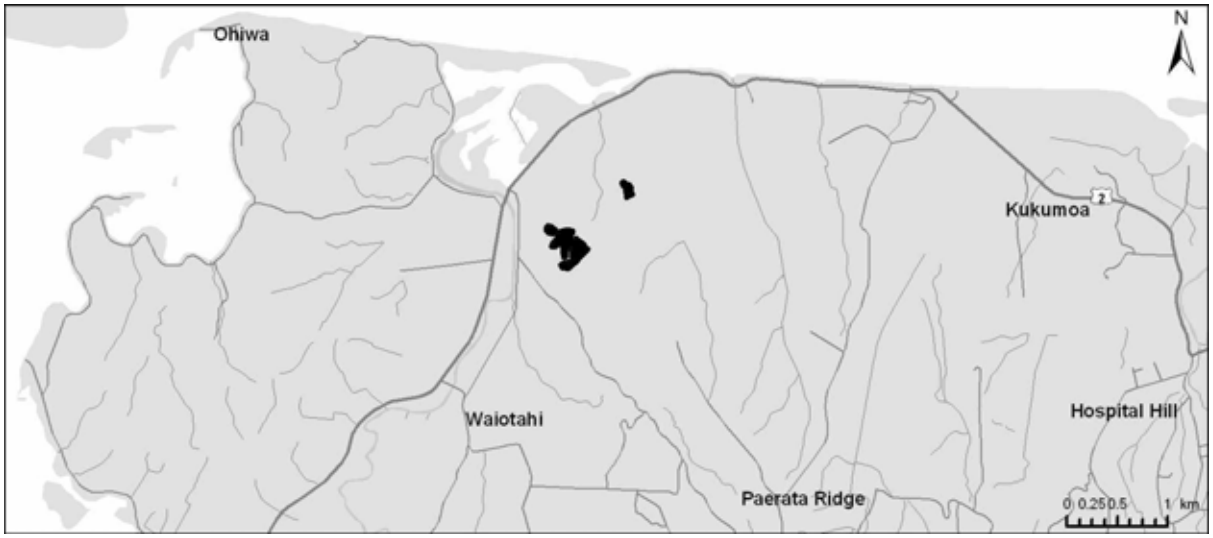
Notes Ranked by Beadel *et al.* (1999b) as a Category 1 Natural Heritage Site, and ranked 'very high' for botanical conservation values by Shaw (1988a).

'Waiotahe Spit is one of the few, largely undeveloped sandspits under Crown control in the Opotiki Ecological District and supports a variety of interesting coastal and wetland species. This natural area contains a reasonably well-preserved pa site which has good cover of pohutukawa forest affording some protection from onshore winds' (Clarkson and Regnier 1989).

References Clarkson and Regnier 1989; DOC 1995; Rasch 1989b; Shaw 1988a; Walls 1998; Wildland Consultants 1999a; Bridson 2003; Owen *et al.* 2006.

LOWER PAERATA RIDGE (PART)[22]

Site Number SVHZ-168
Grid Reference (NZMG) 2878874 6346502
Local Authority Opotiki District Council
Ecological District Opotiki
Status Unprotected
Site Area 6.8 ha
Altitudinal Range 19-80 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa/broad-leaved scrub and forest.	Hillslope, gully
Terrestrial	Tawa-puriri-(rewarewa)-(mangeao) forest. (Wildland Consultants 1999a)	Hillslope, gully

Indigenous Flora No significant species have been recorded (Wildland Consultants 1999a).

Indigenous Fauna Kereru (Chronically Threatened, Gradual Decline) and common forest and field birds (Wildland Consultants 1999a).

Condition/Pressures This is a very fragmented site which has been extensively grazed in the past. Weed species are common along margins and on tracks; problem species include gorse, pampas and radiata pine. The area surrounding the remnants has been subdivided for lifestyle blocks (Wildland Consultants 1999a).

[22] Part of Lower Paerata Ridge occurs outside the 'coastal environment' study area (i.e. further than 1 km inland of MHWS).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	L
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

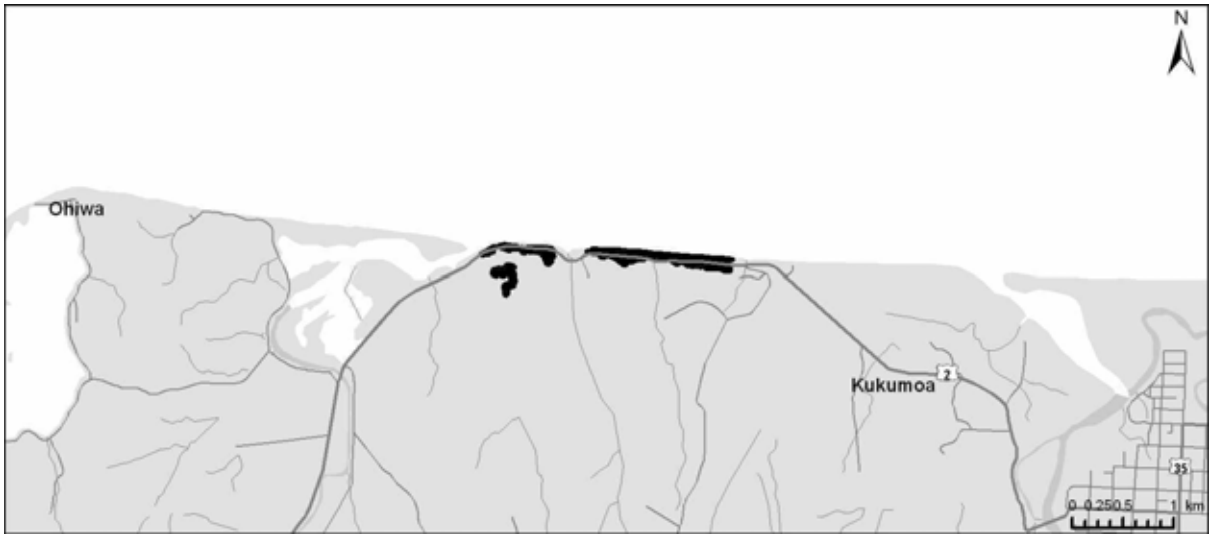
Relative Significance Local

Significance Justification This small site contains examples of indigenous forest types in moderate condition that would have once been widespread in the Opotiki Ecological District (Wildland Consultants 1999a). The natural character of the site has been affected by fragmentation, weeds and past grazing. One chronically threatened forest bird species is known from here.

References Wildland Consultants 1999a.

WAIOTAHE BEACH

Site Number SVHZ-169
Grid Reference (NZMG) 2880922 6348039
Local Authority Opotiki District Council
Ecological District Opotiki
Status Unprotected
Site Area 14.5 ha
Altitudinal Range 0-60 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Puriri-pohutukawa-(radiata pine-macrocarpa-maritime pine)/mahoe-kawakawa-(kamahi)-(mamaku)-forest.	Hillslope, gully
Terrestrial	Mahoe-mamaku scrub and forest.	Hillslope
Terrestrial	Pohutukawa/pasture-gorse-pampas-(radiata pine-maritime pine-macrocarpa) forest.	Sand dune, cliff, terrace
Terrestrial	Pohutukawa/pasture spp.-(ngaio-bracken-taupata) forest.	Sand dune, cliff, terrace
Terrestrial/Marine	Sandfield. (Current study and Wildland Consultants 1999a)	Dune and beach sands

Indigenous Flora No significant species have been recorded.

Indigenous Fauna Two pairs of NZ dotterel (Acutely Threatened, Nationally Vulnerable) were breeding here over 2002-3 (Bridson 2003).

Condition/Pressures Past disturbance from tracking, land clearance, firewood cutting and grazing has opened up the margins of some of the remnants included in this site allowing the invasion of adventive weeds. Problem weeds include tradescantia, agapanthus, brush wattle, barberry, gorse, pampas, macrocarpa, maritime pine, and radiata pine (Beadel *et al.* 1999, Wildlands 2006f).

Local community traps mustelids, cats, rats and hedgehogs during NZ dotterel breeding season (Bridson 2003).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	L
	3.5	L
	3.6	H
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	H
Viability and Sustainability	3.11	L
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

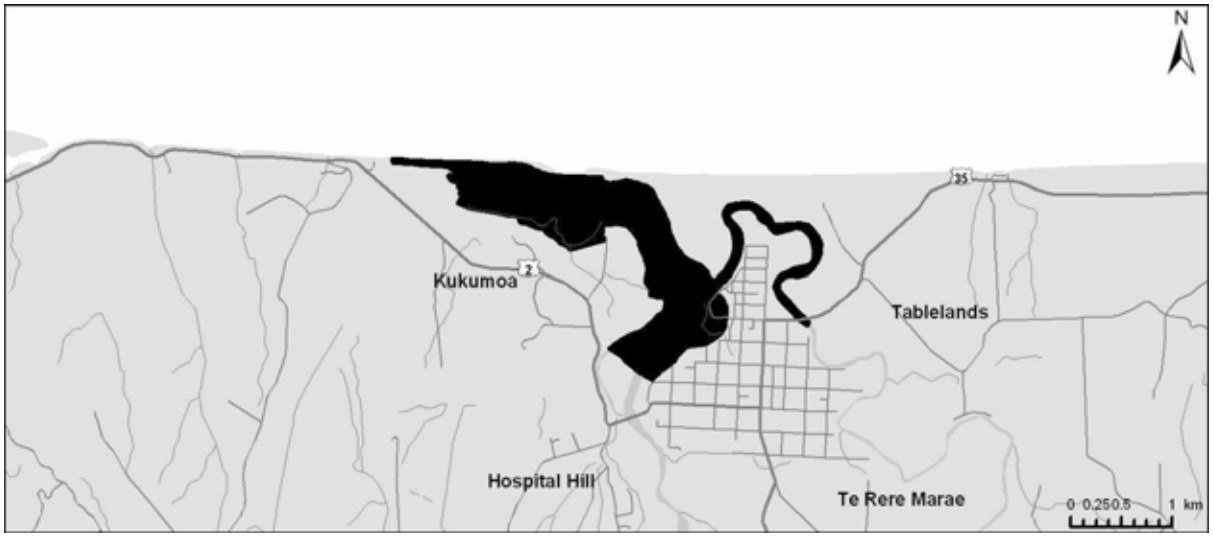
Significance Justification The large pohutukawa stands (nationally and regionally under-represented) in the east of this site were given an 'outstanding' conservation rank by Walls (1998). The site also contains a nationally important geological feature. Presence of a diverse suite of weeds is a significant pressure for a long, narrow site. Acutely threatened NZ dotterel breed here in small numbers.

Notes Coastal cliffs on site are best examples of mid-Pleistocene tephra exposures in eastern Bay of Plenty – nationally important geological features (Kenny and Hayward 1996).

References Beadel 1994a; Walls 1998; Kenny and Hayward 1996; Wildland Consultants 1999a; Bridson 2003; Wildlands 2006f.

WAIOWEKA ESTUARY

Site Number SVHZ-170
Grid Reference (NZMG) 2885086 6347136
Local Authority Opotiki District Council
Ecological District Opotiki
Status Protected (DOC, Huntress Creek Conservation Area; Waioweka Local Purpose Reserves; Waioweka River Control Reserve) and unprotected parts
Site Area 204.5 ha
Altitudinal Range 0-19 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Rank pasture (20%)⇔pohuehue-blackberry vineland (35%)⇔bracken fernland (10%)⇔ boxthorn-gorse-(barberry) scrub (35%).	Sand dune
Terrestrial	Rank pasture.	Sand dune
Palustrine	Saltmarsh ribbonwood-harakeke shrubland (50%) ⇔*Baumea articulata-Bolboschoenus fluviatilis*-sea rush-oioi-*Cyperus ustulatus* sedge-reedland (35%) ⇔raupo reedland (5%).	Wetland
Estuarine	*Bolboschoenus fluviatilis* sedgeland (32%)⇔oioi rushland (28%)⇔sea rush tussockland (4%)⇔ *Baumea juncea-Samolus repens* herb-sedgeland (3%)⇔oioi-pohuehue vine-sedgeland (3%)⇔open water (30%).	Interidal flat
Estuarine	Open water and mud flats (92%)⇔(saltmarsh ribbonwood)/sea rush-oioi reedland (3%)⇔rank pasture (5%)⇔raupo reedland (+).	Estuary, intertidal flat
Estuarine	(Saltmarsh ribbonwood)/*Bolboschoenus fluviatilis*-(oioi)-(sea rush) reedland.	Intertidal flat
Terrestrial	Spinifex-(kikuyu)-grassland (55%)⇔kikuyu-pohuehue grassland (45%).	Sand dune
Terrestrial	Crack willow forest and treeland.	Alluvial flat, terrace
Terrestrial	Rank pasture (dominated by tall fescue and Yorkshire fog).	Alluvial flat, terrace
Terrestrial	Blackberry-(*Tradescantia*)-(gorse)-(karamu) vineland.	Alluvial flat, terrace

Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine	Sea rush-oioi tussockland.	Alluvial flat, terrace
Terrestrial	Sandfield.	Sand dune
Terrestrial	Inkweed grassland.	Sand dune
Terrestrial	Lupin shrubland.	Sand dune
Terrestrial/Palustrine	Crack willow forest and treeland (40%)⇔tall fescue grassland (40%)⇔blackberry-(tradescantia)-(gorse)-(karamu) vineland.	Alluvial flat
Marine	Worm field.	Subtidal channel
Marine	Worm field.	Intertidal flat
Marine	Cockle bed.	Intertidal flat
Marine	Pipi bed.	Subtidal channel
	(Current study; Wildland Consultants 1999a; Stephen Park, Environment BOP, pers. comm. 2006).	

Indigenous Flora

Mangroves were present in the estuary until at least 1945 (Daniel 1984), but were not found during a survey in 1999 (Wildland Consultants 1999a).

Indigenous Fauna

This site provides a variety of aquatic environments, from freshwater riverine to marine, and is therefore a valuable habitat for native wading birds, fish and invertebrates.

Common coastal and wetland bird species including waders are present, and there are nesting/breeding grounds for variable oystercatcher, Australasian harrier and black-backed gull. Threatened bird species recorded here include Australasian bittern (Acutely Threatened, Nationally Endangered); NZ dotterel (Acutely Threatened, Nationally Vulnerable); North Island fernbird, marsh crake and banded rail (At Risk, Sparse) (Wildland Consultants 1999a).

Numbers of breeding NZ dotterel (Acutely Threatened, Nationally Vulnerable) pairs here have declined from six in 1996 to one in 2003 (Bridson 2003) – see 'Hikuwai Beach'.

The saltwater/freshwater zone where the Otara and Waioweka Rivers enter the estuary is an important habitat for whitebait spawning (Walls 1998). Spawning of inanga (*Galaxias maculatus*, not threatened), a culturally and commercially important species, was recorded in 1988, mainly among tidally-inundated tall fescue and Mercer grass (Mitchell 1990).

Condition/Pressures

Cattle and sheep graze most terrestrial vegetation surrounding the Waioweka estuary, penetrating into the marine and freshwater wetlands which form the terrestrial-aquatic interface. Grazing damages indigenous plant communities, allowing the invasion of adventive weed species and affects the vegetation overhanging waterways (whitebait spawning habitat). Stock grazing and trampling were identified as threats to inanga spawning areas in 1988 (Mitchell 1990). Stock may also transport weed propagules. Much of the indigenous vegetation along the estuary margin has been cleared in the past and replaced with exotic pasture or crack willow (Wildland Consultants 1999a).

Proximity to Opotiki township (including the oxidation ponds) and surrounding dairy farming increases the risk of eutrophication (human, animal and fertiliser sources), pesticide run-off, rubbish dumping and sedimentation (Wildland Consultants 1999a).

This site has a very high density of invasive weed species including tree privet, boxthorn, barberry, lupin, kikuyu, mothplant, wild rose, sheep's sorrel, tall fescue, cocksfoot, ryegrass, Yorkshire fog, ragwort, broom, and blackberry (Wildland Consultants 1999a).

DOC has trapped mustelids, cats, rats and hedgehogs here during the NZ dotterel breeding season since 1994. The local decline in NZ dotterel numbers may be related to spit erosion reducing available nesting areas (Bridson 2003) – see 'Hikuwai Beach'.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	H
	3.4	M
	3.5	M
	3.6	H
Diversity and Pattern	3.7	H
Naturalness	3.8	L
Ecological Context	3.9	M
	3.10	H
Viability and Sustainability	3.11	H
	3.12	M
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

Significance Justification This large natural area contains a diverse range of estuarine, sand dune and wetland vegetation, including five sites of outstanding conservation rank, two of high rank and one of moderate rank (Walls 1998). Most of the site is subject to a range of pressures that affects water quality and the composition of vegetation communities. Two acutely threatened, three at risk, and a range of wading bird species are known from this site, and it contains spawning sites for inanga (whitebait).

Notes Identified by Beadel *et al.* (1999b) as a Category 1 Natural Heritage Site.

References Daniel 1984; Mitchell 1990; Beadel 1994a; DOC 1995; Walls 1998; Beadel *et al.* 1999b; Wildland Consultants 1999a; Bridson 2003; current study.

HIKUWAI BEACH

Site Number SVHZ-171
Grid Reference (NZMG) 2886416 6347742
Local Authority Opotiki District Council
Ecological District Opotiki
Status Protected (Hikuwai Beach Local Purpose Reserve) and unprotected parts
Site Area 46.3 ha
Altitudinal Range 0-10 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Lupin-(boxthorn)/rank pasture-(pohuehue)-(inkweed)-(sand) grassland.	Sand dune
Terrestrial	(Boxthorn)/pohuehue-rank pasture vineland.	Sand dune
Terrestrial	Spinifex-(shore bindweed)-(kikuyu) grassland	Sand dune
Terrestrial	Bracken fernland.	Sand dune
Terrestrial	Exotic pasture. (Wildland Consultants 1999a)	Alluvial plain

Indigenous Flora No significant species recorded (Wildland Consultants 1999a).

Indigenous Fauna Common field and coastal bird species (Wildland Consultants 1999a).

Numbers of breeding NZ dotterel (Acutely Threatened, Nationally Vulnerable) pairs here have declined from six in 1996 to one in 2003 (Bridson 2003) – see 'Waioweka Estuary'. Common field, waterbird and coastal bird species, including pied stilt. Includes SSWI site No. 26 (potential rank) (Rasch 1989b).

Condition/Pressures The vegetation is relatively degraded and comprises a mixture of indigenous and exotic species. Weeds present the biggest threat to this site. A number of 'problem' weed species are common, including boxthorn, lupin, blackberry, inkweed, woolly nightshade, gorse and kikuyu. Damage from recreational users is also an issue (Wildland Consultants 1999a).

DOC has trapped mustelids, cats, rats and hedgehogs here during NZ dotterel breeding season since 1994. The local decline in NZ dotterel numbers may be related to spit erosion reducing available nesting areas (Bridson 2003 - see

'Waioweka Estuary').

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	L
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	L
	3.5	L
	3.6	H
Diversity and Pattern	3.7	L
Naturalness	3.8	L
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	M
	3.12	L
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

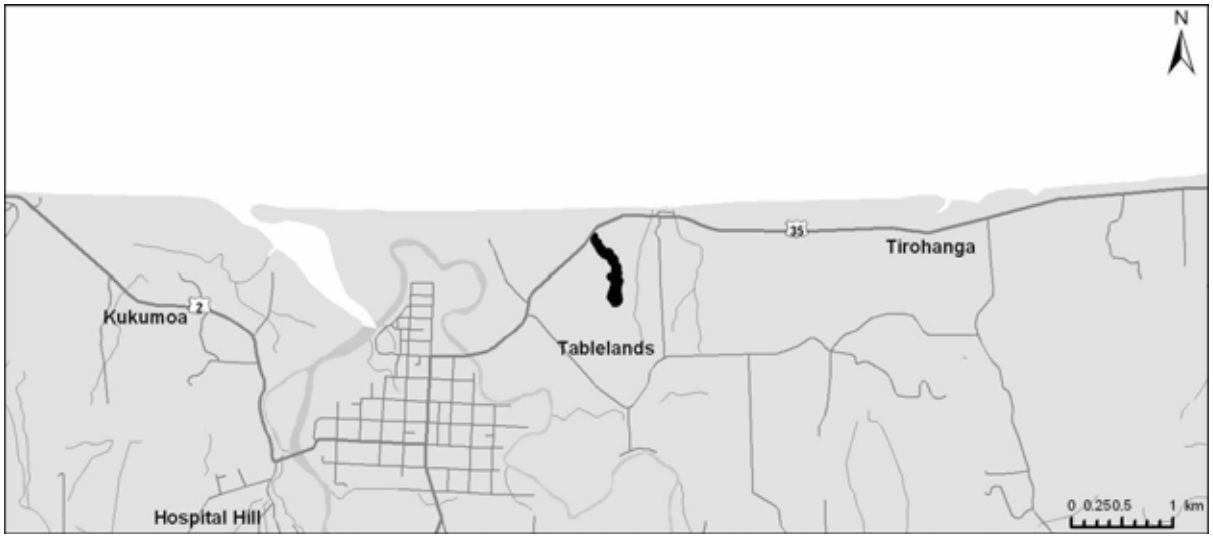
Significance Justification A relatively large site that, although substantially modified by a pervasive and diverse range of weeds, and by human activity, has high potential for restoration. Threatened northern NZ dotterel have bred there, but numbers of nesting pairs have declined recently. It has moderate to high scenic and recreational values (due to proximity to Opotiki township).

Notes This site was not identified as significant vegetation in Beadel (1994a), however Walls (1998) gave it an overall conservation rank of 'high' (and put emphasis on its restoration potential).

References Walls 1998; Rasch 1989b; Wildland Consultants 1999a; Bridson 2003.

TE MATAU (PART)[23]

Site Number	SVHZ-172
Grid Reference (NZMG)	2888325 6347234
Local Authority	Opotiki District Council
Ecological District	Opotiki
Status	Unprotected
Site Area	4.5 ha
Altitudinal Range	18-40 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa-puriri-karaka forest. (Wildland Consultants 1999a)	Steep hillslope

Indigenous Flora No significant species recorded (Wildland Consultants 1999a).

Indigenous Fauna Common field and coastal bird species (Wildland Consultants 1999a).

Condition/Pressures This forest remnant is not fenced and appears to be grazed. Several puriri are showing signs of dieback. There are a few small landslides along the site. There are some tall planted eucalyptus within the site, and several invasive weed species have established, including wild ginger, Chinese privet, tree privet, radiata pine, wattle spp., gorse, blackberry, and barberry.

[23] Part of Te Matau occurs outside the 'coastal environment' study area (i.e. further than 1 km inland of MHWS).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	L
	3.3	L
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	L
Naturalness	3.8	M
Ecological Context	3.9	L
	3.10	M
Viability and Sustainability	3.11	L
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

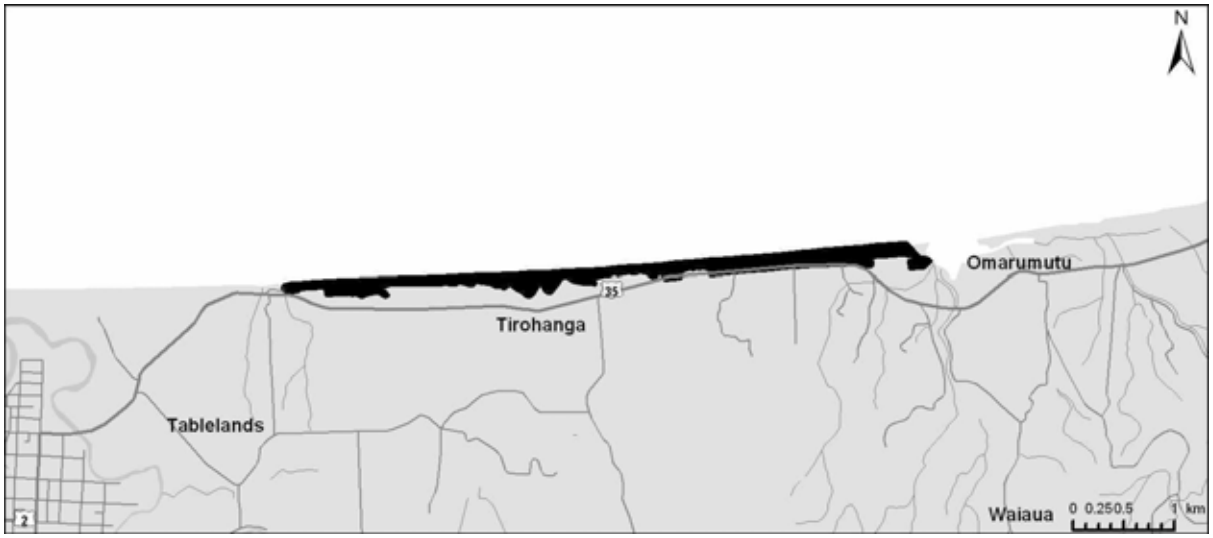
Significance Justification This is a small area which comprises one of the few remaining examples of coastal pohutukawa forest in Opotiki Ecological District (Wildland Consultants 1999a). It is subject to grazing and weed impacts.

Notes Identified as coastal vegetation of local significance in Beadel (1994a).

References Beadel 1994a; Wildland Consultants 1999a; current study.

TIROHANGA DUNES AND WETLAND

Site Number SVHZ-173
Grid Reference (NZMG) 2892506 6348027
Local Authority Opotiki District Council
Ecological District Opotiki
Status Protected (DOC, Tirohanga Dunes Conservation Area) and unprotected parts
Site Area 63.9 ha
Altitudinal Range 0-15 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Spinifex grassland.	Sand dune
Terrestrial	Lupin-boxthorn/pohuehue-bracken-blackberry-pasture species fern-vineland.	Sand dune
Terrestrial	Gorse-boxthorn scrub.	Sand dune
Terrestrial	(Gorse)/rank pasture-(blackberry) grassland.	Sand dune
Terrestrial	Bracken fernland.	Sand dune
Terrestrial	Pohuehue vineland.	Sand dune
Terrestrial	Kikuyu grassland.	Sand dune
Palustrine	Raupo reedland.	Wetland
Palustrine	Open water.	Wetland
Palustrine	Pampas tussockland.	Wetland
Palustrine	Grey willow scrub.	Wetland
	(Wildland Consultants 1999a)	

Indigenous Flora Scattered pohutukawa (Wildland Consultants 1999a).

Indigenous Fauna One pair of breeding NZ dotterel (Acutely Threatened, Nationally Vulnerable) (Bridson 2003). Common field and coastal bird species. It is likely that this area harbours many native invertebrates and lizards (Walls 1998).

Condition/Pressures Grazing by domestic stock, spread of aggressive weed species and recreational damage (both physical and indirect, e.g. by fire) represent the biggest threat to this site. Weed species include gorse, boxthorn, blackberry, lupin, woolly nightshade, inkweed, tall fescue, Yorkshire fog, ragwort, and kikuyu.

The wetland is currently in very poor condition (weed infested and high

eutrophicated), and is protected only partially from grazing stock by a single-wire standard fence.

Walls (1998) previously noted a small number of marram plants on the dunes; the site should be regularly inspected for reinvasion as this species can cause dramatic change to foredune areas (Wildland Consultants 1999a).

Local community traps mustelids, cats, rats and hedgehogs during NZ dotterel breeding season (Bridson 2003).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	H
	3.3	H
	3.4	L
	3.5	M
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	L
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	M
	3.12	L
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

Significance Justification The site contains examples of sand dune and dune wetland vegetation of moderate to degraded quality, which are nevertheless part of a long sweep of duneland and afford good opportunities for restoration. As a long, narrow site it is vulnerable to a range of pressures. Tirohanga is a breeding area for NZ dotterel, which are acutely threatened.

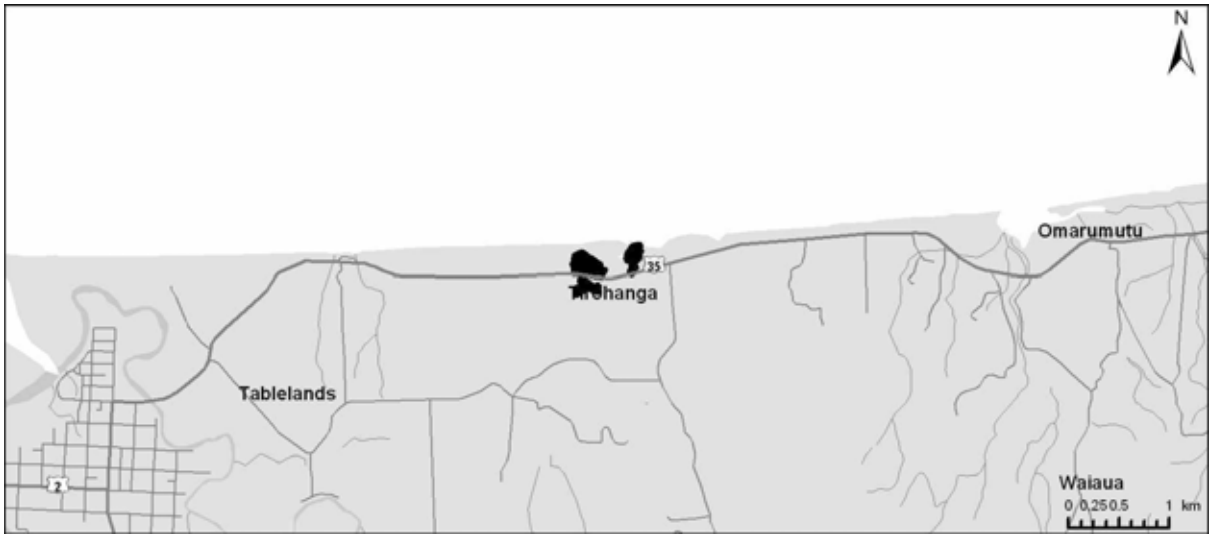
Notes 'Despite its highly modified nature, the vegetation on the dunes, especially in the eastern section, retains a strong native element in the pohuehue, bracken and spinifex' (Walls 1998).

Walls (1998) gave both the dunes and wetland conservation ranks of 'high', and emphasized the potential for restoration which the sites afforded. This site also has exceptional scenic, recreational, and cultural (pa and urupa sites) values (Wildland Consultants 1999a).

References DOC 1995; Walls 1998; Wildland Consultants 1999a; Bridson 2003.

TIROHANGA PA

Site Number SVHZ-174
Grid Reference (NZMG) 2891348 6347740
Local Authority Opotiki District Council
Ecological District Opotiki
Status Unprotected
Site Area 8.8 ha
Altitudinal Range 0-40 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa/(mahoe)-(karaka)-(kawakawa)-(houpara)-(taupata) forest.	Cliff, steep hillslope
Terrestrial	Pohutukawa treeland.	Cliff, steep hillslope
Terrestrial	Whahariki-New Zealand iceplant-pohuehue flaxland.	Cliff
Palustrine/estuarine	Raupo reedland.	Wetland
Palustrine/estuarine	Oioi-*Baumea articulata-B. juncea* sedgeland.	Wetland
Palustrine/estuarine	*Bolboschoenus fluviatilis* sedgeland.	Wetland
Palustrine/estuarine	Saltmarsh ribbonwood-(harakeke)/oioi-*Ficinia nodosa*-sea rush shrub-sedgeland. (Current study and Wildland Consultants 1999a)	Wetland

Indigenous Flora No significant species recorded (Wildland Consultants 1999a).

Indigenous Fauna Australasian bittern (Acutely Threatened, Nationally Endangered); North Island fernbird, marsh crake and banded rail (At Risk, Sparse) and common field and coastal bird species are present (Walls 1998).

Condition/Pressures Both the pohutukawa forest on Tirohanga Pa summit and the wetland margins are grazed and in poor condition. Other areas are too steep or too wet to allow stock access (Wildland Consultants 1999a).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	H
	3.4	L
	3.5	M
	3.6	H
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	M
Viability and Sustainability	3.11	L
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

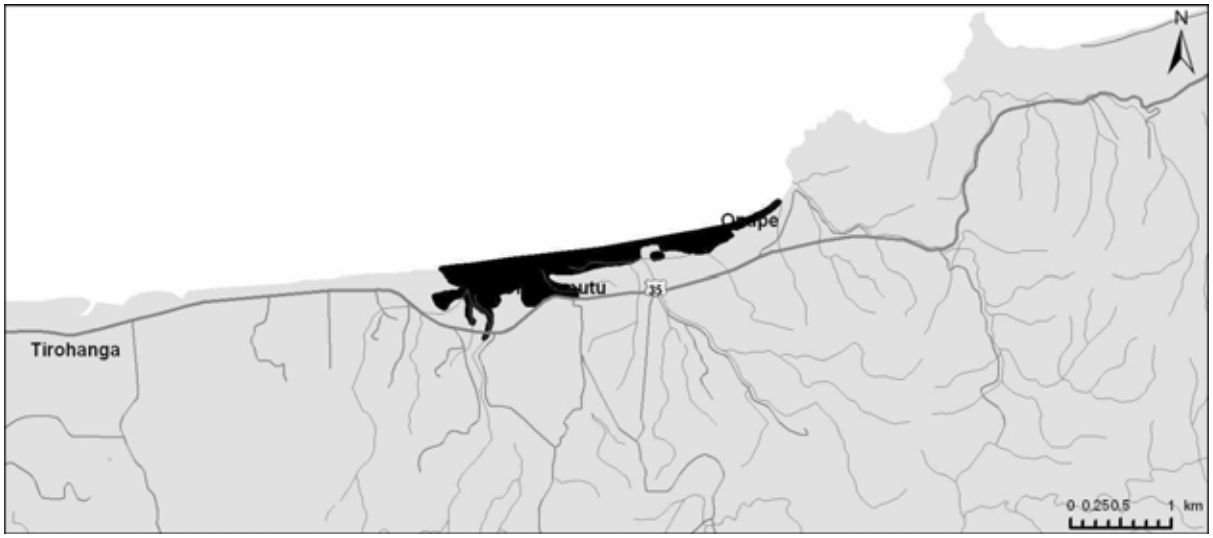
Significance Justification The major feature of this site is the relatively good quality vegetation present, including types which are now largely absent from the coastal zone of the Opotiki Ecological District. The site includes the only example of whahariki-NZ iceplant-pohuehue flaxland vegetation in the ED. Accessible areas have been impacted by grazing pressure. One nationally endangered and three at risk bird species have been recorded recently.

Notes This site includes two areas of outstanding conservation value from Walls (1998). The vegetation of the same sites were ranked as being of District (wetland area) and Local (pa on headland) significance in Beadel (1994a).

References Beadel 1994a; Walls 1998; Wildland Consultants 1999a; current study.

OMARUMUTU

Site Number SVHZ-175
Grid Reference (NZMG) 2896298 6348282
Local Authority Opotiki District Council
Ecological District Opotiki
Status Unprotected
Site Area 68.4 ha
Altitudinal Range 0-15 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial/palustrine	(*Juncus effusus*)/pasture grassland⇔raupo reedland (30%)⇔*Eleocharis sphacelata* reedland (10%).	Wetland
Terrestrial	Spinifex-pasture-*Calystegia soldanella* grassland (80%)⇔sandfield (20%).	Sand dune
Terrestrial	(Lupin)-(ngaio)-(gorse)/pohuehue-pasture-(tall fescue) grass-vineland (55%)⇔sand-spinifex sandfield⇔gorse-*Ficinia nodosa*/pasture (5%).	Sand dune
Terrestrial	Lupin-(boxthorn)/pasture-(pohuehue)-(*Calystegia soldanella*) shrubland (40%⇔lupin/spinifex grassland (60%).	Sand dune
Terrestrial	Pohuehue-pasture-(*Calystegia soldanella*) vineland (60%)⇔(lupin)/pasture-(pohuehue)-*Calystegia soldanella* grassland (25%)⇔(lupin)/spinifex grassland (15%).	Sand dune
Palustrine	Raupo reedland.	Wetland
Terrestrial	(Boxthorn)-(gorse)/pohuehue-(sea couch) vineland (80%)⇔(lupin)/pasture grassland (10%)⇔exotic iceplant-spinifex herbfield (10%).	Sand dune
Estuarine	Sea rush tussockland (55%)⇔*Bolboschoenus fluviatilis*-(*Schoenoplectus pungens*) sedgeland (40%)⇔mangrove shrubland (5%).	Intertidal flat
Estuarine	Sea rush-oioi tussockland.	Intertidal flat
Estuarine	Open water.	Estuary
Estuarine	Gorse scrub (20%)⇔oioi-sea rush sedgeland (10%)⇔sea couch grassland (60%)⇔bare mud.	Intertidal flat

Hydrosystem	Vegetation/Habitat Type	Landform
Estuarine Terrestrial Estuarine	Spinifex-sea couch grassland (90%)⇔pohuehue-sea couch vineland (10%). Sea rush tussockland (55%)⇔oioi rushland (25%). Wetland margin planted shrubland (harakeke, cabbage trees, taupata, akeake, ngaio, karo). Saltmarsh ribbonwood/sea rush tussockland. (Current study and Wildland Consultants 1999a)	Intertidal flat Sand dune Intertidal flat

Indigenous Flora

This site includes a large area of sand flats and estuary vegetation at the mouth of Waiaua River and extends along the sand dunes which the line the coast to the Opotiki Ecological District boundary at Opape.

This site contains the easternmost population of mangroves in New Zealand (Walls 1998). Pingao (Chronically Threatened, Gradual Decline) has been planted here (Wildland Consultants 1999a).

Indigenous Fauna

This estuary has significant wildlife values; it is a breeding area for NZ dotterel (Acutely Threatened, Nationally Vulnerable), pied stilts and black-backed gulls. Other important waterbird and wader birds include white heron (Acutely Threatened, Nationally Critical), Australasian bittern (Acutely Threatened, Nationally Endangered), reef heron, Caspian tern (Acutely Threatened, Nationally Vulnerable) and banded dotterel (Chronically Threatened, Gradual Decline) (Wildland Consultants 1999a). North Island fernbird (At Risk, Sparse) and NZ falcon (Acutely Threatened, Nationally Vulnerable) were also present in the early 1990s (Walls 1998). Numbers of breeding NZ dotterel (Acutely Threatened, Nationally Vulnerable) pairs here have declined from seven in 1994 to three in 2003 (Bridson 2003).

Spawning of inanga (*Galaxias maculatus*, not threatened), a culturally and commercially important species, recorded in 1988, mainly among tidally-inundated exotic grasses: tall fescue and Mercer grass (Mitchell 1990). Observed inanga spawning areas were threatened by stock trampling and grazing (Mitchell 1990). Long-finned eel (Chronically Threatened, Gradual Decline) have been recorded in the Waiaua River (NIWA 2006).

This natural area includes SSWI Site No. 39 (moderate-high rank) from Rasch (1989b).

Condition/Pressures

Most of the dunes and dune slack wetlands are heavily browsed and trampled by domestic stock, however some areas have been minimally fenced with single wires (to prevent cattle from entering saltmarsh). Many weed species are present including gorse, lupin, exotic iceplant, boxthorn, sea couch, tall fescue and other exotic grasses (Wildland Consultants 1999a).

The 'Omarumutu Wetland Enhancement Project' is a joint project between Omarumutu Marae and Environment Bay of Plenty and has resulted in the planting of a small area of freshwater wetland margin opposite the marae.

DOC has trapped mustelids, cats, rats and hedgehogs here during NZ dotterel breeding season since 1994. The local decline in NZ dotterel numbers may be related to large changes in sandspit morphology reducing available nesting areas (Bridson 2003).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	H
	3.4	H
	3.5	M
	3.6	H
Diversity and Pattern	3.7	H
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	H
Viability and Sustainability	3.11	H
	3.12	M
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

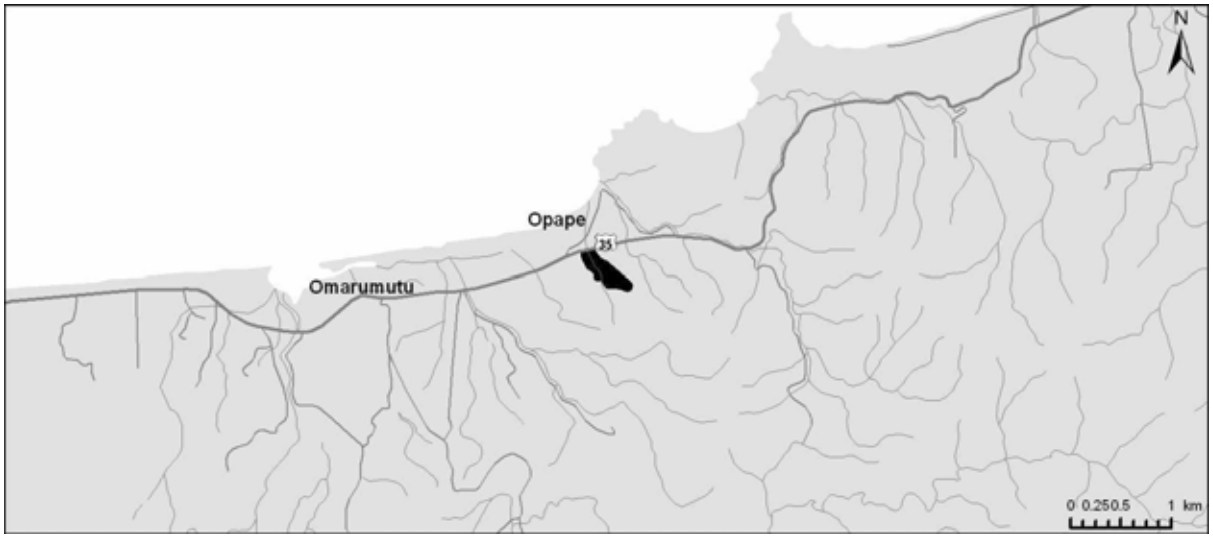
Significance Justification A moderately-sized natural area containing a wide range of representative coastal vegetation types, (Wildland Consultants 1999a). One plant species reaches its distributional limit in this site, and a chronically threatened plant species is also present. A diverse assemblage of indigenous fish, birds and invertebrates has been recorded here, including five acutely threatened, one chronically threatened, and one at risk bird species, one chronically threatened fish species, and inanga (whitebait).

Notes This site includes five sites of outstanding conservation rank, one of high conservation rank, two of moderate conservation rank and is recognised as having excellent opportunities for restoration (Walls 1998), despite extensive modification. The vegetation of the Waiaua Estuary was ranked as being of District significance in Beadel (1994a). Part of the site was ranked as a Category 1 Natural Heritage Site in Beadel *et al.* (1999b).

References Rasch 1989b; Mitchell 1990; Walls 1998; Wildland Consultants 1999a; Beadel *et al.* 1999b; Bridson 2003; NIWA 2006; current study.

OPAPE

Site Number SVHZ-176
Grid Reference (NZMG) 2898644 6348252
Local Authority Opotiki District Council
Ecological District Opotiki
Status Unprotected
Site Area 6.6 ha
Altitudinal Range 20-64 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Palustrine	Harakeke-raupo-manuka-*Baumea* spp.-swamp millet shrubland.	Wetland
Palustrine	Cabbage tree/manuka-raupo shrubland.	Wetland
Palustrine/Terrestrial	Manuka scrub.	Wetland, hillslope
Terrestrial	Kanuka-whauwhaupaku-rewarewa forest.	Steep hillslope
Terrestrial	Whauwhaupaku-mamaku scrub.	Steep hillslope
Terrestrial	Brush wattle/mamaku forest.	Steep hillslope
	(Current study and Wildland Consultants 1999a)	

Indigenous Flora No significant species recorded (Wildland Consultants 1999a).

Indigenous Fauna No specific fauna information. 'Common forest, field and wetland birds' noted in Wildland Consultants (1999a).

Condition/Pressures This site is heavily infested with brush wattle. Earthworks have been carried out on the western margin of the site recently (i.e. perhaps 2005/2006), which seems to have impacted on indigenous scrub and forest, reducing the size of the site. The steep sides above the wetland prevent the wetland from being accessed by stock, which may explain the persistence of wetland vegetation of moderate quality.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	L
	3.3	M
	3.4	L
	3.5	L
	3.6	H
Diversity and Pattern	3.7	L
Naturalness	3.8	M
Ecological Context	3.9	L
	3.10	M
Viability and Sustainability	3.11	M
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

Significance Justification Although small and degraded, this site contains one of the best remaining freshwater wetlands in the Opotiki Ecological District (Beadel 1994a). However invasive weeds are common in the vegetation around the wetland margins and also encroach into the wetland in places. Recent earthworks have reduced the size of the site.

Notes The vegetation of the Opape wetland and surrounding shrubland, scrub and forest was ranked as being of District significance in Beadel (1994a).

References Wildland Consultants 1999a; current study.

8. RAUKUMARA ECOLOGICAL REGION

8.1 Overview

The Raukumara Ecological Region comprises the Motu and Waioweka Ecological Districts. However, the latter has no coastal boundary and does not extend into the coastal zone. The Raukumara Ecological Region is characterised by the steep rugged topography of the Raukumara Range which 'forms a rugged and somewhat irregular mountain spine along the southeast side of the region. The range separates the catchments of the eastern Bay of Plenty from those of the East Cape area. Its altitude varies from about 1,000 m in the south to its highest point, Mount Hikurangi (1,764 m) in the northeast.' (Clarkson *et al.* 1986). The region incorporates the catchments of the Motu and Waioweka Rivers.

The basal geology of the region comprises mainly Jurassic and early Cretaceous greywacke.

8.2 Motu Ecological District

The dominant landform of the Motu Ecological District is the Raukumara Range which forms a rugged and somewhat irregular mountain spine along the southeast side of the district. From the central mountain range there is a series of generally west to north-trending ridge systems and deep river valleys which extend more or less to the Bay of Plenty coast. Landforms are generally more subdued towards the coast, ending in steep rugged headlands shelved by rock platforms. The greywacke rocks offer high resistance to marine erosion and the coastline is eroding only very slowly (Tortell 1981). Between the headlands are narrow low alluvial terraces and higher old coastal terraces up to 10-50 m asl (more or less continuous between Omaio and Whanarua Bay). They usually have a small scarp where they meet the sea. The coast between headlands is indented, with gravel beaches on the long exposed beaches, as at Torere, Hawai, Maraenui, Omaio and Raukokore, and finer sand and pebbles in the numerous small secluded bays. There are a number of small islets and rock stacks lying within 100-200 m off the coast which are generally connected to the mainland by the surrounding wave-cut platforms at low tide (Clarkson *et al.* 1986).

Dense forest would have covered much of the district prior to Māori occupation beginning about 1000 A.D. or earlier (Wellman 1962). Non-forest vegetation would have been restricted to coastal scrub, small wetlands, open riverbeds, subalpine scrub and alpine grassland zones. Coastal forests would have been dominated by pohutukawa, tawa, puriri, kohekohe and taraire. Elsewhere in New Zealand this species assemblage occurs only in eastern Northland and Coromandel. Today most of the coastal flats are farmed and forest occurs as small remnants or secondary stands. Forests elsewhere in the coastal zone have also been modified. Secondary communities range from bracken and manuka to tall secondary forest (dominants include kanuka, rewarewa, five finger and mamaku). Hard beech occurs in association with broad-leaved tawa and rewarewa at two sites.

Coastal scrub on headlands is dominated by *Hebe stricta* var. *macroura,* manuka, houpara, whaririki and locally *Olearia pachyphylla* (ranked Acutely Threatened, Nationally Endangered, de Lange *et al.* 2004), with scattered emergent pohutukawa. Freshwater wetlands are dominated by raupo and manuka. Cabbage tree, swamp millet, harakeke, and *Carex geminata* occur locally throughout the district in flood

channels and alongside small streams. Dominant species in the wetlands at the Raukokore River mouth are *Juncus microcephalus, Ruppia polycarpa,* saltmarsh ribbonwood and *Cyperus ustulatus.*

Two species reach their southern limit of distribution in the district; taraire (*Beilschmiedia tarairi*) and *Carmichaelia williamsii* (Acutely Threatened, Nationally Endangered). *Pimelea tomentosa* (Chronically Threatened, Serious Decline) also occurs in district (Clarkson *et al.* 1986).

Coastal areas of Motu Ecological District provide habitat for several acutely threatened bird species such as NZ dotterel, reef heron and Australasian bittern. Long-finned eel, short-jawed kōkopu and giant kōkopu, all chronically threatened fish species, have been recorded here.

Table 16: Threatened and notable species in Motu Ecological District, coastal bioclimatic zone.

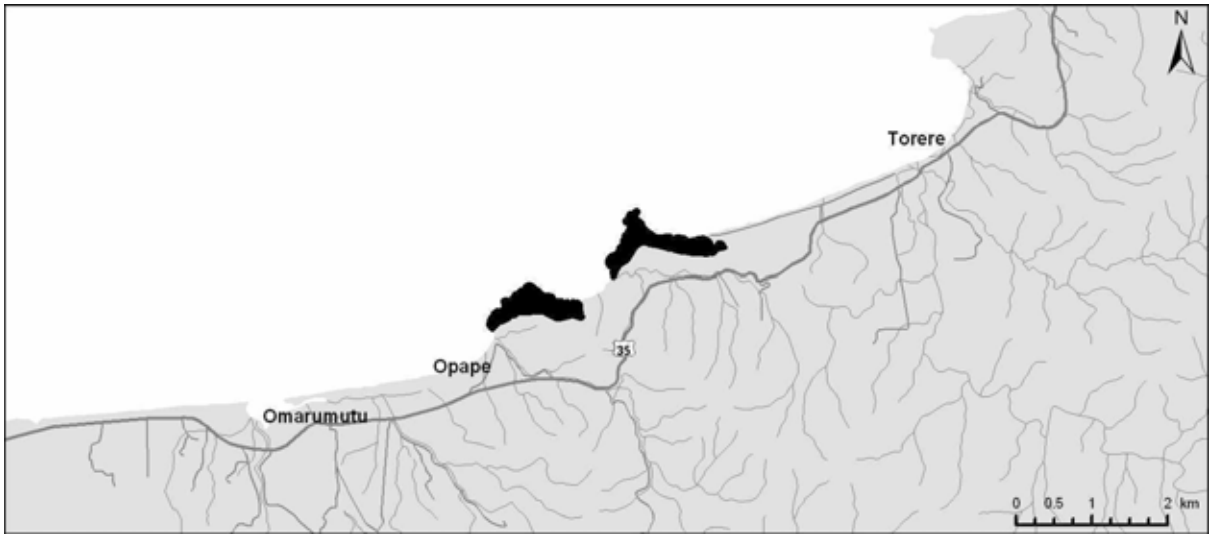
Scientific Name	Common Name	Threat Classification
BIRDS		
Acutely Threatened		
Botaurus poiciloptilus	Australasian bittern	Nationally Endangered
Falco novaeseelandiae "bush"	NZ falcon	Nationally Vulnerable
Charadrius obscurus aquilonius	NZ dotterel	Nationally Vulnerable
Egretta sacra sacra	reef heron	Nationally Vulnerable
Chronically Threatened		
Hemiphaga novaeseelandiae	kereru	Gradual Decline
Charadrius bicinctus bicinctus	banded dotterel	Gradual Decline
Sterna striata striata	white-fronted tern	Gradual Decline
Larus novaehollandiae scopulinus	red-billed gull	Gradual Decline
At Risk		
Porzana tabuensis plumbea	spotless crake	Sparse
Phalacrocorax varius varius	pied shag	Sparse
VASCULAR PLANTS		
Acutely Threatened		
Carmichaelia williamsii		Nationally Endangered
Olearia pachyphylla	thick-leaved tree daisy	Nationally Endangered
Chronically Threatened		
Pimelea tomentosa		Serious Decline
Not threatened		
Beilschmiedia tarairi[1]	taraire	Distributional limit
FRESHWATER FISH		
Chronically Threatened		
Galaxias postvectis	shortjaw kōkopu	Gradual Decline
Galaxias argenteus	giant kōkopu	Gradual Decline
Anguilla dieffenbachii	long-finned eel	Gradual Decline
At Risk		
Geotria australis[2]	lamprey	Sparse

Notes.
[1] Reaches its southern limit of distribution in Motu ED.
[2] One record from Kereu River in 1977 (NIWA 2006).

References
Clarkson *et al.* 1986; Rasch 1989a; OSNZ 1999; Beadel *et al.* 2003; OSNZ 2006; NIWA 2006.

HAURERE AND OPAPE HEADLANDS

Site Number SVHZ-177
Grid Reference (NZMG) 2899956 6349979
Local Authority Opotiki District Council
Ecological District Motu
Status Unprotected
Site Area 59.5 ha
Altitudinal Range 0-156 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa-koromiko-*Olearia pachyphylla*-whararikiki scrub.	Cliff
Terrestrial	Whauwhaupaku-mamaku scrub.	Cliff
Terrestrial	Pohutukawa/manuka scrub.	Cliff, steep hillslope
Terrestrial	Bare rock (80%) ⇔ pohutukawa scrub (20%). (Wildland Consultants 1999a)	Cliff

Indigenous Flora This is the only current known site for the thick-leaved tree daisy *Olearia pachyphylla* (Acutely Threatened, Nationally Endangered). It is common on the steep coastal cliffs here (Clarkson *et al.* 1986). A Department of Conservation survey in 2000 located 1,439 plants (Glaser 2000).

Indigenous Fauna There is an Australasian gannet colony on Haurere headland (Clarkson *et al.*1986).

Condition/Pressures Much of this site is grazed by domestic and feral animals, including possums and feral goats (Wildland Consultants 1999a). Gorse competes with *Olearia pachyphylla* for habitat outside the steep, rocky bluffs where *Olearia* is mainly found (Glaser 2000).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	H
	3.4	H
	3.5	H
	3.6	H
Diversity and Pattern	3.7	M
Naturalness	3.8	H
Ecological Context	3.9	H
	3.10	H
Viability and Sustainability	3.11	H
	3.12	H
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance National

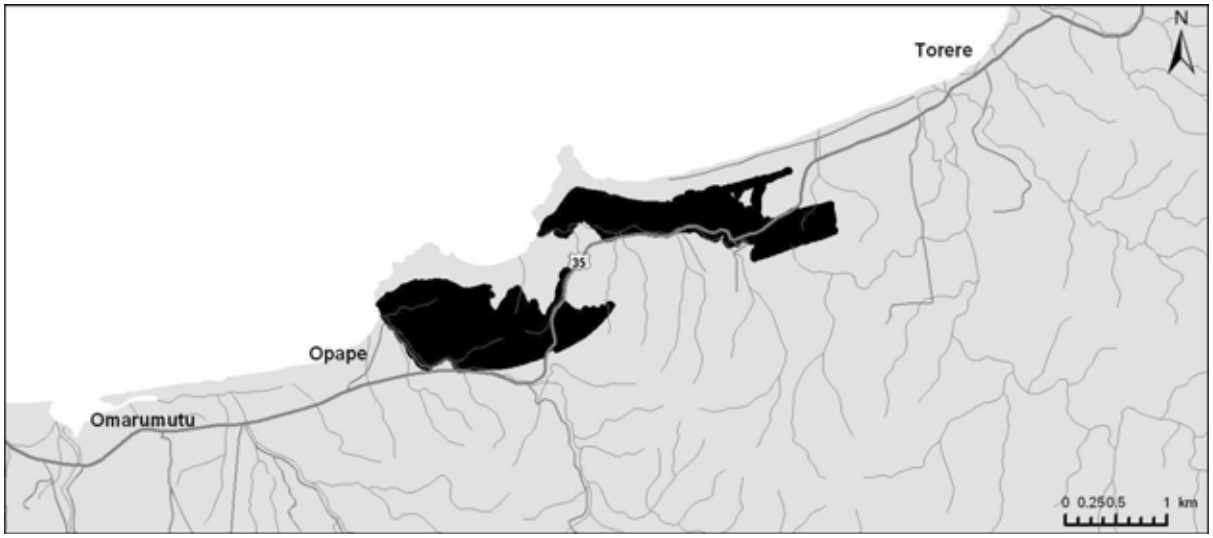
Significance Justification This site is nationally significant because it is habitat for the acutely threatened plant species *Olearia pachyphylla*, which is not known from anywhere else. The comparatively large size of the two coastal headland forest remnants within the site increase the viability of the *Olearia* population. This site is also notable as a mainland breeding colony for Australasian gannets.

Notes This site contains two priority areas for protection within the Motu Ecological District: Opape Headland (Priority One and Three) and Haurere Headland (Priority Three) (Clarkson *et al.* 1986). Beadel (1994a) ranked vegetation on the two headlands as nationally significant. This natural area was given a botanical rank of very high by Shaw (1988a).

References Clarkson *et al.* 1986; Glaser 2000.

OROI

Site Number SVHZ-178
Grid Reference (NZMG) 2900526 6349508
Local Authority Opotiki District Council
Ecological District Motu
Status Protected (DOC, Oroi Scenic Reserve) and unprotected parts
Site Area 222.4 ha
Altitudinal Range 0-180 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Manuka-*Coprosma* spp.-koromiko scrub.	Cliff, ridge and hillslope
Terrestrial	Tawa-pohutukawa-puriri forest.	Hillslope and ridge
Palustrine	Raupo reedland.	Wetland
Terrestrial	Tawa-puriri forest.	Gully
Terrestrial	Kanuka-whauwhaupaku-rewarewa forest.	Hillslope, ridge
Terrestrial	Tawa-rewarewa-puriri forest.	Hillslope
Terrestrial	Manuka scrub ⇔ pohutukawa/kamahi-kohuhu treeland.	Hillslope
Terrestrial	Willow-black wattle-manuka/bracken treeland. (Clarkson *et al.* (1986) and Wildland Consultants 1999a)	Hillslope

Indigenous Flora *Pimelea tomentosa* (Chronically Threatened, Serious Decline) is known from Oroi Scenic Reserve (Wildland Consultants 1999a).

Indigenous Fauna Kereru (Chronically Threatened, Gradual Decline) and common forest, field, wetland and coastal bird species. NZ falcon (Acutely Threatened, Nationally Vulnerable) and Australasian bittern (Acutely Threatened, Nationally Endangered) have also been reported (Rasch 1989b), as well as Long-finned eel (Chronically Threatened, Gradual Decline) (NIWA 2006). This natural area includes SSWI sites: No. 40 (moderate rank), No. 41 (moderate rank), and No. 39 (potential rank) (Rasch 1989b).

Condition/Pressures Much of this site is grazed by domestic and feral animals, including possums and feral goats. Fire risk. Continuing pressure to develop coastal areas for farming or housing. Ecological weeds such as willows and pampas are well established locally (Wildland Consultants 1999a).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	L
	3.5	H
	3.6	H
Diversity and Pattern	3.7	H
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	H
Viability and Sustainability	3.11	H
	3.12	H
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

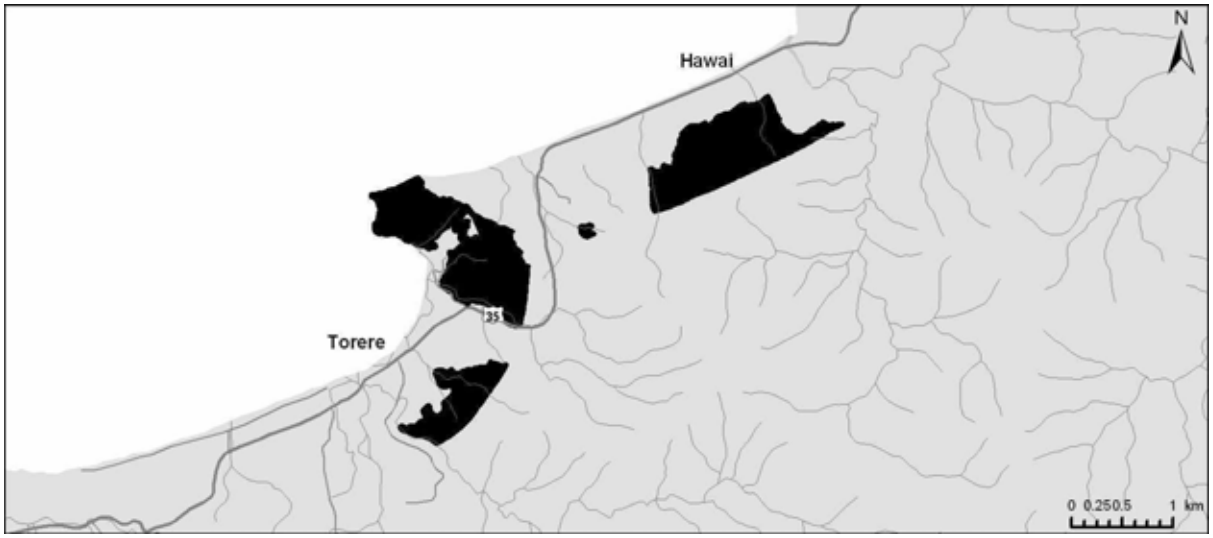
Significance Justification Oroi comprises a large, diverse and regionally important tract of coastal forest, that acts both as an essential protective buffer to the vegetation on the adjacent Opape and Haurere headlands (which support a nationally significant population of *Olearia pachyphylla*), and as an ecological linkage between coastal vegetation and large areas of primary forest on the interior ranges (including Raukumara Conservation Park and Nukutere Nga Whenua Rahui Kawenata) (Wildland Consultants 1999a). It provides habitat for a chronically threatened plant species (*Pimelea tomentosa*), and a chronically threatened forest bird species, while two acutely threatened bird species have been recorded from the site in the past. One chronically threatened fish species is known from its waterways.

Notes In Beadel (1994a) the vegetation of this site was ranked as being of District significance. The Oroi Scenic Reserve has high scenic and cultural value to Whakatohea and Ngaitama (Wildland Consultants 1999a).

References Beadel 1994a; Clarkson *et al.*1986; Rasch 1989b; Shaw 1988a; Wildland Consultants 1999a; NIWA 2006; current study.

TE WHIORAU (PART)[24]

Site Number SVHZ-179
Grid Reference (NZMG) 2906258 6352835
Local Authority Opotiki District Council
Ecological District Motu
Status Unprotected
Site Area 204.7 ha
Altitudinal Range 0-306 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Manuka-kanuka scrub ⇔ kanuka scrub and forest ⇔ kanuka-whauwhaupaku-rewarewa forest.	Cliff, hillslope, ridge
Terrestrial	Pohutukawa-puriri-tawa forest.	Cliff, hillslope
Terrestrial	Hard beech-tawa-rewarewa forest.	Hillslope, ridge
Terrestrial	Kanuka-whauwhaupaku-rewarewa forest ⇔ whauwhaupaku-mamaku forest ⇔ tawa-puriri forest.	Hillslope, ridge
Terrestrial	Kanuka scrub and forest. (Wildland Consultants 1999a)	Hillslope

Indigenous Flora Taraire reaches its southern limit of distribution in this site (Clarkson *et al.* 1986). Taraire is considered to be a regionally uncommon species (Beadel 2006).

Indigenous Fauna Kereru (Chronically Threatened, Gradual Decline) and common forest and field birds including whitehead and tomtit (Wildland Consultants 1999a). Threatened species previously recorded in the wider area (i.e. including inland forest directly adjacent) include NZ falcon (Acutely Threatened, Nationally Vulnerable) and Hochstetter's frog (At Risk, Sparse) (Rasch 1989b), however it is not clear whether these species extend into the coastal bioclimatic zone.

[24] Part of Te Whiorau occurs outside the 'coastal environment' study area (i.e. further than 1 km inland of MHWS).

Condition/Pressures Much of the site is grazed by feral and domestic animals. Feral goats are a significant threat. Further clearance of scrub and shrubland may occur in the future if coastal sites are developed for housing, farming or plantation forestry. Possums are a threat to pohutukawa (Wildland Consultants 1999a).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	H
	3.4	H
	3.5	M
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	H
Viability and Sustainability	3.11	H
	3.12	H
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

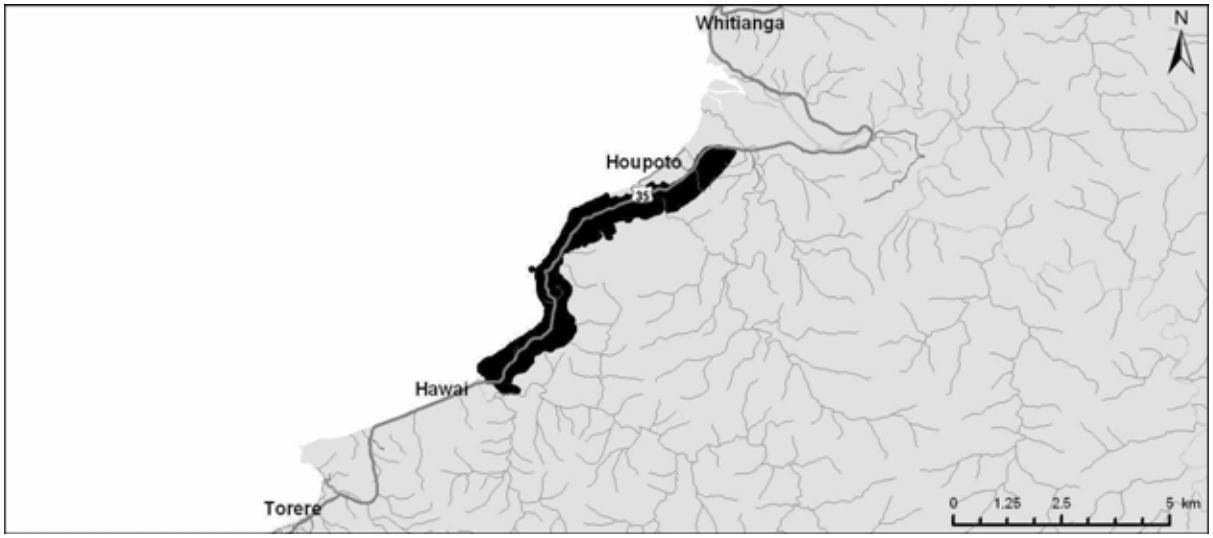
Significance Justification Whiorau forms part of a large diverse tract of indigenous forest and scrub acting as an ecological corridor from the coast to the lowland and submontane forest of the Raukumara Conservation Park (Wildland Consultants 1999a; Clarkson *et al.* 1986). This site ranks highly for distinctiveness because it contains a national plant distribution limit (of a regionally uncommon species). It also provides habitat for a chronically threatened forest bird species.

Notes First identified as a priority natural area (Category 3) for protection in Clarkson *et al.* (1986) where it was known as 'Torere Corridor'. The vegetation at this site was ranked as being of District significance in Beadel (1994a).

References Beadel 1994a; Clarkson *et al.* 1986; Wildland Consultants 1999a; Beadel 2006.

HAWAI-MOTU RIVER (PART)[25]

Site Number SVHZ-180
Grid Reference (NZMG) 2911168 6357557
Local Authority Opotiki District Council
Ecological District Motu
Status Unprotected
Site Area 433.3 ha
Altitudinal Range 0-334 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa forest and treeland.	Cliff, steep hillslope
Terrestrial	Pohutukawa-puriri-tawa forest.	Cliff, terrace
Terrestrial	Tawa-pohutukawa-puriri forest (80%) ⇔ pasture (20%).	Cliff, terrace
Terrestrial	Kanuka scrub and forest.	Cliff, terrace
Terrestrial	Kanuka-puriri-pohutukawa-(tawa) forest.	Cliff, terrace
Marine	Rockland.	Marine rock stack
Terrestrial	Manuka-*Coprosma* spp.-koromiko scrub.	Cliff
Terrestrial	Kanuka-puriri forest.	Terrace
Terrestrial	Tawa-puriri forest.	Terrace
Terrestrial	Manuka-(pohutukawa)-(exotic grasses) scrub.	Hillslope, ridge
Terrestrial	Manuka scrub ⇔ kanuka-whauwhaupaku-rewarewa scrub.	Cliff, hillslope
Terrestrial	Kanuka-whauwhaupaku-rewarewa scrub and forest.	Hillslope, basin
Terrestrial	Hard beech-tawa-rewarewa forest. (Wildland Consultants 1999a)	Hillslope

[25] Part of Hawai-Motu River occurs outside the 'coastal environment' study area (i.e. further than 1 km inland of MHWS).

Indigenous Flora This site contains one of the three best examples of pohutukawa puriri forest in the Motu Ecological District, a type much reduced from its former extent. It occurs on a low marine terrace above Te Urituki tuki beach (Clarkson *et al.* 1986).

Indigenous Fauna Kereru (Chronically Threatened, Gradual Decline) and common forest and field birds (Wildland Consultants 1999a). There is a pied shag roost at Maraenui bush (Rasch 1989b). Tokaroa Rock, a single stack (20 m high) near Te Urituki tuki Beach, supports breeding colonies of white fronted terns and red-billed gulls (Chronically Threatened, Gradual Decline) (Wildland Consultants 1999a).

This natural area includes SSWI Site Nos 47 (moderate rank), 49 (moderate rank) and 51 (moderate rank) (Rasch 1989b).

Condition/Pressures Vegetation quality is variable. Steep hillslopes, cliffs and a few patches of easier terrain are ungrazed, with a good quality understorey. Some (less steep) sites are grazed at low intensities (Wildland Consultants 1999a).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	M
	3.5	M
	3.6	M
Diversity and Pattern	3.7	M
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	H
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

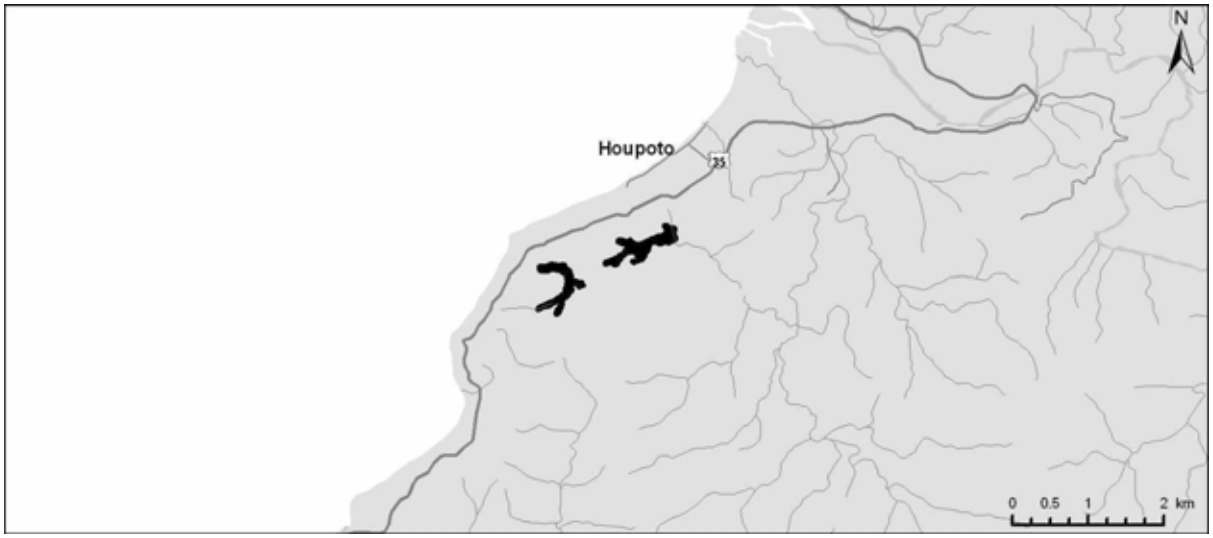
Significance Justification Overall, this natural area is a good quality remnant containing a diverse assemblage of mature and successional vegetation communities. It includes one of the three best examples of pohutukawa-puriri-tawa forest in the Ecological District, and the largest example of hard beech-dominant forest in the coastal zone of the Ecological District (Wildland Consultants 1999a). The site provides a partial buffer to the nationally significant Houpoto Swamp, which otherwise has exotic plantations around its margins. Grazing pressure appears to be limited. Two chronically threatened bird species are known from here.

Notes This site contains two recommended areas for protection in the Motu Ecological District (Te Uritukituki – Priority One and Tokaroa Rock – Priority Two) (Clarkson *et al.* 1986). The pohutukawa-puriri-tawa forest at Te Uritukituki was ranked as nationally significant for vegetation in Beadel (1994a), and there were other areas of vegetation around it ranked at regional and District significance levels.

References Beadel 1994a; Clarkson *et al.* 1986; Rasch 1989b; Wildland Consultants 1999a.

HOUPOTO SWAMP (PART)[26]

Site Number SVHZ-181
Grid Reference (NZMG) 2911988 6358307
Local Authority Opotiki District Council
Ecological District Motu
Status Unprotected
Site Area 16.0 ha
Altitudinal Range 51-96 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Palustrine	Raupo-(*Baumea rubiginosa*) reedland.	Wetland
Palustrine	Toetoe-*Carex virgata*-swamp millet tussockland.	Wetland
Palustrine	*Schoenoplectus tabernaemontani* sedgeland.	Wetland
Palustrine	*Carex geminata* tussockland.	Wetland
Palustrine	Swamp millet-*Baumea rubiginosa*-Yorkshire fog grassland.	Wetland
Palustrine	Manuka/*Gleichenia dicarpa* scrub. (Wildland Consultants 1999a)	Wetland

Indigenous Flora

Several wetland species found here are unknown elsewhere in the Motu Ecological District, including the regionally uncommon monocotyledonous herb *Sparganium subglobosum* (Clarkson *et al.* 1986).

Indigenous Fauna

There are 1997, 2004 and 2006 records of long-finned eel (Chronically Threatened, Gradual Decline) in the Houpoto Swamp (NIWA 2006), therefore this area appears to be an important habitat for this chronically threatened species.

Common wetland and field birds are present (Wildland Consultants 1999a). Spotless crake (At Risk, Sparse) have been found here in the past (Clarkson *et al.* 1986), but were not recorded when last surveyed for wildlife in the mid-1980s (Rasch 1989b). This natural area includes SSWI Site No. 48 (moderate

[26] Part of the Houpoto Swamp occurs outside the 'coastal environment' study area (i.e. further than 1 km inland of MHWS).

rank) (Rasch 1989b).

Condition/Pressures The biggest threat to this site is grazing by domestic stock, which results in the destruction of vegetation and degradation in wildlife habitat quality. Areas disturbed by grazing are often recolonised by weedy adventive species (Wildland Consultants 1999a).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	H
	3.4	H
	3.5	H
	3.6	N/A
Diversity and Pattern	3.7	M
Naturalness	3.8	H
Ecological Context	3.9	M
	3.10	H
Viability and Sustainability	3.11	H
	3.12	H
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance National

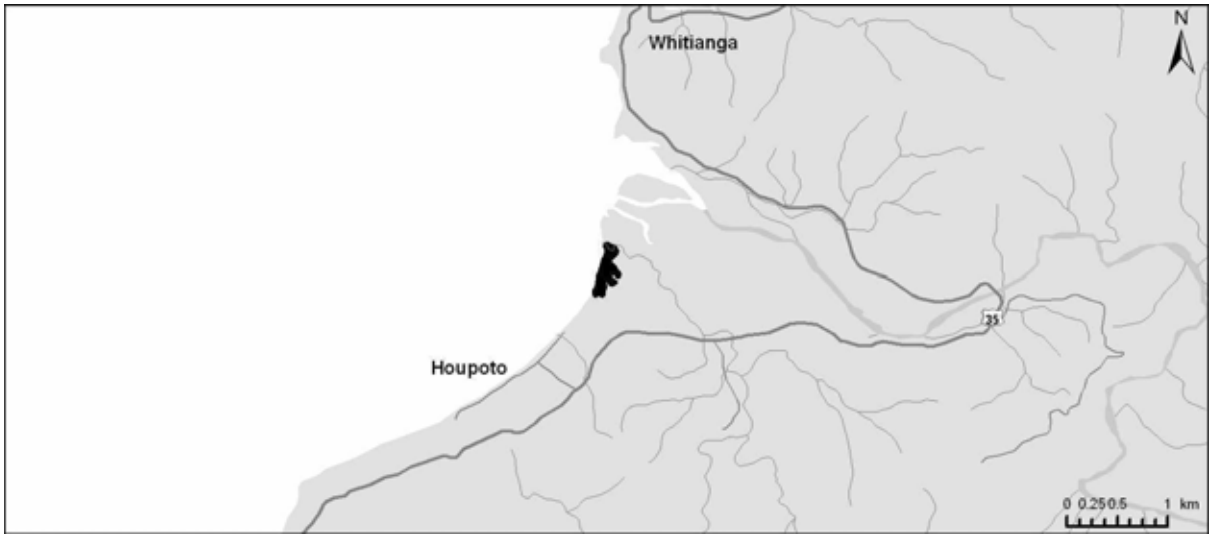
Significance Justification This site is nationally significant. It is part of a large (*c.*177 ha) intact fertile palustrine wetland. This is the largest wetland in the Motu Ecological District (Clarkson *et al.* 1986). This site supports a regionally uncommon plant species, one chronically threatened fish species, and there are records of one at risk marshbird species.

Notes This site covers 16 ha of wetland in the 'coastal environment' (i.e. up to 1 km inland from coastline), but the entire wetland is approximately 177.5 ha (Clarkson *et al.* 1986). Houpoto Swamp was identified as a Category 1 Priority Area for Protection in Clarkson *et al.* (1986).

References Beadel 1994a; Clarkson *et al.* 1986; Rasch 1989b; Wildland Consultants 1999a; NIWA 2006; Beadel 2006.

MARAENUI WETLAND

Site Number SVHZ-182
Grid Reference (NZMG) 2913672 6360742
Local Authority Opotiki District Council
Ecological District Motu
Status Unprotected
Site Area 4.4 ha
Altitudinal Range 0-4 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Palustrine	Raupo/*Baumea articulata* reedland (scattered rushes and *Cyperus eragrostis*). (Wildland Consultants 2003l)	Wetland

Indigenous Flora No information on significant species.

Indigenous Fauna No information on significant species.

Condition/Pressures This wetland is possibly at risk from grazing as it does not appear to be fenced off from the surrounding pasture. Rabbits were noted during a field visit in 2002 (Wildland Consultants 2003l).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	L
	3.3	M
	3.4	L
	3.5	L
	3.6	H
Diversity and Pattern	3.7	L
Naturalness	3.8	L
Ecological Context	3.9	M
	3.10	L
Viability and Sustainability	3.11	M
	3.12	L
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

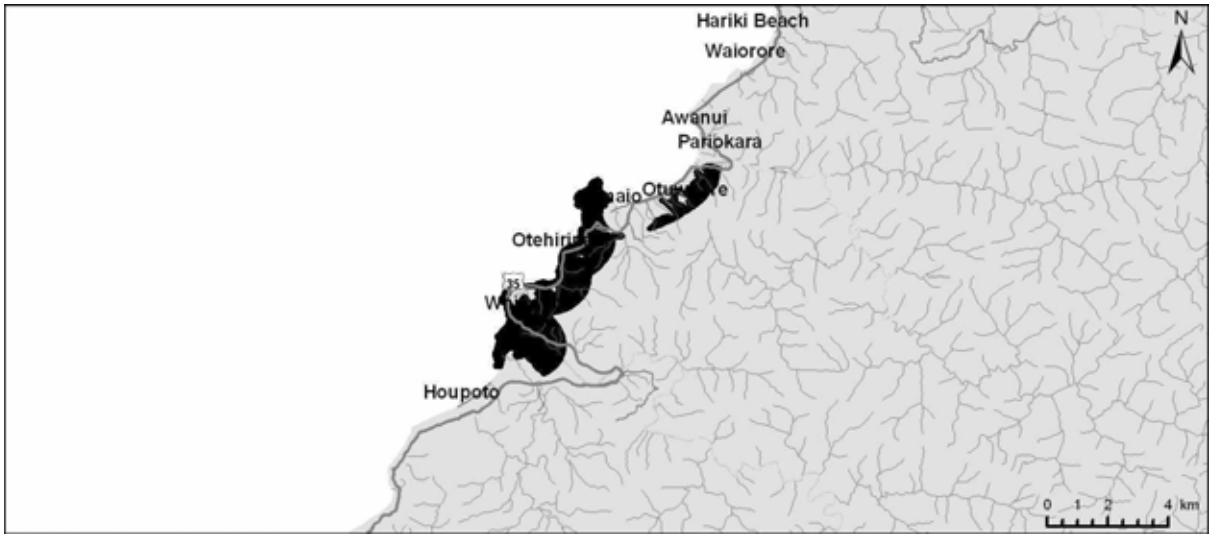
Relative Significance Local

Significance Justification Freshwater wetland which is complementary to habitats at the Motu River mouth. Coastal wetland habitat has been severely reduced in the Bay of Plenty Region, particularly through drainage.

References Wildland Consultants 2003l.

MOTU-WAIKAKARIKI RIVER (PART)[27]

Site Number SVHZ-183
Grid Reference (NZMG) 2915983 6363433
Local Authority Opotiki District Council
Ecological District Motu
Status Protected (DOC, Tokata Scenic Reserve) and unprotected parts (most of site)
Site Area 806.2 ha
Altitudinal Range 0-289 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Kanuka scrub, forest and treeland.	Hillslope
Terrestrial	Pohutukawa forest and treeland.	Cliff, terrace
Terrestrial	Manuka scrub⇔manuka-kanuka scrub.	Cliff, hillslope, ridge
Terrestrial	Tawa-pohutukawa-puriri forest.	Hillslope, gully, terrace
Terrestrial	(Pohutukawa)/broadleaved spp. scrub.	Cliff, terrace
Terrestrial	Pohutukawa-puriri-tawa forest.	Terrace, gully
Terrestrial	Whauwhaupaku-manuka scrub.	Hillslope, ridge
Terrestrial	Kanuka scrub⇔whauwhaupaku-mamaku scrub and forest.	Hillslope, ridge
Riverine	Kanuka/tree fern forest.	Terrace
Riverine	Pampas tussockland.	Terrace
Riverine	Crack willow treeland.	Terrace
Riverine	Gravelfield and boulderfield.	Terrace and channel
Terrestrial	Pohutukawa-puriri/kohekohe-*Olearia albida* forest.	Steep hillslope, cliff
Marine	Rockfield.	Marine rock platform
Marine	Sandfield.	Beach sands
	(Current study; Clarkson *et al.* 1986 and Wildland Consultants 1999a)	

[27] The majority of Motu-Waikakariki River occurs outside the 'coastal environment' study area (i.e. further than 1 km inland of MHWS).

Indigenous Flora

This site is part of a very large area of indigenous vegetation extending beyond the coastal bioclimatic zone into semi-coastal, lowland and submontane bioclimatic zones. The vegetation sequence extends from coastal pohutukawa forest and treeland, pohutukawa, puriri, broadleaved tawa forest (which are included in the present site) to lowland hard beech, tawari, kamahi, and tawheowheo forest on the boundary of Raukumara Forest Park. The vegetation is more fragmented in the coastal bioclimatic zone than in the rest of the sequence.

Pimelea tomentosa (Chronically Threatened, Serious Decline), *Disphyma australe* and *Olearia albida* x *O. paniculata* hybrids have been recorded in the Tokata Scenic Reserve (Clarkson and Regnier 1989). *Metrosideros carminea* (regionally significant plant species, Beadel 2006) is present in the reserve. Although the reserve is small in area (1.8 ha), it has a relatively diverse flora (107 plant species have been recorded in the reserve, Clarkson and Regnier 1989). There have been no detailed botanical surveys in the other parts of this site.

Indigenous Fauna

The Motu River is one of the largest North Island rivers unaffected by hydroelectric development. The gravel and boulderfields at the river mouth (which are either mobile or stabilised by pampas and crack willow) were known to support breeding NZ dotterel (Acutely Threatened, Nationally Vulnerable), breeding banded dotterel (Chronically Threatened, Gradual Decline) and reef heron (Acutely Threatened, Nationally Vulnerable), as well as common wader, waterbird and field birds (Rasch 1989b, ranked 'moderate'), however the most recent information suggests only banded dotterel currently breed here (OSNZ 1998)[28]. The Motu River mouth is also an important roost for white-fronted tern (Chronically Threatened, Gradual Decline) with up to 500 recorded at one time during summer (OSNZ 1998). Red-billed gull (Chronically Threatened, Gradual Decline) were also known to breed here (Clarkson *et al.* 1986).

The forested areas of this site have high wildlife values and support large populations of common forest birds, including kereru (Chronically Threatened, Gradual Decline), whitehead and tomtit (Wildland Consultants 1999a). There are mid-1980s records of NZ falcon (Acutely Threatened, Nationally Vulnerable) and North Island brown kiwi (Chronically Threatened, Serious Decline) (Rasch 1989b), but no recent records are known. Long-finned eel and shortjaw kōkopu (Chronically Threatened, Gradual Decline) were recorded here in the 1970s (NIWA 2006).

Condition/Pressures

Possums. Low goat density east of Motu River (Wildland Consultants 1999a).

Within Tokata Scenic Reserve there are moderate possum numbers and occasional domestic stock. Rubbish dumping, fires and tracking by recreational users present the biggest current threat (DOC 1995).

[28] Motu River mouth has not been surveyed for NZ dotterel by the Department of Conservation in recent years (Bridson 2003).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	H
	3.4	M
	3.5	H
	3.6	N/A
Diversity and Pattern	3.7	H
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	H
Viability and Sustainability	3.11	H
	3.12	M
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

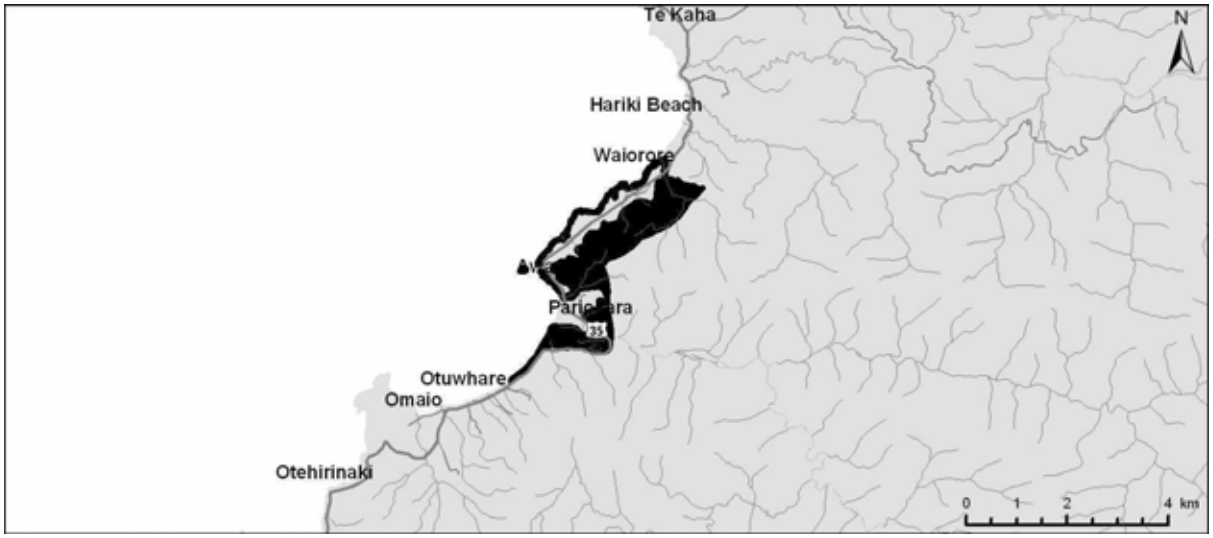
Relative Significance National

Significance Justification Motu-Waikakariki is a very large coastal forest component of a much larger ecological sequence extending from coastal to sub-montane habitats. The pohutukawa forest elements are large examples of a nationally-under-represented type. As part of a large, representative tract of vegetation which has been identified as one of the two most important corridors from coastal to inland areas in the Motu Ecological District, this site is nationally significant. One chronically threatened and one regionally uncommon plant species are known from here, there are recent records of two chronically threatened bird species, and past records of several other acutely and chronically threatened birds and freshwater fish.

References Beadel 1994a; Clarkson *et al.* 1986; Rasch 1989b; Wildland Consultants 1999a; OSNZ 1998; Bridson 2003; NIWA 2006; current study.

HAPARAPARA RIVER (PART)[29]

Site Number SVHZ-184
Grid Reference (NZMG) 2921263 6369031
Local Authority Opotiki District Council
Ecological District Motu
Status Protected (Nga Whenua Rahui Kawenata) and unprotected parts
Site Area 289.2 ha
Altitudinal Range 0-255 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Tawa-puriri forest.	Hillslope, terrace
Terrestrial	Pohutukawa forest and treeland.	Cliff, terrace, rocky islet
Terrestrial	Taraire-tawa forest.	Terrace
Terrestrial	Tauhinu scrub.	Alluvial flat, terrace
Riverine	Riverbed (boulderfield, gravelfield, sandfield and open water).	Alluvial flat, beach sands
Terrestrial	Tawa-pohutukawa-puriri forest.	Hillslope
Terrestrial	Manuka scrub.	Hillslope, ridge
Terrestrial	Manuka scrub (80%) ⇔ kanuka scrub and forest (10%) ⇔ whauwhaupaku-mamaku forest (10%).	Hillslope, ridge
Terrestrial	Tawa-kamahi-rewarewa forest.	Hillslope
Terrestrial	Pohutukawa-tawa-puriri forest ⇔ hard beech-tanekaha-rewarewa forest.	Hillslope, ridge
Terrestrial	Kanuka forest and scrub.	Hillslope
Terrestrial	Puriri-kanuka-(tawa)-(kohekohe) forest.	Hillslope
Riverine	(Puriri)-(karaka)/pasture treeland.	Terrace
Riverine	Kanuka forest and treeland.	Terrace
Riverine	(Pohuehue)-(*Ficinia nodosa*) gravelfield.	Terrace
Riverine	Pampas-tutu shrub-grassland.	Terrace
Terrestrial	Whauwhaupaku-mamaku scrub.	Steep hillslope
Terrestrial	Kanuka-whauwhaupaku-rewarewa forest.	Steep hillslope

[29] Part of Haparapara River occurs outside the 'coastal environment' study area (i.e. further than 1 km inland of MHWS).

Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	(Radiata pine)/kanuka-whauwhaupaku-mamaku-(pohutukawa)-(puriri) forest. (Current study and Wildland Consultants 1999a)	Gully

Indigenous Flora

This site includes one of the only examples of taraire-dominant forest in the Opotiki District. There are also examples of moderate quality pohutukawa forest (a formerly widespread vegetation type) along the coastline (Wildland Consultants 1999a). No rare or threatened plant species are known from here, however detailed surveys have not been carried out.

Indigenous Fauna

Common forest, field, wader and coastal bird species, including kereru and banded dotterel (Chronically Threatened, Gradual Decline). This site includes the Awanui pied shag colony of several hundred birds (Clarkson *et al.* 1986; Wildland Consultants 1999a).

The Haparapara River is recognised as an area of outstanding wildlife value; the only salmonid-free river in the district and one of the few such rivers in New Zealand. It supports populations of threatened fish species, short-jawed kōkopu and giant kōkopu (Chronically Threatened, Gradual Decline) (Rasch 1989b), and long-finned eel (NIWA 2006).

This site is part of a much larger area of contiguous indigenous forest with wildlife values ranging from moderate-high to outstanding. Threatened species known from further inland include North Island weka, North Island kaka, whio (all Acutely Threatened, Nationally Endangered), NZ falcon (Acutely Threatened, Nationally Vulnerable), North Island brown kiwi (Chronically Threatened, Serious Decline), kereru (Chronically Threatened, Gradual Decline), Hochstetter's frog (At Risk, Sparse), and kakariki (Rasch 1989b; Wildland Consultants 1999a).

Condition/Pressures

Grazing by domestic stock, firewood collection, and development for farms, forestry or residential properties are all potential threats. Possums, mustelids and feral cats are well established (Wildland Consultants 1999a).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	H
	3.4	M
	3.5	H
	3.6	M
Diversity and Pattern	3.7	H
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	H
Viability and Sustainability	3.11	H
	3.12	M
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

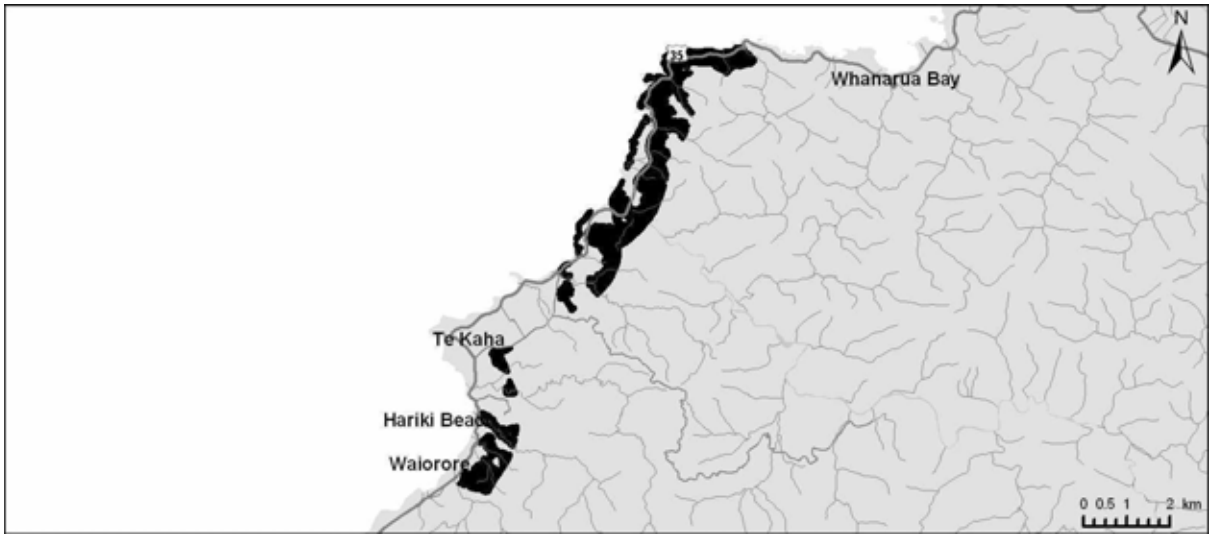
Significance Justification This site is a moderately large example of intact indigenous vegetation which encompasses a diverse assemblage of coastal forest types (contiguous with semi-coastal forest outside the 'coastal environment') and a river mouth of outstanding wildlife value (Wildland Consultants 1999a). It is a good quality example of indigenous vegetation/habitat that is representative of the ecological character of the region. There are past or recent records of three chronically threatened freshwater fish species, recent records of two chronically threatened bird species, and older records of several other acutely and chronically threatened bird species.

Notes This site includes Motunui Island, which is apparently the site of an urupa and is a Maori reserve managed by a Trust Board (David Demant, neighbouring landowner, pers. comm. 2006).

References Clarkson *et al.* 1986; Rasch 1989b; Wildland Consultants 1999a; current study.

TE KAHA (PART)[30]

Site Number SVHZ-185
Grid Reference (NZMG) 2926054 6376681
Local Authority Opotiki District Council
Ecological District Motu
Status Unprotected
Site Area 412.6 ha
Altitudinal Range 0-222 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa/houpara forest.	Marine island
Terrestrial	Pohutukawa forest and treeland.	Cliff, terrace
Terrestrial	(Pohutukawa)/pasture treeland.	Terrace, cliff
Terrestrial	Pohutukawa-puriri-tawa forest.	Terrace, gully
Terrestrial	Kanuka scrub and forest.	Terrace, gully
Terrestrial	Manuka-(pohutukawa) scrub (70%) ⇔ manuka-(gorse) scrub (30%).	Cliff, hillslope
Terrestrial	Kanuka-whauwhaupaku-mamaku scrub and forest (50%) ⇔ whauwhau-mamaku scrub and forest (50%).	Hillslope, terrace
Riverine	Tawa-puriri forest ⇔ hard beech-pohutukawa forest.	Hillslope, ridge
Terrestrial	Riverbed and open water.	Alluvial flat
Terrestrial	Manuka-*Coprosma* spp.-koromiko scrub ⇔ kanuka scrub.	Ridge, hillslope, terrace
Terrestrial	Pohutukawa-puriri-tawa forest ⇔ hard beech-pohutukawa forest.	Hillslope
Terrestrial	Manuka scrub.	Ridge, spur
Terrestrial	Whauwhaupaku-mamaku scrub and forest ⇔ kanuka scrub and forest ⇔ manuka-*Coprosma* spp.-koromiko scrub.	Hillslope, ridge

[30] Part of Te Kaha occurs outside the 'coastal environment' study area (i.e. further than 1 km inland of MHWS).

Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Kanuka-whauwhaupaku-rewarewa forest (60%) ⇔ whauwhaupaku-mamaku forest (20%) ⇔ pohutukawa-puriri-tawa forest (20%).	Hillslope, ridge, terrace
Terrestrial	Manuka-gorse-(pampas) shrubland.	Steep hillslope, scarp
Terrestrial	Brush wattle/manuka-(gorse)-(akeake) forest.	Steep hillslope
Riverine	Crack willow/pasture treeland.	Alluvial flat
Riverine	Pampas tussockland.	Alluvial flat
	(Current study and Wildland Consultants 1999a)	

Indigenous Flora

No significant plant species have been recorded here (Wildland Consultants 1999a).

Indigenous Fauna

Contiguous with a large tract of indigenous vegetation which was ranked being of high wildlife value by Rasch 1989b (SSWI Site Nos 57, 61 and 62). Threatened species which are known from the overall large tract include North Island kaka (Acutely Threatened, Nationally Endangered), NZ falcon, long-tailed bat (both Acutely Threatened, Nationally Vulnerable), kereru (Gradual Decline), Hochstetter's frog (At Risk, Sparse), and kakariki (Rasch 1989b). Wildland Consultants (1999a) also report North Island weka, whio (both Acutely Threatened, Nationally Endangered) and North Island brown kiwi (Chronically Threatened, Serious Decline) from the general area.

There are recent (2003) long-finned eel (Chronically Threatened, Gradual Decline) records from the Puremutahuri Stream and the Kereu River, and an older record (1977) from the Whakaataua Stream. Lampreys (At Risk, Sparse) have also been recorded in the Kereu River, but only in 1977 (NIWA 2006).

Condition/Pressures

Grazing by domestic stock, firewood collection and development for farms, forestry or housing. Possums are well established (Wildland Consultants 1999a). Vegetation dominated by manuka and gorse on steep hillslopes has a high fire risk.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	H
	3.3	H
	3.4	L
	3.5	H
	3.6	H
Diversity and Pattern	3.7	H
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	H
	3.12	M
	3.13	H

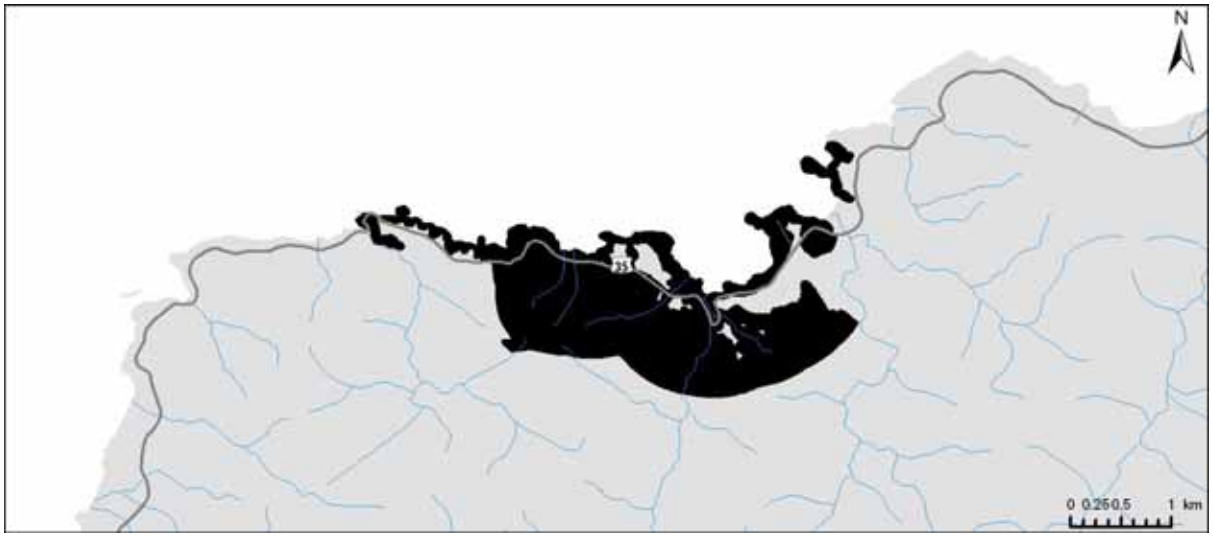
* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance	Regional
Significance Justification	Part of a large tract of contiguous indigenous vegetation extending from coastal pohutukawa-dominant forest, through regenerating kanuka and manuka-dominant communities into primary mixed podocarp-broadleaved forest in the hinterland. This corridor is considered to be ecologically important due to its large size and intactness. This site contains small, narrow examples of pohutukawa forest. Pohutukawa forest was once common in the Motu Ecological District but has been greatly reduced from its former extent (Wildland Consultants 1999a). There are recent records of a chronically threatened fish species, and a range of acutely, chronically threatened, and at risk fauna species have been reported from the general area in the past.
Notes	Areas of manuka-gorse shrubland in the northern part of the site have been included since the survey by Wildland Consultants (1999a). On slopes too steep for forestry or farming, densely regenerating manuka has increased to a height of 2-3 m and shelters several other regenerating coastal shrubs and trees, including karamu, *Coprosma lucida*, hangehange, akepiro, houpara, tauhinu, pohutukawa, mamaku and mapou. Gorse and pampas are more common on the very steep parts of the coastal scarp where disturbance is more frequent, however these areas also support regenerating indigenous species and are an integral part of the vegetation sequence. If left undisturbed this area is likely to develop into coastal indigenous forest (but may include a component of wilding pines if these are not controlled).
References	Clarkson *et al.*1986; Wildland Consultants 1999a; NIWA 2006; current study.

WHANARUA (PART)[31]

Site Number	SVHZ-186
Grid Reference (NZMG)	2931879 6379881
Local Authority	Opotiki District Council
Ecological District	Motu
Status	Protected (DOC, Whanarua Bay Scenic Reserve and QEII covenants) and unprotected parts
Site Area	333.5 ha
Altitudinal Range	0-380 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa forest and treeland.	Cliff, terrace
Terrestrial	Pohutukawa/houpara forest ⇔ houpara-kohuhu forest ⇔ oioi-sea rush-sedge and rushland.	Marine island
Terrestrial	Kanuka scrub and forest.	Hillslope, terrace
Terrestrial	Manuka scrub.	Hillslope, terrace
Terrestrial	Tawa-pohutukawa-puriri forest.	Hillslope, terrace
Terrestrial	Pohutukawa/puriri-tawa-karaka forest.	Steep hillslope
Terrestrial	Whauwhaupaku-mamaku-manuka-(radiata pine) scrub.	Steep hillslope
Terrestrial	(Rimu)-(miro)/tawa-kamahi-rewarewa forest.	Steep hillslope
Terrestrial	Hard beech-tawa-rewarewa forest.	Steep hillslope
Terrestrial	Hard beech-(rewarewa) forest.	Steep hillslope
	(Current study and Wildland Consultants 1999a)	

Indigenous Flora

This site is part of the mostly unprotected Whanarua-Kereu corridor (with a total area of 9,552 ha), which comprises a complete altitudinal sequence of vegetation from the coast to the lowland and montane forests of the interior East Cape region (Clarkson *et al.* 1986).

Carmichaelia williamsii (Acutely Threatened, Nationally Endangered) occurs

[31] Part of Whanarua occurs outside the 'coastal environment' study area (i.e. further than 1 km inland of MHWS).

on coastal cliffs within and around the QEII covenant (Clarkson *et al.* 1986; Andrew Glaser pers. comm. 2006). This is one of the two known mainland Bay of Plenty populations of this strictly coastal native broom species (NZPCN 2006).

Several plants of *Linum monogynum* are present on the coastal cliffs around Maraehako Bay (Greg Jenks pers. comm. 2006). *Metrosideros carminea* is also present (Clarkson *et al.* 1986). Both of these plants are considered to be regionally uncommon (Beadel 2006).

The Scenic Reserve includes part of one of the three best examples of pohutukawa-puriri-tawa forest and tawa-pohutukawa-puriri forest in Motu Ecological District; and the Motupapaku and Kaimeanui Islands are the best examples of island habitat in the ED (Clarkson *et al.*1986).

Indigenous Fauna

Kereru (Chronically Threatened, Gradual Decline) and common forest, field and coastal birds (Wildland Consultants 1999a). This natural area includes SSWI Site No. 63 – Whanarua Stream (high rank) (Rasch 1989b).

A range of fish and amphibian species are known from the Whanarua Stream and tributaries, including Hochstetter's frog (At Risk, Sparse); shortjaw kōkopu, giant kōkopu (Chronically Threatened, Gradual Decline); and other galaxiid species (Rasch 1989b). The only recent records for a threatened fish species are for shortjaw kōkopu and long-finned eel (Chronically Threatened, Gradual Decline) (NIWA 2006).

Condition/Pressures

Grazing by domestic stock, firewood collection, and development for farms, forestry or housing are all potential threats. Possums and various weed species on reserve margins. Care needs to be taken to avoid damage when the radiata pine stand within the reserve boundary is harvested. Wilding pines are beginning to establish. There are also several weed infestations (some apparently originating from the residential areas), including *Senecio petasitis*, strawberry dogwood, wild ginger and brush wattle.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	H
	3.4	H
	3.5	M
	3.6	M
Diversity and Pattern	3.7	H
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	H
	3.12	H
	3.13	H

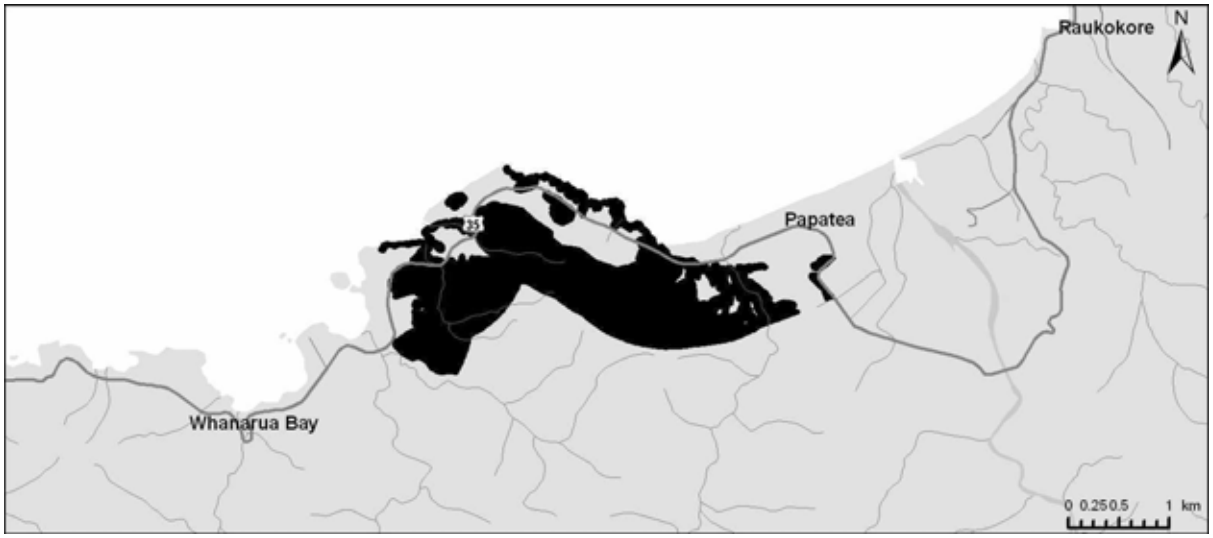
* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance	National
Significance Justification	Whanarua comprises large examples of high quality, representative vegetation, including nationally under-represented vegetation types. Whanaraua forms part of one of the major ecological corridors in the Motu Ecological District, which includes an ecological sequence from coastal to submontane habitats. This site is also nationally significant because it provides critical habitat for an acutely threatened plant species (one of only two mainland populations in the Bay of Plenty). There are recent or past records of three chronically threatened fish species, one at risk reptile species, and one chronically threatened forest bird species.
References	Beadel 1994a; Clarkson *et al.* 1986; Rasch 1989b; Wildland Consultants 1999a; Beadel 2006; current study.

WAIMANU (PART)[32]

Site Number	SVHZ-187
Grid Reference (NZMG)	2935600 6381279
Local Authority	Opotiki District Council
Ecological District	Motu
Status	Unprotected
Site Area	290.7 ha
Altitudinal Range	0-351 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Manuka-(pohutukawa) scrub.	Cliff, hillslope, ridge
Terrestrial	Tawa-puriri forest.	Hillslope, terrace
Terrestrial	Whauwhaupaku-mamaku scrub and forest.	Hillslope
Terrestrial	Pohutukawa forest and treeland.	Cliff, terrace
Terrestrial	Whauwhaupaku-mamaku scrub ⇔ manuka scrub.	Hillslope
Palustrine	(Crack willow)-(manuka)-(cabbage tree)/raupo-*Eleocharis sphacelata-Carex geminata* reedland. (Current study and Wildland Consultants 1999a)	Wetland

Indigenous Flora No significant species recorded.

Indigenous Fauna Kereru (Chronically Threatened, Gradual Decline) and common forest and field birds (Wildland Consultants 1999a).

No response to audio tapes for spotless crake and fernbird calls (current study).

Condition/Pressures Grazing by domestic stock, firewood collection, and development for farms, forestry or residential properties are all potential threats (Wildland Consultants 1999a).

[32] Part of Waimanu occurs outside the 'coastal environment' study area (i.e. further than 1 km inland of MHWS).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	L
	3.5	H
	3.6	H
Diversity and Pattern	3.7	H
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	H
Viability and Sustainability	3.11	H
	3.12	M
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

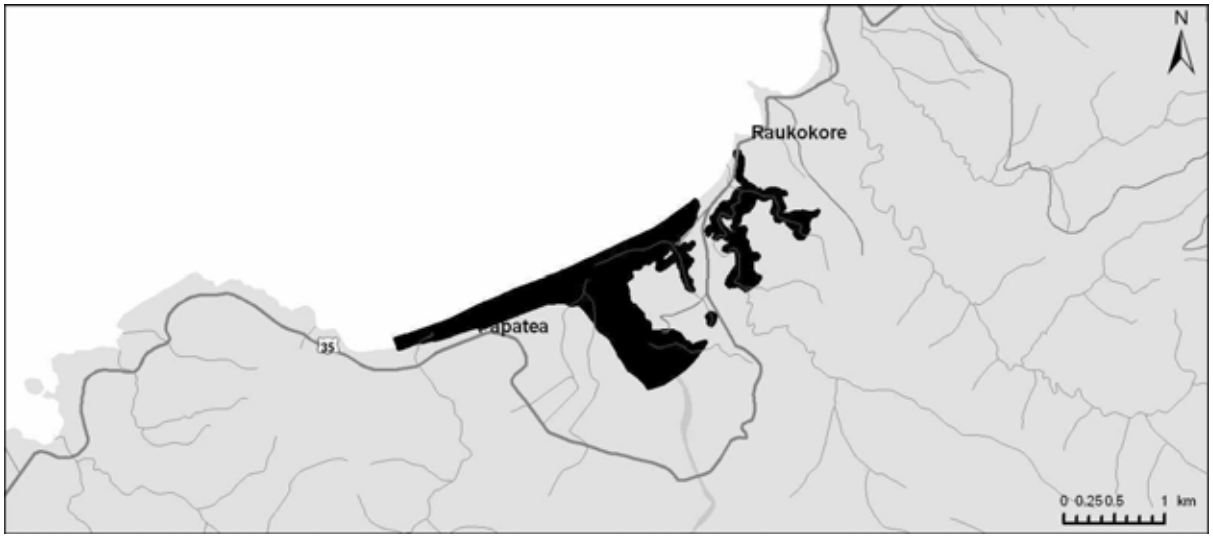
Relative Significance Regional

Significance Justification This is a large area of secondary indigenous vegetation which includes pohutukawa forest at various stages of regeneration, a vegetation type that was once widespread along the Motu Ecological District coastline. The raupo-dominant wetland at the eastern side of this site is a good quality, representative wetland. This site forms part of an ecological linkage between protected areas at the coast and in the hinterland beyond the coastal bioclimatic zone (Wildland Consultants 1999a). Habitat for one chronically threatened forest bird species.

References Clarkson *et al.*1986; Wildland Consultants 1999a; current study.

RAUKOKORE MOUTH

Site Number SVHZ-188
Grid Reference (NZMG) 2939257 6382297
Local Authority Opotiki District Council
Ecological District Motu (river mouth habitats), Pukeamaru (forest remnants to east)
Status Unprotected
Site Area 156.4 ha
Altitudinal Range 0-70 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Riverine	Sandfield, gravelfield, shingle and river channel.	Beach, alluvial flat and sand plain
Terrestrial	Lupin-pohuehue-tauhinu vine-shrubland.	Sand dune, sand plain
Terrestrial	Pohutukawa forest and treeland.	Cliff and sand plain
Palustrine	Raupo reedland.	Dune hollow wetland
Palustrine	Ti kouka treeland.	Dune hollow wetland
Palustrine	Oioi-(*Cyperus ustulatus*)-saltmarsh ribbonwood sedgeland.	Alluvial flat wetland
Terrestrial	Tauhinu scrub.	Alluvial flat
Terrestrial	Manuka scrub.	Moderate hillslope
Terrestrial	Kanuka scrub	Hillslope
Terrestrial	Kanuka-pohutukawa-(puriri)-(rewarewa)-(taraire) forest.	Moderate hillslope
Terrestrial	Taraire forest.	Terrace
Terrestrial	Blackberry vineland.	Sand plain
Palustrine	*Juncus microcephalus* rushland.	Dune hollow wetland
Palustrine	Harakeke flaxland	Dune hollow wetland
Palustrine	Pasture.	Dune hollow wetland
Palustrine	Lagoon.	Dune hollow wetland
Terrestrial	Pohutukawa-taraire forest.	Gully, terrace
Terrestrial	Tawa-taraire-puriri-pohutukawa forest.	Gully, terrace
Terrestrial	Pohutukawa-broadleaved species forest.	Hillslope
	(Current study and Wildland Consultants 1999a)	

Indigenous Flora

This is one of only two known localities on the Bay of Plenty mainland where a native coastal broom species, *Carmichaelia williamsii* (Acutely Threatened, Nationally Endangered) occurs (recorded by Clarkson *et al.*

1986 and still present in 2006 (Andrew Glaser pers. comm.)).

In the late 1980s the lagoon had a plant assemblage comprising *Ruppia polycarpa* and *Stuckenia pectinata*[33] (now ranked as At Risk, Sparse) which were both uncommon elsewhere in the Motu Ecological District (Regnier *et al.* 1988; Clarkson *et al.* 1986). This is the only example of lagoon vegetation in the Motu Ecological District (Clarkson *et al.*1986).

This is the only known location for taraire in Pukeamaru Ecological District, and is also the eastern limit of taraire in New Zealand (Regnier *et al.* 1988). Regnier *et al.* (1988) reported the very small (1 ha) taraire remnant as being in excellent condition, however in 2006 it was observed to be grazed by stock, with little or no understorey, and probably little regeneration of taraire. Taraire forest would probably once have been much more extensive in the area.

Indigenous Fauna

The Raukokore lagoon, river mouth and lower section of the braided river bed have high wildlife values (Wildland Consultants 1999a). Special features include Caspian tern (Acutely Threatened, Nationally Vulnerable), small numbers of breeding banded dotterel (Chronically Threatened, Gradual Decline), and a breeding colony of southern black-backed gulls at the Raukokore River mouth (Clarkson *et al.* 1986; Rasch 1989b).

Includes SSWI Site No. 65 (Raukokore River Delta Wetland; moderate-high rank) and Site No. 64 (Papatea Swamp; potential rank) (Rasch 1989b).

Condition/Pressures

A major threat to the site is the spread of invasive weeds which alter natural plant communities (e.g. blackberry, lupin, *Juncus microcephalus*). Kikuyu grass is particularly rampant on the terrestrial margins of the river mouth wetlands, suppressing regeneration of all native species. There are also several plants of horticultural origin naturalising in the area, including yucca, agapanthus, and arum lily. Other threats to the area include damage from recreational users, domestic stock grazing, dumping of old motor vehicles, fire risk of campfires and dumping of gravel in wetlands during earthworks for road development. The latter is particularly worrying as this lagoon is the only intact example of this landform in the Motu Ecological District (Clarkson *et al.* 1986).

[33] Formerly known as *Potamogeton pectinatus.*

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	H
	3.4	H
	3.5	H
	3.6	H
Diversity and Pattern	3.7	H
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	H
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance National

Significance Justification Raukokore Mouth is a large site containing a high diversity of landforms and indigenous vegetation types, several of which are nationally or regionally under-represented, rare or distinctive. The natural character of the site is heavily impacted from a range of ongoing pressures. The site contains one acutely threatened (one of only two mainland populations), two at risk, and one plant species at its national limit of distribution. There are past records of both acutely and chronically threatened bird species.

Notes The lower Raukokore River was identified as a Priority One Area for protection in Clarkson *et al.* (1986).

References Clarkson *et al.*1986; Regnier *et al.* 1988; Rasch 1989b; Wildland Consultants 1999a; current study.

9. EAST CAPE ECOLOGICAL REGION

9.1 Overview

The East Cape Ecological Region comprises Pukeamaru, Waiapu and Turanga Ecological Districts. It is a diverse region including the Pukeamaru range, the coastal lowlands and hills to the east and south of the Raukumara Range, and the Gisborne Plains. A feature of the region is the mudstones, sandstones and siltstones which occur throughout the region. Only the western portion of the Pukeamaru Ecological District is within the Bay of Plenty Region.

9.2 Pukeamaru Ecological District

The Pukeamaru Ecological District is based on the Pukeamaru Range (991 m asl). There are steeply dissected low hills (approximately 100-480 m) of siltstone in the east and west of the district. Low and rolling hill country includes the foothills of the Raukumara and Pukeamaru Ranges. There are several wide, flat-bottomed river valleys and a series of narrow coastal terraces in the west, north-east, east and throughout the Wharekahika Graben. The rugged, cliffed coastal zone is drained to the west by the Whangaparaoa River, to the north by the Wharekahika and Awatere Rivers and to the east by the Waiapu River.

Tall forest would have covered much of the district prior to Māori occupation. Non-forest vegetation would have been restricted to sand dunes, coastal scrub, small wetlands and open riverbeds.

Pohutukawa and houpara are common on the coastal cliffs. Puriri, tawa and kohekohe, with or without pohutukawa, are found on coastal hillslopes. Coastal slopes on the Matakaoa Range also have podocarps (kahikatea, matai and rimu) associated with tawa, puriri and pohutukawa on less well drained sites, colluvial hillslopes and marine terraces. Mangeao, common in tawa and puriri forests, is largely confined to the Matakaoa Range. On unstable sea cliffs and hillslopes, particularly along the coast near Te Araroa, scrub and shrubland species include kanuka, manuka, taupata, *Coprosma robusta*, tutu (*Coriaria arborea*), five finger (*Pseudopanax arboreus*), *Pittosporum ralphii,* kohuhu (*Pittosporum tenuifolium* subsp. *tenuifolium*), tauhinu (*Ozothamnus leptophylla*) and whatariki. Kowhai ngutukaka (*Clianthus puniceus*[34]; ranked Acutely Threatened, Nationally Critical, de Lange *et al.* 2004) was probably once more common in this vegetation class but now has a very local distribution, and *Brachyglottis perdicioides* (Chronically Threatened, Gradual Decline)[1] also may have been more common but again has a very local distribution now.

Freshwater wetlands have been greatly reduced in extent. Species common in the remaining areas include *Carex virgata*, spike sedge (*Eleocharis acuta*), giant spike sedge, *Baumea rubiginosa*, *B. articulata*, harakeke, swamp coprosma and manuka. Intertidal flats at the Whangaparaoa and Karakatuwhero River mouths are probably close to their original extent and composition and are dominated by *Schoenoplectus pungens,*

[34] Not known from within the Bay of Plenty Region.

Isolepis cernua, arrow grass (*Triglochin striata*), sea rush, oioi, *Ficinia nodosa* and saltmarsh ribbonwood.

Spinifex, pingao, *Austrofestuca littoralis* (Chronically Threatened, Gradual Decline)[1] and *Carex pumila* would once have been common on dunes. However indigenous sand dune communities have been much reduced in extent and while spinifex is often present, adventive species are now common.

Small populations of threatened plant species occur in the Bay of Plenty part of this Ecological District: *Carmichaelia williamsii* (ranked Acutely Threatened, Nationally Endangered, de Lange *et al.* 2004), *Pimelea tomentosa* (Chronically Threatened, Serious Decline) and pingao (Chronically Threatened, Gradual Decline) (Regnier *et al.* 1988).

Coastal areas around the Whangaparaoa river mouth contain a high proportion of the indigenous fauna diversity of this Ecological District, particularly NZ dotterel and giant kōkopu.

Table 17: Threatened and notable species in Pukeamaru Ecological District (Bay of Plenty Region), coastal bioclimatic zone.

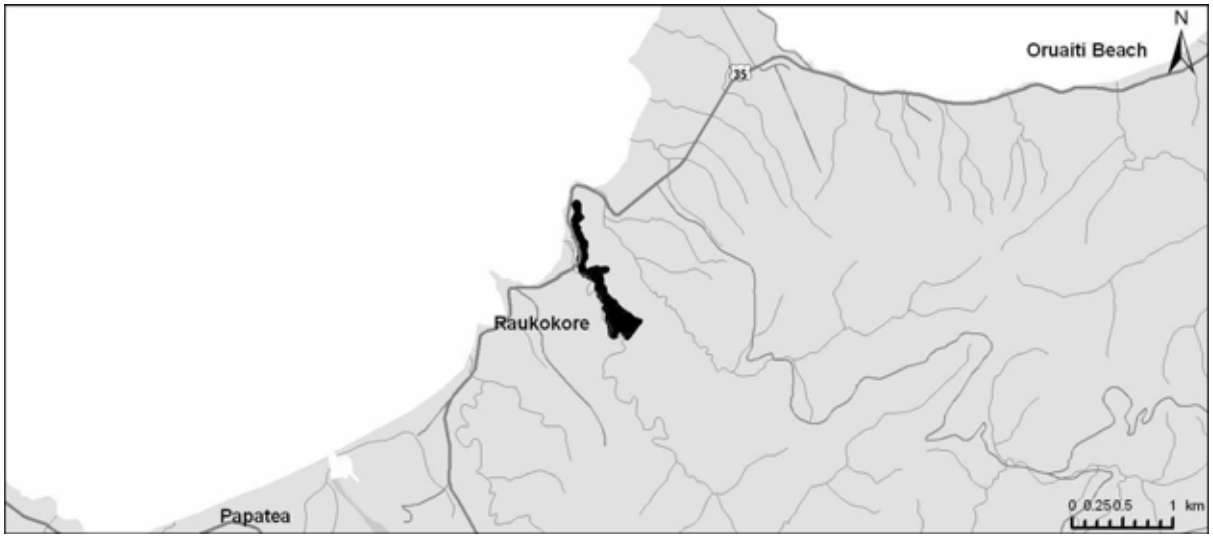
Scientific Name	Common Name	Threat Classification/ Significance
BIRDS		
Acutely Threatened		
Botaurus poiciloptilus	Australasian bittern	Nationally Endangered
Charadrius obscurus aquilonius	NZ dotterel	Nationally Vulnerable
Chronically Threatened		
Hemiphaga novaeseelandiae	kereru	Gradual Decline
Charadrius bicinctus bicinctus	banded dotterel	Gradual Decline
Sterna striata striata	white-fronted tern	Gradual Decline
At Risk		
Porzana tabuensis plumbea	spotless crake	Sparse
Bowdleria punctata vealeae	North Island fernbird	Sparse
VASCULAR PLANTS		
Chronically Threatened		
Pimelea tomentosa		Serious Decline
FRESHWATER FISH		
Chronically Threatened		
Galaxias argenteus	giant kōkopu	Gradual Decline
Other Notable Species		
Galaxias maculatus[1]	inanga	Not threatened

Notes.
[1] Spawning sites on major rivers and estuaries.

References
Clarkson *et al.* 1986; Rasch 1989b; OSNZ 1999; Beadel *et al.* 2003; OSNZ 2006; NIWA 2006.

WAIOKAHA STREAM CORRIDOR (PART)[35]

Site Number SVHZ-189
Grid Reference (NZMG) 2941590 6384152
Local Authority Opotiki District Council
Ecological District Pukeamaru
Status Unprotected
Site Area 12.0 ha
Altitudinal Range 12-60 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa treeland.	Steep hillslope
Terrestrial	Pohutukawa-puriri-tawa forest.	Steep hillslope, terrace
Terrestrial	Kanuka-broadleaved species forest. (Wildland Consultants 1999a)	Hillslope, terrace.

Indigenous Flora No significant species have been recorded here.

Indigenous Fauna Common forest birds present (Wildland Consultants 1999a).

Condition/Pressures Grazing (Wildland Consultants 1999a).

[35] Part of Waiokaha Stream Corridor occurs outside the 'coastal environment' study area (i.e. further than 1 km inland of MHWS).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	L
	3.3	M
	3.4	L
	3.5	L
	3.6	H
Diversity and Pattern	3.7	L
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	M
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

Significance Justification This site is locally significant because it contains coastal vegetation which is part of an ecological corridor linking the coast with the hinterland. The pohutukawa-dominant forest has previously been noted as significant because this vegetation type has been greatly reduced in extent in the Pukeamaru Ecological District (Wildland Consultants 1999a). It has high potential for restoration. There is little flora and fauna information available for this site.

Notes This site includes the coastal portion of a secondary indigenous vegetation corridor (mainly comprising secondary vegetation) extending *c.*5 km inland along the Waiokaha Stream.

References Regnier *et al.* 1988; Wildland Consultants 1999a.

TAURANGA STREAM (PART)[36]

Site Number SVHZ-190
Grid Reference (NZMG) 2941906 6384565
Local Authority Opotiki District Council
Ecological District Pukeamaru
Status Unprotected
Site Area 19.9 ha
Altitudinal Range 14-53 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa-puriri forest.	Gully.
Terrestrial	Kanuka-manuka-(broadleaved species) scrub and forest. (Wildland Consultants 1999a)	Gully, terrace.

Indigenous Flora No significant plant species were recorded here (Wildland Consultants 1999a).

Indigenous Fauna Common forest and field birds (Wildland Consultants 1999a). The stream is relatively unmodified and probably provides native fish habitat, though no information is available.

Condition/Pressures Grazed and used as a firewood source. Proximity to settlements, recreation use and the flammable nature of much of the vegetation means that future disturbance is probable (Wildland Consultants 1999a).

[36] Part of Tauranga Stream occurs outside the 'coastal environment' study area (i.e. further than 1 km inland of MHWS).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	L
	3.3	M
	3.4	L
	3.5	L
	3.6	H
Diversity and Pattern	3.7	L
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	M
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

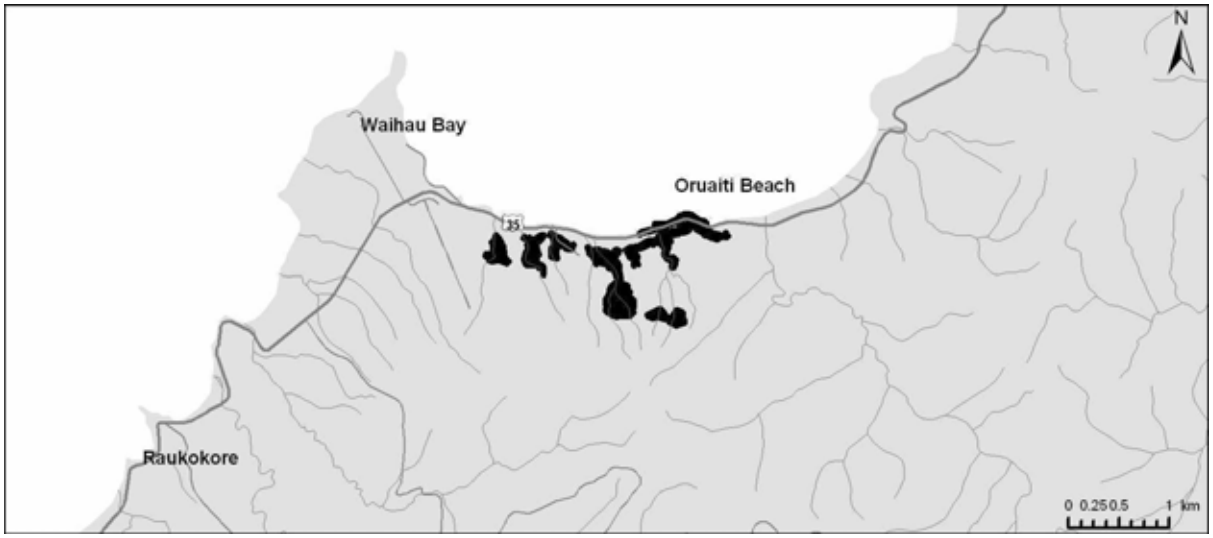
Significance Justification This site is locally significant because it is part of an ecological corridor linking the coast with the hinterland, and contains characteristic coastal indigenous vegetation. The riparian vegetation provides protection for a small unmodified stream, which may have good quality aquatic habitat. It has high potential for restoration, but requires more detailed survey. There is little flora and fauna information available for this site.

Notes This site includes the coastal portion of a secondary indigenous riparian vegetation corridor extending 2 km inland along the Tauranga Stream.

References Regnier *et al.* 1988; Wildland Consultants 1999a.

WAIHAU POHUTUKAWA REMNANTS

Site Number SVHZ-191
Grid Reference (NZMG) 2945142 6385765
Local Authority Opotiki District Council
Ecological District Pukeamaru
Status Unprotected
Site Area 34.7 ha
Altitudinal Range 0-94 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa forest.	Terrace, cliff
Terrestrial	Pohutukawa-puriri forest and treeland.	Steep hillslope
Terrestrial	Pohutukawa-puriri-kanuka forest. (Wildland Consultants 1999a)	Terrace, gully

Indigenous Flora This site comprises small examples of pohutukawa forest which increase in canopy species diversity as they extend inland. On gentle terraces adjacent to the beach there is little other than pohutukawa, while on steep faces of the coastal scarp there is also frequent puriri, and the larger remnants on top of the older terrace also have frequent kanuka and occasional rewarewa, kohekohe, karaka, tawa, rimu, and kahikatea in the canopy.

Indigenous Fauna Common forest birds, including bellbird, North Island fantail and tui heard in 2006.

Condition/Pressures None of these remnants are fenced and the understorey is consequently in poor condition, consisting of grazed pasture. There are extensive areas of Japanese honeysuckle in ungrazed parts of the understorey next to State Highway 35. Coastal residential development is occurring around this site.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	L
	3.3	L
	3.4	L
	3.5	M
	3.6	H
Diversity and Pattern	3.7	L
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	M
	3.12	L
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

Significance Justification This site comprises small examples of pohutukawa forest which increase in canopy species diversity further from the coast. These remnants are part of a representative semi-continuous altitudinal vegetation sequence from coastal to lowland and montane forest, which is also one of the largest tracts of forest remaining in the Pukeamaru Ecological District (Regnier *et al.* 1988). Fragmentation and understorey grazing are the major pressures operating on this site, which is also a regionally significant geological site.

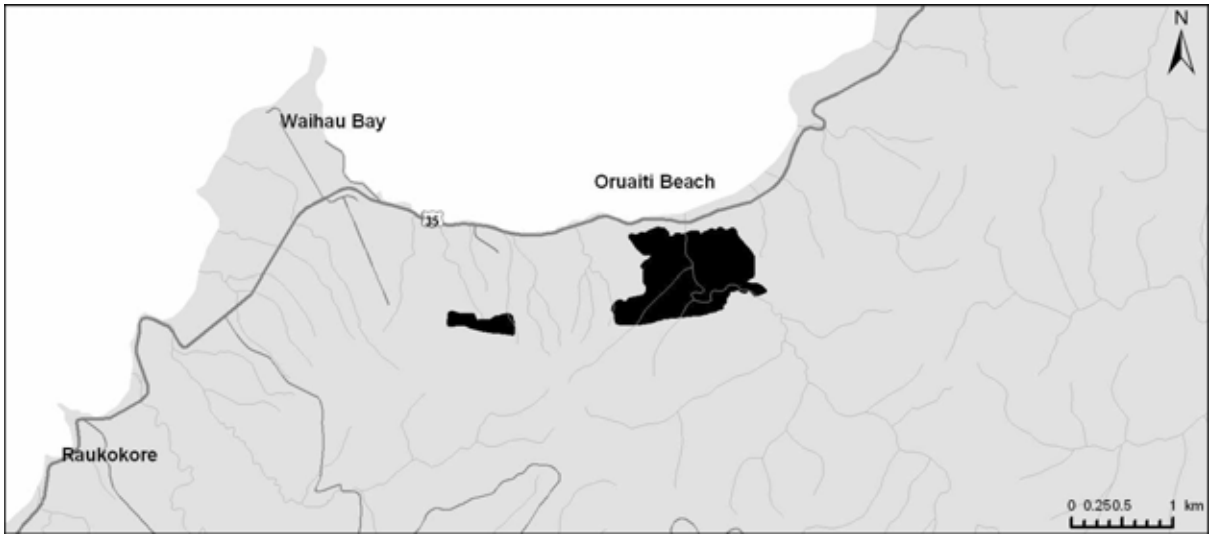
Notes This site is part of a Category 1 Priority Area for protection in Regnier *et al.* (1988).

Best preserved sequence of uplifted Quaternary marine terrace along Bay of Plenty-East Cape coast – regionally important (Kenny and Hayward 1996).

References Regnier *et al.* 1988; Rasch 1989b; Kenny and Hayward 1996; Wildland Consultants 1999a; current study.

TE RANGINUI (PART)[37]

Site Number SVHZ-192
Grid Reference (NZMG) 2946563 6385614
Local Authority Opotiki District Council
Ecological District Pukeamaru
Status Unprotected
Site Area 87.7 ha
Altitudinal Range 7-121 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Tawa-puriri forest.	Terrace, hillslope
Terrestrial	Kanuka forest.	Terrace, hillslope
Terrestrial	Tawa-puriri forest ⇔ hard beech forest.	Terrace, hillslope
Terrestrial	Broadleaved species shrubland and forest.	Hillslope
Terrestrial	Puriri-pohutukawa forest.	Hillslope
	(Current study and Wildland Consultants 1999a)	

Indigenous Flora No significant species recorded (Wildland Consultants 1999a).

Indigenous Fauna Kereru (Chronically Threatened, Gradual Decline) and common forest and field birds (Wildland Consultants 1999a). This area includes SSWI Site Nos 72 and 73 (potential rank) (Rasch 1989b).

Condition/Pressures Heavy grazing in understorey in the margins of the site on the coastal side, and poor canopy condition (notable dieback). Pampas and wild ginger are encroaching on the freshwater wetland.

[37] Part of Te Ranginui occurs outside the 'coastal environment' study area (i.e. further than 1 km inland of MHWS).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	H
	3.4	L
	3.5	H
	3.6	H
Diversity and Pattern	3.7	H
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	H
Viability and Sustainability	3.11	H
	3.12	H
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance National

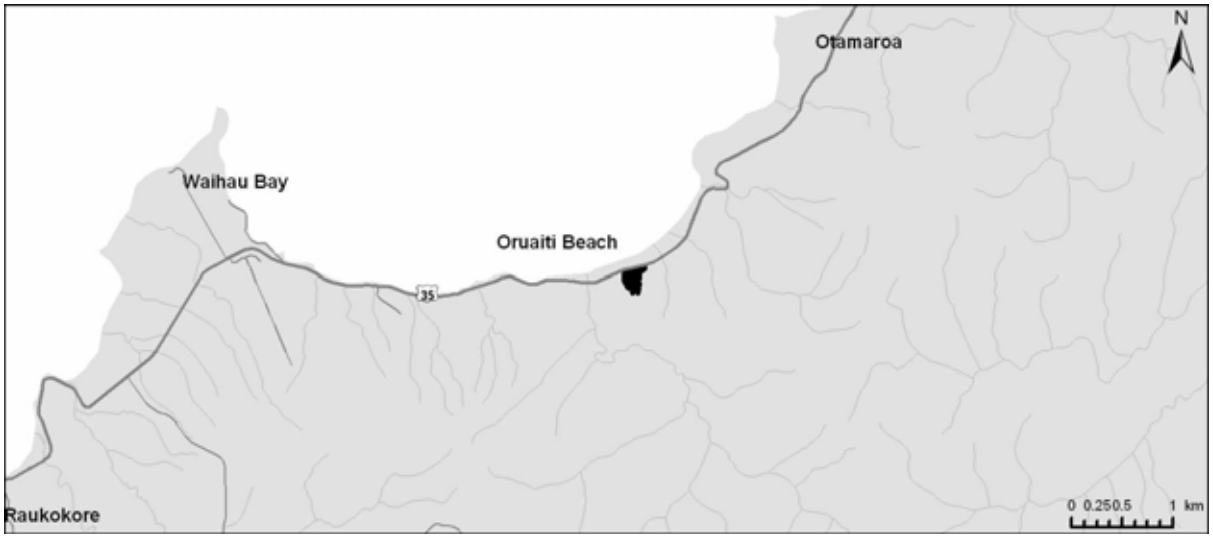
Significance Justification This site is part of a large (3,640 ha) representative tract of indigenous vegetation forming an altitudinal sequence from coastal to lowland forest. It was identified as a Category 1 Priority Area in Regnier *et al.* (1988) and part of the site was ranked as coastal vegetation of national significance in Beadel (1994a).

Contains representative example of coastal vegetation that is part of an extensive nationally significant forest tract.

References Beadel 1994a; Rasch 1989b; Regnier *et al.* 1988; Wildland Consultants 1999a; current study.

ORUAITI WETLAND

Site Number SVHZ-193
Grid Reference (NZMG) 2946563 6385614
Local Authority Opotiki District Council
Ecological District Pukeamaru
Status Unprotected
Site Area 2.8 ha
Altitudinal Range 7-10 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Palustrine	Raupo-*Ficinia nodosa*-wild ginger-*Cyperus ustulatus* reedland. (Current study)	Wetland

Indigenous Flora No significant species recorded.

Indigenous Fauna No response to spotless crake and fernbird audio tapes at the raupo reedland (current study).

Condition/Pressures Pampas and wild ginger are encroaching.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	L
Rarity or Distinctive Features	3.2	L
	3.3	M
	3.4	L
	3.5	L
	3.6	M
Diversity and Pattern	3.7	L
Naturalness	3.8	L
Ecological Context	3.9	H
	3.10	L
Viability and Sustainability	3.11	L
	3.12	L
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

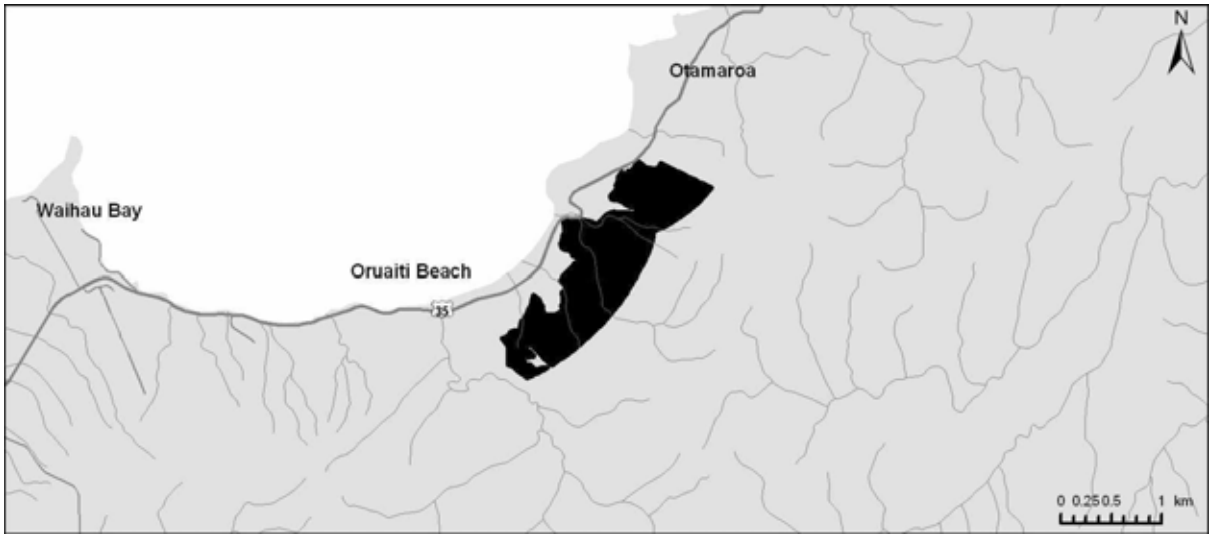
Relative Significance Local

Significance Justification This small wetland is locally significant as an example of coastal palustrine reedland. This vegetation type has been severely reduced in area in the Bay of Plenty through drainage and disturbance. It is contiguous with a large area of indigenous forest (Te Ranginui) which increases its long-term viability and its value to wildlife.

References Current study.

ORUAITI (PART)[38]

Site Number	SVHZ-194
Grid Reference (NZMG)	2948268 6386635
Local Authority	Opotiki District Council
Ecological District	Pukeamaru
Status	Protected (Nga Whenua Rahui Kawenata) and unprotected parts
Site Area	142.9 ha
Altitudinal Range	17-197 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa/broadleaved species forest.	Steep hillslope
Terrestrial	Tawa-puriri forest.	Steep hillslope
Terrestrial	Tawa-puriri-pohutukawa forest.	Steep hillslope
Terrestrial	Kanuka scrub and forest.	Steep hillslope
Terrestrial	Manuka scrub.	Steep hillslope
Terrestrial	Broadleaf species scrub and forest.	Steep hillslope
Terrestrial	Hard beech forest.	Steep hillslope
	(Regnier *et al.* 1988 and Wildland Consultants 1999a)	

Indigenous Flora

Pimelea tomentosa (Chronically Threatened, Serious Decline), *Lindsaea linearis*, and *Pimelea longifolia* may occur in the post-fire vegetation (e.g. manuka and kanuka scrub) within this site (Regnier *et al.* 1988).

Hard beech forest is not common in the coastal bioclimatic zone (Regnier *et al.* 1988).

Indigenous Fauna

Common forest and field birds (Wildland Consultants 1999a).

Condition/Pressures

Feral goats, pigs, and possums (Wildland Consultants 1999a). Grazing, subdivision and residential development. Wild ginger is a particularly bad weed infestation at this site (current study).

[38] Part of Oruaiti occurs outside the 'coastal environment' study area (i.e. further than 1 km inland of MHWS).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	L
	3.3	M
	3.4	L
	3.5	M
	3.6	N/A
Diversity and Pattern	3.7	H
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	H
Viability and Sustainability	3.11	H
	3.12	H
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance National

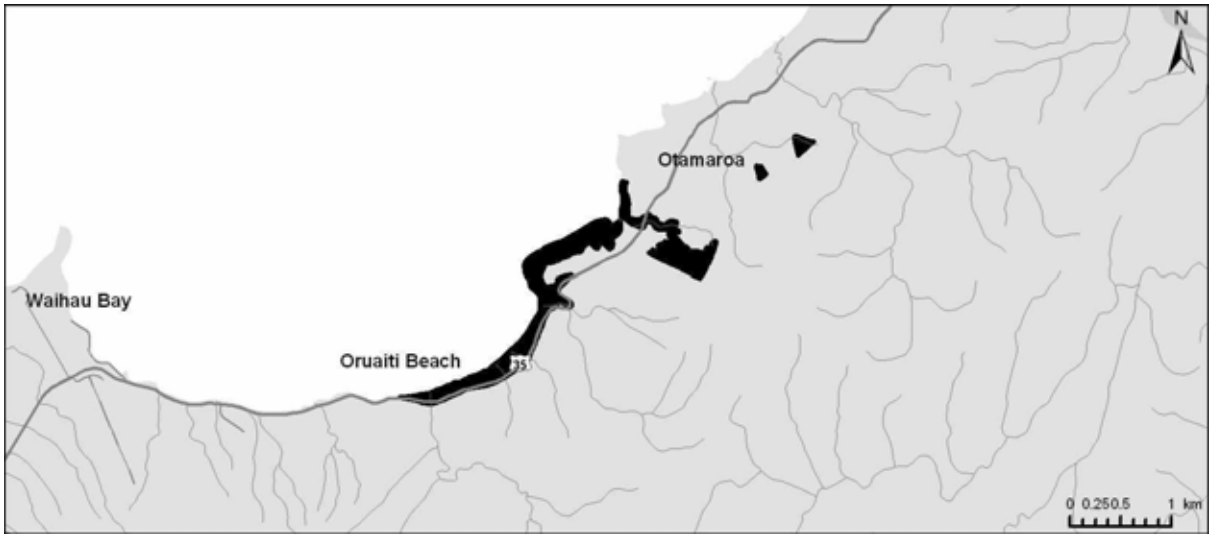
Significance Justification This site is part of a large (3,640 ha) representative tract of indigenous vegetation forming an altitudinal sequence from coastal to lowland forest. It was identified as a Category 1 Priority Area in Regnier *et al.* (1988) and most of the site was ranked as coastal vegetation of national significance in Beadel (1994a). It contains representative examples of vegetation types that are nationally under-represented or regionally distinctive. A range of pressures common to coastal habitats in the Bay of Plenty east of Opotiki are present.

Notes Best preserved sequence of uplifted Quaternary marine terrace along Bay of Plenty-East Cape coast – regionally important (Kenny and Hayward 1996).

References Regnier *et al.* 1988; Kenny and Hayward 1996; Wildland Consultants 1999a; current study.

TAPUAEHARURU (PART)[39]

Site Number	SVHZ-195
Grid Reference (NZMG)	2948128 6387300
Local Authority	Opotiki District Council
Ecological District	Pukeamaru
Status	Protected (Matapapa Recreation Reserve) and unprotected parts
Site Area	64.9 ha
Altitudinal Range	0-134 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa-tawa/broadleaved species forest.	Gully
Terrestrial	Manuka scrub.	Hillslope, terrace
Terrestrial	Tawa-puriri forest.	Gully
Terrestrial	Sandfield.	Beach sands
Terrestrial	Spinifex grassland.	Sand dune
Terrestrial	Pohutukawa treeland.	Sand dune
Terrestrial	Pohutukawa-puriri/nikau/broadleaved species forest.	Steep hillslope, cliff
	(Current study and Wildland Consultants 1999a)	

Indigenous Flora

Manuka scrub on coastal facing hillslopes has a diverse range of species, including *P. tomentosa* (Chronically Threatened, Serious Decline), *Lindsaea linearis,* and *Pimelea longifolia* (Regnier *et al.* 1988).

Oruaiti Beach has the best example of spinifex grassland and pohutukawa-dominant forest in the Pukeamaru Ecological District (Regnier *et al.* 1988).

Indigenous Fauna

Common forest and field birds (Wildland Consultants 1999a). Includes SSWI Site No. 74 (moderate rank) (Rasch 1989b).

Condition/Pressures

Grazed by domestic stock. Some areas cut for firewood. Proximity to settlements, recreational use (especially motor vehicles on dunes) and

[39] Part of Tapuaeharuru occurs outside the 'coastal environment' study area (i.e. further than 1 km inland of MHWS).

flammable vegetation with attendant fire risk (Wildland Consultants 1999a).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	L
	3.5	M
	3.6	M
Diversity and Pattern	3.7	H
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance National

Significance Justification Tapuaeharuru is part of a large (3,640 ha) representative tract of indigenous vegetation forming an ecological sequence from coastal habitats to lowland forest. It was identified as a Category 1 Priority Area in Regnier *et al.* (1988) and part of the site was ranked as coastal vegetation of national significance in Beadel (1994a). This site contains one of the best representative examples of pohutukawa-dominant forest in the region. Provides habitat for one chronically threatened plant species.

References Regnier *et al.* 1988; Rasch 1989b; Beadel 1994a; DOC 1995; Wildland Consultants 1999a.

WHANGAPARAOA (PART)[40]

Site Number SVHZ-196
Grid Reference (NZMG) 2950745 6389158
Local Authority Opotiki District Council
Ecological District Pukeamaru
Status Protected (Nga Whenua Rahui Kawenata)
Site Area 18.2 ha
Altitudinal Range 20-120 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa-(tawa)/broadleaved species forest	Steep hillslope
Terrestrial	Broadleaved species scrub and forest.	Steep hillslope
Terrestrial	Manuka scrub. (Regnier *et al.*1988)	Steep hillslope

Indigenous Flora This site comprises a very small part of a large (3640 ha) representative tract of indigenous vegetation forming an altitudinal sequence from coastal to lowland forest (Regnier *et al.* 1988). No rare or threatened plant species have been recorded in this particular area (Wildland Consultants 1999a).

Indigenous Fauna Kereru (Chronically Threatened, Gradual Decline) and common forest, field and wader bird species, including tomtit and whitehead (Wildland Consultants 1999a). Banded dotterel (Chronically Threatened, Gradual Decline) nest along some of the streams (Rasch 1989b).

Condition/Pressures Used as a firewood source. Proximity to settlements, recreation use and the flammable nature of much of the vegetation means that future disturbance is probable (Wildland Consultants 1999a).

[40] Most of the Whangaparaoa site (see Regnier *et al*. 1988 and Wildlands 1999a) occurs outside the 'coastal environment' study area (i.e. further than 1 km inland of MHWS).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	L
	3.5	M
	3.6	N/A
Diversity and Pattern	3.7	L
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	H
	3.12	H
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

Significance Justification Although small, this site is part of a large representative forest tract (Regnier *et al.* 1988) (of which only a small part occurs in the coastal zone) which increases its relative ecological significance. There are recent records of one chronically threatened forest bird species.

Notes This site is part of a Category 1 Priority Area recommended for protection in the Pukeamaru Ecological District (Regnier *et al.* 1988).

References Regnier *et al.* 1988; Wildland Consultants 1999a.

WHANGAPARAOA B

Site Number	SVHZ-197
Grid Reference (NZMG)	2950924 6389695
Local Authority	Opotiki District Council
Ecological District	Pukeamaru
Status	Unprotected
Site Area	14.4 ha
Altitudinal Range	19-64 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Kanuka forest.	Steep hillslope, cliff
Terrestrial	Pohutukawa-kanuka forest. (Current study and Wildland Consultants 1999a)	Steep hillslope, cliff

Indigenous Flora Secondary kanuka forest surrounds a small remnant of primary pohutukawa forest on a coastal scarp overlooking the Whangaparaoa dune wetland system. The forest understorey on cliff faces has dense populations of *Machaerina sinclairii* and whaririki (current study).

Indigenous Fauna Common field bird species (Wildland Consultants 1999a).

Condition/Pressures This site is grazed. Numerous adventive species are well established, including exotic grasses, lupin and gorse (Wildland Consultants 1999a).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	L
	3.3	L
	3.4	L
	3.5	L
	3.6	N/A
Diversity and Pattern	3.7	L
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

Significance Justification This site is locally significant because it provides an ecological linkage and buffer to the Whangaparaoa Beach and River Mouth dune wetland system (which is nationally significant). In addition, pohutukawa forest is a vegetation type that was formerly widespread in coastal areas of Pukeamaru Ecological District, but has now been greatly reduced in extent (Wildland Consultants 1999a).

Notes Previously identified as coastal vegetation of local significance in Beadel (1994a). Not part of a recommended area for protection in Regnier *et al.* (1988).

References Beadel 1994a; Regnier *et al.* 1988; Wildland Consultants 1999a; current study.

WHANGAPARAOA BEACH AND RIVER MOUTH

Site Number SVHZ-198
Grid Reference (NZMG) 2950872 6390454
Local Authority Opotiki District Council
Ecological District Pukeamaru
Status Unprotected
Site Area 159.5 ha
Altitudinal Range 0-20 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Lupin/Yorkshire fog-Kentucky bluegrass grassland (includes patches of blackberry, pohuehue, raupo, *Cyperus ustulatus* and harakeke).	Sand dune, terrace
Palustrine	*Ficinia nodosa* sedgeland.	Wetland
Terrestrial	Spinifex grassland.	Sand dune
Estuarine	Saltmarsh ribbonwood-oioi sedge-shrubland.	Wetland
Estuarine/Riverine	*Schoenoplectus pungens-Isolepis cernua-Triglochin striata* herb-sedgeland.	Wetland
Estuarine	Sea rush-oioi sedge-rushland.	Wetland
Riverine/Terrestrial	Riverbed and sandfield.	Alluvial flat
Riverine	River channel/(open water).	Alluvial flat
Terrestrial	Sandfield.	Sand dune
Terrestrial	Bracken-(*Ficinia nodosa*)-(wild ginger) fernland.	Sand dune
Terrestrial	Ponga/kawakawa-karamu-Japanese honeysuckle-hangehange shrubland.	Steep hillslope
Terrestrial	Pohutukawa forest.	Steep hillslope, cliff
Palustrine	Open water.	Dune lake
Palustrine	*Eleocharis sphacelata*-raupo-*Baumea articulata* reedland (60%) ⇔ raupo-*Baumea articulata* reedland (30%) ⇔ open water (10%).	Wetland
Palustrine	Crack willow forest.	Wetland
Terrestrial	Gravelfield.	Terrace
Terrestrial	Bracken-(*Cyperus ustulatus*)-(pampas)-(cabbage tree) fernland.	Sand dune
Palustrine	Raupo-harakeke flax-reedland.	Wetland
Marine	Worm field.	Subtidal channel

Hydrosystem	Vegetation/Habitat Type	Landform
Marine	Worm field. (Current study and Wildland Consultants 1999a)	Intertidal flat

Indigenous Flora

Special features include spinifex grassland and two natural plants of pingao (Chronically Threatened, Gradual Decline) on the sand gravel plain (Regnier *et al.* 1988). Pingao and spinifex have been planted here in recent years by Whangaparaoa School, with the assistance of Coast Care (Tuihana Pook pers. comm. 2006).

The dune lake and dune hollow wetlands in the south of the site are good examples of a nationally under-represented habitat type, however they are being degraded by crack willow invasion (current study).

Pohutukawa forest is present in the south of the site. This forest types has been greatly reduced in extent within the Pukeamaru Ecological District (Wildland Consultants 1999a).

Indigenous Fauna

A diverse fauna associated with a range of habitats. Most notable are three breeding pairs of New Zealand dotterel (Acutely Threatened, Nationally Vulnerable) (Andrew Glaser pers. comm. 2006); Australasian bittern (Acutely Threatened, Nationally Endangered) (Tuihana Pook pers. comm. 2006); spotless crake and North Island fernbird (At Risk, Sparse) (Regnier *et. al.* 1988). Banded dotterel (Chronically Threatened, Gradual Decline) were also reported to breed here in the past (SSWI Site No. 78, Whangaparaoa River Bar - 'high' habitat rank; Rasch 1989b). This site includes SSWI Site No. 76, Waitawake River Mouth (high rank) from Rasch (1989b).

Waitawake Stream has a population of giant kōkopu and long-finned eel (Chronically Threatened, Gradual Decline), blue-gilled bully (Rasch 1989b) and torrentfish (NIWA 2006). There are whitebait spawning grounds amongst rushes, sedges, grasses and herbs on the edges of drains within this site (Andrew Glaser pers. comm. 2006).

An introduced frog species was heard in the dune lake during the 2006 site visit.

Condition/Pressures

Horses are regularly grazed here. Invasive weeds are also a problem, with lupin, blackberry, exotic grasses, and boxthorn throughout the site (Wildland Consultants 1999a). Drainage for pastoral agriculture and eutrophication of waterways; wild ginger and Japanese honeysuckle. Crack willow is invading the dune hollow wetland (current study).

In general the wettest sites (estuarine or freshwater) are dominated by indigenous vegetation associations while adventive species are characteristic of drier locations.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	H
	3.4	M
	3.5	H
	3.6	H
Diversity and Pattern	3.7	H
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	H
Viability and Sustainability	3.11	H
	3.12	M
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance National

Significance Justification A diverse assemblage of indigenous coastal, saline and freshwater communities (including nationally and regionally under-represented types), including the best and most extensive areas of saltmarsh vegetation in the Pukeamaru Ecological District. This site is part of one of the most natural remaining river mouth wetland complexes (including freshwater wetland, saline wetland and sand dunes) in the Pukeamaru Ecological District. It has the most extensive examples of sea rush-oioi sedge-rushland and *Schoenoplectus pungens-Isolepis cernua-Triglochin striata* herb-sedgeland in the Ecological District and the best example of saltmarsh ribbonwood-oioi sedge-shrubland (Regnier *et al.* 1988). Two acutely threatened bird species are currently known from the site, and it is a spawning ground for inanga.

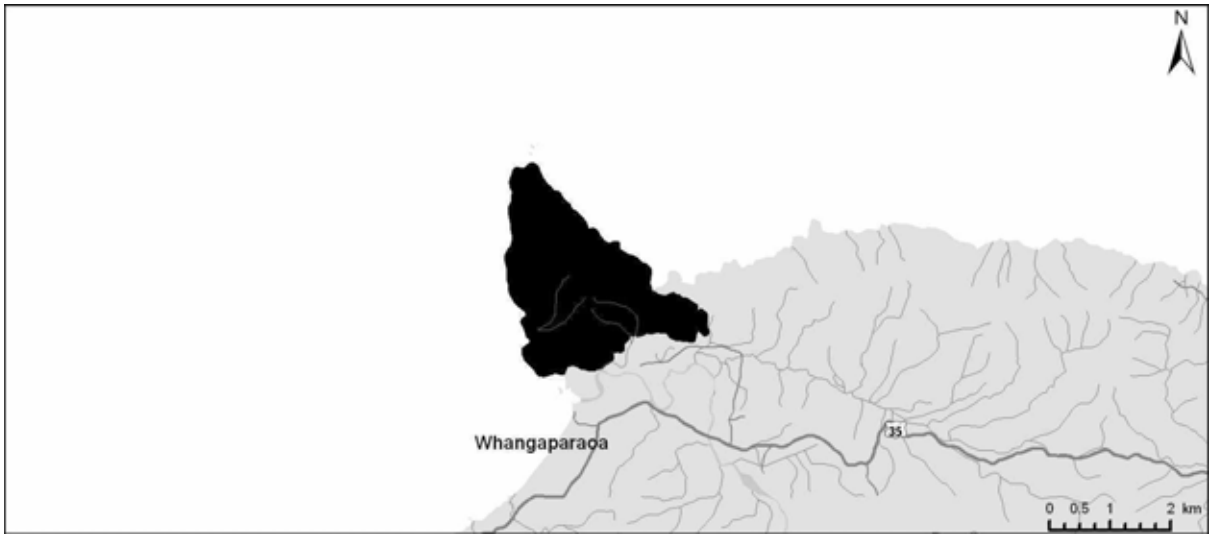
Notes This site is part of a Category 1 Priority Area recommended for protection in the Pukeamaru Ecological District (Regnier *et al.* 1988).

The shape of this site has changed since the most recent mapping in Wildland Consultants (1999a) due to natural river mouth fluctuations. More of the river flats are covered in exotic grassland and are now being heavily grazed, therefore they have been excluded.

References Regnier *et al.* 1988; Rasch 1989b; Beadel 1994a; Wildland Consultants 1999a, NIWA 2006; current study.

TIKIRAU

Site Number SVHZ-199
Grid Reference (NZMG) 2951236 6393212
Local Authority Opotiki District Council
Ecological District Pukeamaru
Status Unprotected
Site Area 559.3 ha
Altitudinal Range 0-200 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	(Tauhinu)/pasture.	Cliff and hillslope
Terrestrial	Tawa-puriri forest.	Cliff and hillslope
Terrestrial	Broadleaved species shrubland and forest.	Hillslope, gully
Terrestrial	Pasture.	Hillslope
Terrestrial	Manuka scrub.	Hillslope, terrace
Terrestrial	Manuka-kanuka scrub and forest.	Hillslope, terrace
Terrestrial	Pohutukawa-puriri-karaka forest.	Cliff, terrace
Terrestrial	Pohutukawa forest.	Cliff, terrace
Terrestrial	Tawa-(puriri) forest.	Ridge, hillslope and gully
Terrestrial	*Cyperus ustulatus*-iceplant rockland.	Rock platform
Marine	Bare rock (at low tide). (Wildland Consultants 1999a)	Rock platform

Indigenous Flora The coastal shrub *Olearia albida* is common in this site but uncommon in Pukeamaru Ecological District and throughout the Bay of Plenty (Regnier *et al.* 1988; Beadel 2006).

Lastreopsis velutina occurs here. It has a limited distribution confined mainly to the Matakaoa Range within the Pukeamaru Ecological District (Regnier *et al.* 1988).

Indigenous Fauna Numerous coastal, field, and forest bird species use the headland including shags, gulls and kereru (Chronically Threatened, Gradual Decline). Includes SSWI Site Nos 79 (moderate-high rank) and 80 (moderate rank) (Rasch 1989b).

Condition/Pressures Much of this site is grazed, but the pasture on the eastern slopes is gradually

being colonised by tauhinu (Wildland Consultants 1999a).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	H
	3.3	H
	3.4	M
	3.5	H
	3.6	M
Diversity and Pattern	3.7	H
Naturalness	3.8	M
Ecological Context	3.9	H
	3.10	M
Viability and Sustainability	3.11	H
	3.12	M
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

Significance Justification This is a large site with high habitat diversity. Regnier *et al.* (1988) describe Tikirau as 'a well defined and distinctive natural area', with the largest tawa-(puriri) forest remnant in the western half of the Pukeamaru Ecological District. The site has been subjected to extensive grazing pressure. Tikirau supports two regionally uncommon plant species and at least one chronically threatened bird species, however there is little recent information on the biodiversity of the site.

Notes Mid-Cretaceous pillow lavas and interbedded red limestone on coastal area just north of Whangaparaoa beach make this a site of regional geological importance (Kenny and Hayward 1996).

This site is part of a Category 2 Priority Area recommended for protection in the Pukeamaru Ecological District (Regnier *et al.* 1988).

References Regnier *et al.* 1988; Rasch 1989b; Beadel 1994a; Kenny and Hayward 1996; Wildland Consultants 1999a.

OTARAWHATA ISLAND

Site Number SVHZ-200
Grid Reference (NZMG) 2950455 6395460
Local Authority Opotiki District Council
Ecological District Pukeamaru
Status Unprotected
Site Area 1.0 ha
Altitudinal Range 0 m asl

Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial/Marine	Bare rock.	Marine rocky islet
Terrestrial/Marine	Undescribed rockland vegetation. (Current study; based on aerial photographs)	Marine rocky islet

Indigenous Flora No information.

Indigenous Fauna Otarawhata Island provided nesting sites for about 150 white-fronted terns (Chronically Threatened, Gradual Decline) in the mid-1980s (Regnier *et al.* 1988 – see 'NA 18 Tikirau'). There is no recent information on the continued existence of this breeding colony.

Condition/Pressures No information.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	M
	3.5	L
	3.6	N/A
Diversity and Pattern	3.7	L
Naturalness	3.8	H
Ecological Context	3.9	L
	3.10	H
Viability and Sustainability	3.11	H
	3.12	H
	3.13	H

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Regional

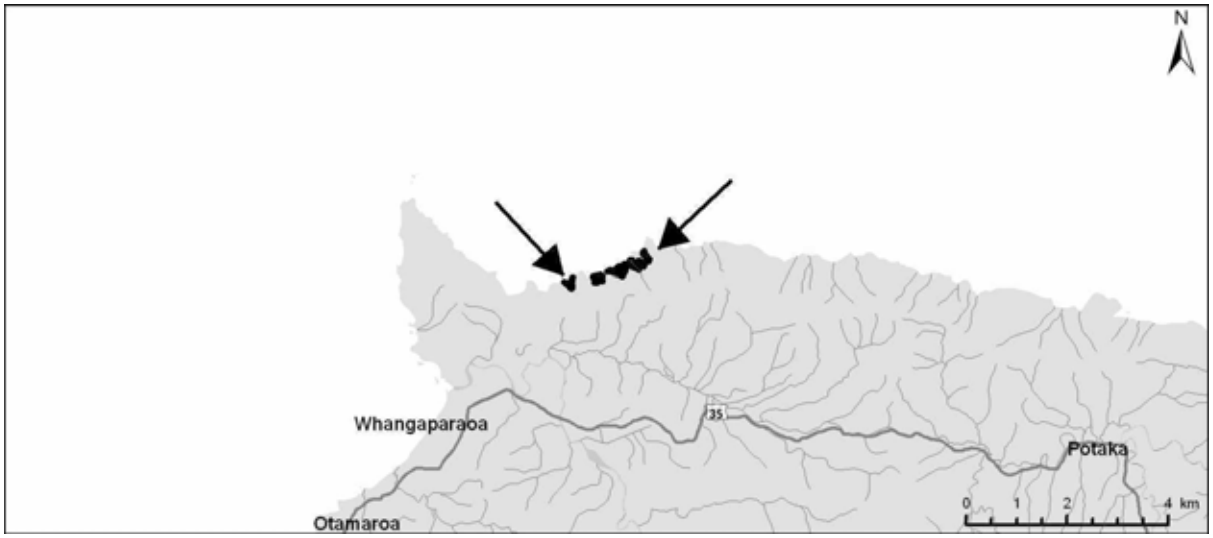
Significance Justification Otarawhata is a very small island with little recent information on the status and condition of its biodiversity and habitats. Past records indicating it is an important breeding site for a chronically threatened species lend weight to the site having regional significance.

Notes Field survey of this site is recommended.

References Regnier *et al.* 1988.

CAPE RUNAWAY POHUTUKAWA REMNANTS

Site Number SVHZ-201
Grid Reference (NZMG) 2954446 6393636
Local Authority Opotiki District Council
Ecological District Pukeamaru
Status Unprotected
Site Area 10.0 ha
Altitudinal Range 0-70 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Pohutukawa forest. (Wildland Consultants 1999a)	Terrace

Indigenous Flora Pohutukawa forest.

Indigenous Fauna Common forest and field birds (Wildland Consultants 1999a).

Condition/Pressures All these remnants are grazed (Wildland Consultants 1999a).

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	L
	3.3	L
	3.4	M
	3.5	L
	3.6	M
Diversity and Pattern	3.7	L
Naturalness	3.8	M
Ecological Context	3.9	L
	3.10	L
Viability and Sustainability	3.11	L
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

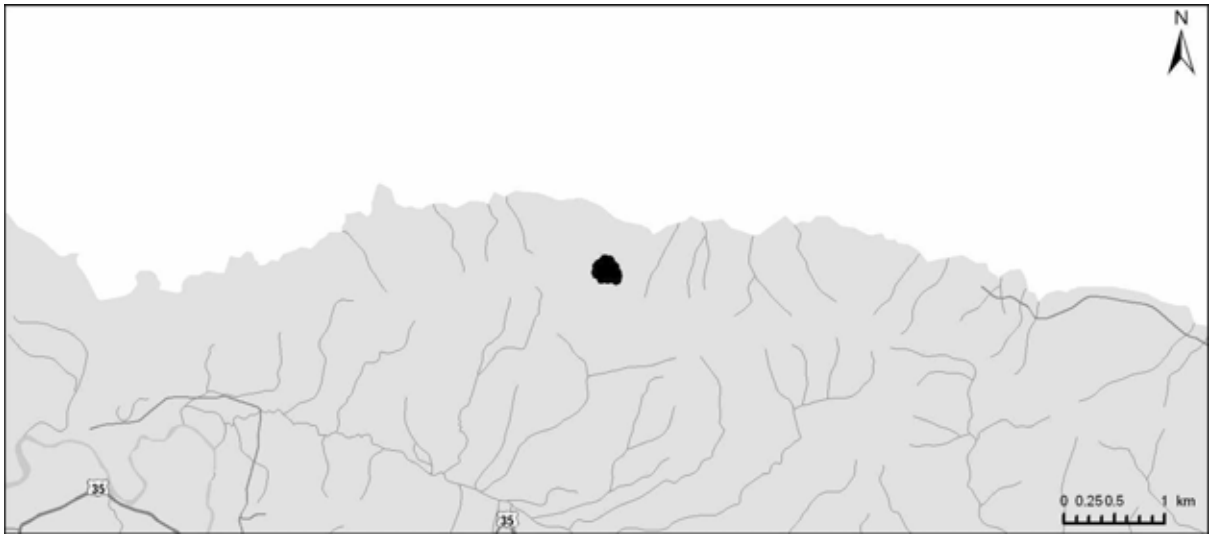
Significance Justification These remnants are significant because they are examples of a vegetation type that was formerly widespread in Pukeamaru Ecological District, but which has now been greatly reduced in extent (Wildland Consultants 1999a). Grazing is likely to have significantly modified the natural character of the site.

Notes Several additional pohutukawa remnants to those mapped in Wildland Consultants (1999a) and Regnier *et al.* (1988) were identified and mapped from 2002-2003 aerial photography.

References Regnier *et al.* 1988; Wildland Consultants 1999a.

POTIKIRUA

Site Number SVHZ-202
Grid Reference (NZMG) 2957354 6393455
Local Authority Opotiki District Council
Ecological District Pukeamaru
Status Unprotected
Site Area 4.1 ha
Altitudinal Range 120-272 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Tawa-kohekohe-pohutukawa-puriri forest. (Regnier *et al.* 1988)	Cliff and terrace.

Indigenous Flora This is the only example of tawa-kohekohe-pohutukawa-puriri forest in the coastal bioclimatic zone of the Bay of Plenty (Beadel 1994a). No significant species recorded (Wildland Consultants 1999a).

Indigenous Fauna Common field birds (Wildland Consultants 1999a).

Condition/Pressures Not known.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	H
Rarity or Distinctive Features	3.2	L
	3.3	M
	3.4	H
	3.5	L
	3.6	H
Diversity and Pattern	3.7	L
Naturalness	3.8	M
Ecological Context	3.9	L
	3.10	L
Viability and Sustainability	3.11	L
	3.12	M
	3.13	L

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

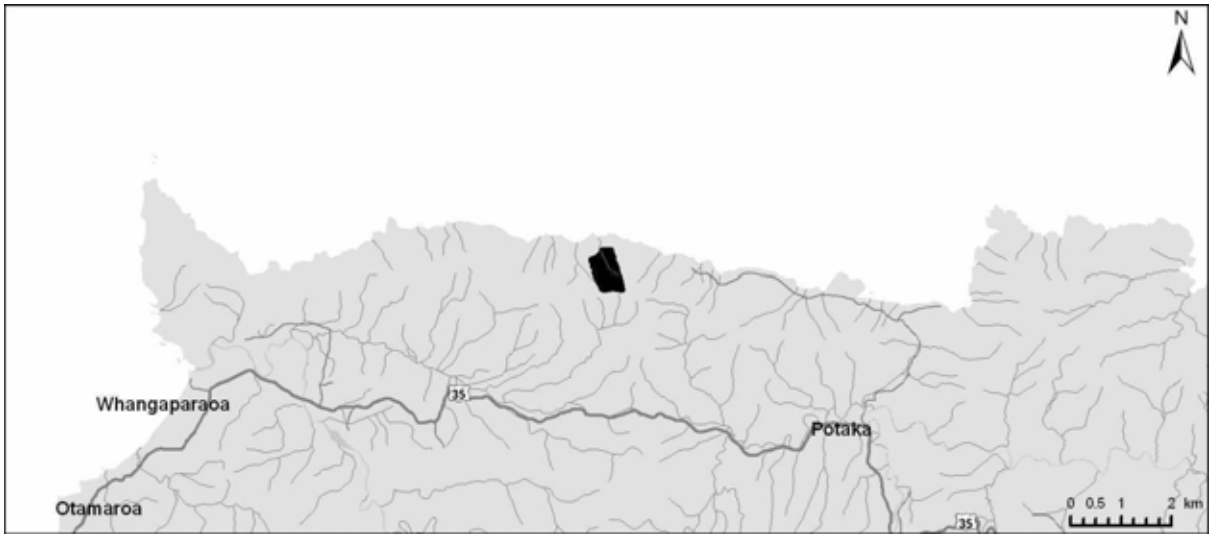
Significance Justification A small typical example of a vegetation type which is characteristic of the Bay of Plenty coastal bioclimatic zone.

Notes This site was previously ranked as locally significant for its vegetation (Beadel 1994a).

References Beadel 1994a; Regnier *et al.* 1988; Wildland Consultants 1999a.

MAUNGAHIHA

Site Number SVHZ-203
Grid Reference (NZMG) 2959394 6393237
Local Authority Opotiki District Council
Ecological District Pukeamaru
Status Unprotected
Site Area 29.9 ha
Altitudinal Range 56-440 m asl



Hydrosystem	Vegetation/Habitat Type	Landform
Terrestrial	Tawa forest.	Cliff, ridge
Terrestrial	Tawa-puriri forest. (Regnier *et al.* 1988)	Cliff

Indigenous Flora No significant species recorded (Wildland Consultants 1999a).

Indigenous Fauna Kereru (Chronically Threatened, Gradual Decline) and common forest birds (Wildland Consultants 1999a).

Condition/Pressures Not known.

Significance Assessment

Criterion*	RPS Number*	Ranking**
Representativeness	3.1	M
Rarity or Distinctive Features	3.2	H
	3.3	M
	3.4	M
	3.5	L
	3.6	N/A
Diversity and Pattern	3.7	L
Naturalness	3.8	M
Ecological Context	3.9	M
	3.10	M
Viability and Sustainability	3.11	M
	3.12	M
	3.13	M

* Bay of Plenty Regional Policy Statement Heritage Criteria: Appendix F, Set 3. Refer to A3 fold-out page in Appendix 1 of this document for descriptions of criteria and definitions of High, Medium, and Low rankings.

** H = High, M = Medium, L = Low.

Relative Significance Local

Significance Justification This site is locally significant because it is a small example of a vegetation type which is characteristic of the Bay of Plenty coastal bioclimatic zone. One chronically threatened forest bird species uses this habitat.

Notes This site was previously ranked as locally significant for its vegetation (Beadel 1994a).

References Beadel 1994a; Regnier *et al.* 1988; Wildland Consultants 1999a.

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- Tuihana Pook (Whangaparaoa landowner)

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APPENDIX 1

BAY OF PLENTY REGIONAL POLICY STATEMENT HERITAGE CRITERIA (INDIGENOUS VEGETATION AND HABITATS OF INDIGENOUS FAUNA)

BAY OF PLENTY REGIONAL POLICY STATEMENT – HERITAGE CRITERIA: APPENDIX F, SET 3* and *GUIDELINES – Natural area is 'significant' if it meets one or more the criteria (i.e. at least one 'H' or several 'M' for any of these).

Representativeness

3.1 "Indigenous vegetation or habitat of indigenous fauna that contains associations of indigenous species representative, typical, or characteristic of the natural diversity of the region or any relevant ecological districts."

H Best *OR* relatively large *OR* good quality example of vegetation/habitat in the ecological district; *OR* only example of a type which was formerly more extensive.
M Similar to other areas that occur elsewhere in relevant ecological district.
L Degraded, small; better quality examples exist elsewhere in ecological district.

Rarity or Distinctive Features

3.2 "Indigenous vegetation or habitat of indigenous fauna supports an indigenous species or associations of species threatened, or rare nationally, regionally, or within the relevant ecological district."

H Nationally acutely or chronically threatened species present (includes Nationally Critical, Nationally Endangered, Nationally Vulnerable, Serious Decline, Gradual Decline; see Molloy *et al.* 2002); *OR* several nationally at risk species present.
M Nationally at risk or data deficient species present (includes Range Restricted, Sparse, Data Deficient) *OR* species considered rare or threatened in the region or ecological district.
L No rare or threatened species known to be present.

3.3 "Indigenous vegetation or habitat of indigenous fauna can contribute to the maintenance or recovery of a species threatened, or rare nationally, regionally, or within the relevant ecological district."

H Potentially key habitat for a threatened species *OR* likely to already be habitat for a threatened species, though not recorded (e.g. because same species has been recorded from very nearby in similar habitat, to which this area is complementary).
M Potentially habitat that can contribute to maintaining or recovering a threatened species.
L Not potential habitat for a threatened species.

3.4 "Indigenous vegetation or habitat of indigenous fauna is distinctive, of restricted occurrence, or at the limits of its natural distribution range, or has developed as a result of factors such as natural geothermal activity, historical cultural practices, altitude, water table, or soil type."

H Nationally distinctive (e.g. nationally rare vegetation or habitat type; national species distribution limit).
M Regionally distinctive (e.g. unusual vegetation or habitat type within region; only or one of few populations of species within region)
L Typical vegetation or habitat type.

3.5 "Indigenous vegetation or habitat of indigenous fauna that is one of the largest remaining examples of its type within the region or any relevant ecological district."

H Yes – one of largest examples of type in region (e.g. 1 of 3).
M Yes – one of largest examples of type in ecological district (but also represented in other ecological districts).
L Moderate or small size example of type.

3.6 "Indigenous vegetation or habitat of indigenous fauna is significantly reduced in area and is degraded but retains key natural ecosystem functions (for example hydrology) and has a high potential for restoration."

H High restoration potential (e.g. reasonably large but moderately degraded example, however retains key ecosystem functions).
M Moderate restoration potential (e.g. highly degraded example, however retains key ecosystem functions).
L Little potential for restoration without large investment in restoring ecosystem function (e.g. restoring hydrology).
N/A Indigenous vegetation or habitats of indigenous fauna not significantly reduced in area, or not degraded, or requiring little or not restoration effort.

Diversity and Pattern

3.7 "Indigenous vegetation or habitats of indigenous fauna which contains a high diversity of indigenous ecosystem or habitat types or changes in species composition, reflecting the existence of diverse natural features (for example landforms, soil types or hydrology), or communities along an ecological gradient."

H More than two landforms or bioclimatic zones; or more than 7 mainly indigenous vegetation/habitat classes.
M More than one landform or bioclimatic zone; or 4-7 mainly indigenous vegetation/habitat classes.
L Only one landform and bioclimatic zone; or 1-3 mainly indigenous vegetation/habitat classes.

Naturalness

3.8 "Indigenous vegetation or habitat of indigenous fauna is in a natural state or healthy condition, or is in an original condition."

H Low-level or nil human-related disturbance (e.g. weeds, pests, logging, fire, dumping, development) - includes secondary vegetation established following natural disturbance.
M Moderate level of human-related disturbance, for example relatively good quality secondary vegetation developed following human disturbance, low levels of selective logging 20 or more years earlier.
L Exotic/induced/heavily disturbed.

Ecological Context

3.9 "Indigenous vegetation or habitat of indigenous fauna contributes to the ecological viability of adjoining natural areas and biological communities, by providing or contributing to an important ecological linkage or network, or providing a buffer from adjacent land uses."

H Provides an ecological linkage/corridor function or buffer to an adjoining natural area of high overall ecological significance *OR* one of only a few examples of existing or potential key ecological linkages within the ecological district (e.g. only stream with riparian vegetation which reaches harbour).
M Provides an ecological linkage/corridor function or buffer to an adjoining natural area of moderate or low overall ecological significance; *OR* an example of an ecological linkage or buffer which is not common within the ecological district.
L An isolated natural area, without linkage or buffer functions *OR* an example of a linkage or buffer that is common.

3.10 "Indigenous vegetation or habitat of indigenous fauna provides habitat for indigenous species at key stages of their life cycle."

H Yes – critical to the self-sustainability of an indigenous species (e.g. feeding, breeding or roosting site, such as for indigenous fish species or migratory birds (national and international).
M Yes – provides habitat for indigenous species at key stages of their life cycle.
L Not known to provide habitat for indigenous species at key stages in their life cycle.

Viability and Sustainability

3.11 "Indigenous vegetation or habitat of indigenous fauna is of sufficient size and compact shape and has the capacity to maintain its ecological viability over time."

H Large size (relative to similar vegetation/habitat in region) *OR* primarily compact, no major constrictions.
M Moderate size (relative to similar vegetation/habitat in region) *OR* irregular or convoluted.
L Small size (relative to similar vegetation/habitat in region) *OR* highly convoluted or discontinuous.

3.12 "Indigenous vegetation or habitat of indigenous fauna supports intact habitats and healthy functioning ecosystems."

H Intact and healthy; able to remain ecological viable with low or minimal management effort.
M Contains elements of a functioning ecosystem, but requires management intervention to be ecologically viable in long term.
L Degraded; requires considerable management effort to render ecologically viable.

3.13 "Indigenous vegetation or habitat of indigenous fauna is of sufficient size and compact shape to resist changes initiated by external agents." (Same as 3.11, but relatively larger)

H Large size (relative to similar vegetation/habitat in region) *OR* primarily compact, no major constrictions.
M Moderate size (relative to similar vegetation/habitat in region) *OR* irregular or convoluted.
L Small size (relative to similar vegetation/habitat in region) *OR* highly convoluted or discontinuous.

CRITERIA FOR ASSESSMENT OF RELATIVE SIGNIFICANCE

These criteria are based on Environment Waikato (2002) and Environment Bay of Plenty (2005b).

A site is of national significance if it meets at least one of the following criteria:

National (including International)

N1 **Protected, or recommended for protection** under international legislation (e.g. RAMSAR, World Heritage), or

N2 **Protected or recommended for protection** under the Conservation Act 1987 (as an Ecological Area or Forest Sanctuary), National Parks Act 1980, Marine Reserves Act 1971, or Reserves Act 1977 (as a Nature Reserve or Scientific Reserve) [1], or

N3 Identified as being of international or national significance in a **previous assessment** (e.g. Kenny and Hayward 1996; Cody 1994), or

N4 **Best or only remaining** representative example of an indigenous vegetation/habitat type, or

N5 A good quality example of indigenous vegetation/habitat that is under-represented nationally **(10 % or less remains)**, or is nationally uncommon and representative of its type, or

N6 Good quality example of a **nationally uncommon suite** of vegetation/ **habitat types** or a **sequence** of ecosystems, or

N7 Best or only remaining **large example** of a **suite** of vegetation/habitat types or an ecological sequence, or

N8 Unmodified/**pristine example** of a nationally under-represented type, or

N9 Forms a key part of an **ecological sequence** that includes an international or nationally significant site, or

N10 **Best or only remaining example** of a threatened or uncommon vegetation/habitat type, or

N11 Good quality example of a **threatened or uncommon habitat** type, or

N12 Habitat used on a regular or continuous basis by an **acutely threatened** species (i.e. 'Nationally Critical', 'Nationally Endangered' or 'Nationally Vulnerable') (see national threat rankings in Hitchmough 2002, Hitchmough (In press) and de Lange *et al.* 2004), or

N13 Habitat for the completion of the life cycle of an **international migratory species** that would be threatened if the habitat were not sustained, or

N14 Provides a habitat for a **threatened species** at a key stage of its **life cycle**; or

N15 **Largest**, or one of the **largest remaining good quality** examples of its type.

A site is of regional significance if it meets at least one of the following critieria, but does not meet any of the criteria for national significance above.

Regional

R1 **Protected under the Reserves Act** 1977 (as a Wildlife Management Reserve, Wildlife Refuge, or Scenic Reserve), Nga Whenua Rahui Kawenata, or for any purpose under the Conservation Act (e.g. Conservation Area or Conservation Park) with significant fauna and/or flora values[1], or

R2 **Protected** under QEII National Trust Act 1977[1], or

R3 **Recommended for protection** by NHF, NWR, or QEII[1], or

R4 Good quality example of a **regionally under-represented** type, or

R5 Identified as of regional significance in a **previous assessment** (e.g. Kenny and Hayward 1996; Cody 1994) [1], or

R6 Degraded but relatively large example of a nationally **under-represented** or **nationally uncommon** type, or

R7 One of the **best representative examples** in the **Region** of indigenous vegetation or habitat for indigenous fauna, or

R8 **Good quality** example of indigenous vegetation or habitat for indigenous species that is representative of the ecological character typical of the Region, or

R9 **Best or one of the best populations (in an ecological district) of** a **chronically threatened species** (i.e. 'Serious Decline' or 'Gradual Decline') or **at risk species** (i.e. 'Range Restricted' or 'Sparse'), (see national threat rankings in Hitchmough 2002, Hitchmough (In press) and de Lange *et al.* 2004), or

R10 Habitat of a **species** that is **endemic** to the Region, or

R11 One of the best examples in the Region of an **ecological sequence**, or

R12 Degraded but relatively large example of a **nationally uncommon sequence**, or

R13 **Degraded**, but the only remaining example of the **sequence** in the Region, or

R14 Forms part of an ecological sequence that includes a **regionally significant site**, or

R15 **Least-modified** example of its type in the Region, or

R16 Modified, but the **largest example** of its type in the Region, or

R17 Is a **buffer** (or a key part of a buffer) to a site that is internationally or nationally significant, or

R18 Provides a habitat for an indigenous species at a key stage of its **life cycle**, or

R19 The largest remaining good quality example of its type in the Region.

A site is **at least** of local significance if it met at least one criterion in Appendix 1 but did not meet any of the above criteria.

Local
Locally significant natural areas are healthy examples of relatively common vegetation and habitat types. They are often small areas, but large enough to enable key ecological processes to occur, such as regeneration of seedlings or reproduction of indigenous fauna. These sites may not be particularly significant in their own right, but nevertheless play an important part in a network of natural areas. For example, a locally significant site might be important as a seasonal feeding or breeding area. It might also act as a stepping stone between other natural areas, allowing indigenous fauna to move in search of food or mates. Such sites are likely to provide representative examples of common or typical vegetation types or habitat for common indigenous species. They will not be among the best examples in the Region but will meet criteria for viability and sustainability as healthy, functioning, and ecologically viable sites.

LIST OF COMMON PLANT NAMES USED IN THE TEXT

Common name	**Latin name**
agapanthus	*Agapanthus praecox*
akeake	*Dodonea viscosa*
akepiro	*Olearia furfuracea*
arctotis	*Arctotis stoechadifolia*
arrow grass	*Triglochin striata*
arum lily	*Zantedeschia aethiopica*
Australian ngaio	*Myoporum insulare*
bachelor's button	*Cotula coronopifolia*
banana passionfruit	*Passiflora mollissima*
banksia	*Banksia* sp.
black wattle	*Acacia mearnsii*
blackberry	*Rubus sp. (R. fruticosus* agg.*)*
blue morning glory	*Ipomoea indica*
bracken	rarahu; *Pteridium esculentum*
broom	*Cytisus scoparius*
broomrape	*Orobanche minor*
browntop	*Agrostis capillaris*
brush wattle	*Paraserianthes lophantha*
bush rice grass	*Microlaena avenacea*
cape spurge	*Euphorbia lathyris*
catsear	*Hypochoeris radicata*
Chinese privet	*Ligustrum sinense*
climbing asparagus	*Asparagus scadens*
climbing dock	*Rumex sagittatus*
coastal maire	*Nestegis apetala*
cocksfoot	*Dactylis glomerata*
Cook's scurvy grass	*Lepidium oleraceum*
cotoneaster	*Cotoneaster glaucophyllus*
dimorphotheca	*Osteospermum fruticosum*
duckweed	*Lemna minor*
dwarf greenhood	*Linguella puberula*
dwarf mistletoe	*Korthalsella salicornioides*
evergreen buckthorn	*Rhamnus alaternus*
freesia	*Freesia* sp.
gazania	*Gazania* sp.
German ivy	*Senecio mikanioides*
glasswort	*Sarcocornia quinqueflora*
gorse	*Ulex europaeus*
grape	*Vitis vinifera*
grey willow	*Salix cinerea*
hairy lotus	*Lotus suaveolens*
hangehange	*Geniostoma ligustrifolium*
harakeke	flax, *Phormium tenax*
hard beech	*Nothofagus truncata*
harestail	*Lagurus ovatus*
hinarepe	sand tussock, *Austrofestuca littoralis*

Common name	Latin name
houpara	*Pseudopanax lessonii*
inkweed	*Phytolacca octandra*
iceplant	*Carpobrotus edulis*
Japanese honeysuckle	*Lonicera japonica*
Japanese spindle tree	*Euonymus japonicus*
kahikatea	*Dacrycarpus dacrydioides*
kamahi	*Weinmannia racemosa*
kanuka	*Kunzea ericoides*
kapungawha	*Schoenoplectus tabernaemontani*
karo	*Pittosporum crassifolum*
kawakawa	*Macropiper excelsum* var. *excelsum*
Kentucky bluegrass	*Poa pratensis*
kikuyu grass	*Pennisetum clandestinum*
king fern	*Marattia salicina*
kiokio	*Blechnum novae-zelandiae*
kohekohe	*Dysoxylum spectabile*
kohuhu	*Pittosporum tenuifolium* subsp. *tenuifolium*
koromiko	*Hebe stricta* var. *stricta*
loquat	*Eriobotrya japonica*
lupin	*Lupinus arboreus*
macrocarpa	*Cupressus macrocarpa*
mahoe	*Melicytus ramiflorus* subsp. *ramiflorus*
mamaku	*Cyathea medullaris*
mangeao	*Litsea calicaris*
mangrove	*Avicennia marina* subsp. *australasica*
manuka	*Leptospermum scoparium*
mapou	*Myrsine australis*
maritime pine	*Pinus pinaster*
marram	*Ammophila arenaria*
marsh fern	*Thelypteris confluens*
mawhai	*Sicyos australis*
Mercer grass	*Paspalum distichum*
mignonette vine	*Andredera cordfolia*
mingimingi	*Leucopogon fasciculatus*
Moreton bay fig	*Ficus macrophylla*
moth plant	*Araujia sericifera*
nasturtium	*Tropaeolum majus*
native hibiscus	*Hibiscus trionum*
native musk	*Mimulus repens*
ngaio	*Myoporum laetum*
Norfolk pine	*Araucaria heterophylla*
northern rata	*Metrosideros robusta*
NZ spinach	*Tetragonia tetragonioides*
oioi	*Apodasmia similis*
pampas	*Cortaderia selloana*
parapara	*Pisonia brunoniana*
paspalum	*Paspalum dilatatum*
periwinkle	*Vinca major*
perehia	*Lachnagrostis billardierei*
Phoenix palm	*Phoenix canariensis*
pingao	*Desmoschoenus spiralis*
pink pine	*Halocarpus biformis*

Common name	Latin name
plectranthus	*Plectranthus ciliatus*
pohuehue	*Muehlenbeckia complexa*
pohutukawa	*Metrosideros excelsa*
ponga	silver fern; *Cyathea dealbata*
poplar	*Populus* species
porokaiwhiri	pigeonwood, *Hedycarya arborea*
prickly mingimingi	*Leptecophylla juniperina*
privet	*Ligustrum sinense*
prostrate kanuka	*Kunzea ericoides* var. *microflora*
pukatea	*Laurelia novae-zelandiae*
purple groundsel	*Senecio elegans*
puniu	*Polystichum vestitum*
puriri	*Vitex lucens*
radiata pine	*Pinus radiata*
ragwort	*Senecio jacobaea*
rangiora	*Brachyglottis repanda*
ratstail	*Sporobolus africanus*
raupo	*Typha orientalis*
rautahi	*Carex geminata*
reed sweetgress	*Glyceria maxima*
rengarenga	*Arthropodium cirratum*
rewarewa	*Knightia excelsa*
ripgut brome	*Bromus diandrus*
rye grass	*Lolium perenne*
royal fern	*Osmunda regalis*
saltmarsh ribbonwood	*Plagianthus divaricatus*
sand pimelea	*Pimelea arenaria*
sea couch	*Elytrigia pycnantha*
sea rush	*Juncus kraussii* subsp. *australiensis*
seagrass	*Zostera* spp.
selaginella	*Selaginella kraussiana*
sheep's sorrel	*Acetosa acetosella*
shining karamu	*Coprosma lucida*
shore bindweed	*Calystegia soldanella*
shore spurge	*Euphorbia glauca*
silver poplar	*Populus alba*
smilax	*Asparagus asparagoides*
Spanish heath	*Erica lusitanica*
spinifex	*Spinifex sericeus*
swamp buttercup	*Ranunculus macropus*
swamp coprosma	*Coprosma tenuicaulis*
swamp kiokio	*Blechnum minus*
swamp millet	*Isachne globosa*
sycamore	*Acer pseudoplatanus*
Taiwan cherry	*Prunus campanulata*
tall fescue	*Schedonorus phoenix*
tanekaha	*Phyllocladus trichomanoides*
taraire	*Beilschmiedia tarairi*
tarata	lemonwood; *Pittosporum eugenioides*
taro	*Colocasia esculenta*
Tasmanian blackwood	*Acacia melanoxylon*
tauhinu	*Ozothamnus leptophyllus*

Common name	Latin name
taupata	*Coprosma repens*
tawa	*Beilschmiedia tawa*
tawapou	*Pouteria costata*
tawheowheo	*Quintinia serrata*
ti kouka	*Cordyline australis*
titoki	*Alectryon excelsus*
totara	*Podocarpus totara*
tradescantia	*Tradescantia fluminensis*
tree lucerne	*Chamaecytisus palmensis*
tree privet	*Ligustrum lucidum*
tuber ladder fern	*Nephrolepis cordifolia*
tutu	*Coriaria arborea*
umbrella sedge	*Cyperus eragrostis*
walnut	*Juglans* spp.
watercress	*Nasturtium officinale*
whaririki	*Phormium cookianum*
whau	*Entelea arborescens*
whauwhaupaku	fivefinger; *Pseudopanax arboreus* var. *arboreus*
wild ginger	*Hedychium gardnerianum* or *Hedychium flavescens*
wild rose	*Rosa* sp.
woolly nightshade	*Solanum mauritianum*
Yorkshire fog	*Holcus lanatus*

LIST OF COMMON FAUNA NAMES USED IN THE TEXT

Birds

Common name	**Latin name**
Australasian bittern; matuku	*Botaurus poiciloptilus*
Australasian gannet; takapu	*Morus serrator*
Australasian harrier; kahu	*Circus approximans*
banded dotterel	*Charadrius bicinctus bicinctus*
banded rail	*Gallirallus philippensis assimilis*
bar-tailed godwit	*Limosa lapponica*
bellbird;korimako; makomako	*Anthornis melanura*
black stilt; kaki	*Himantopus novaezelandiae*
black-backed gull; karoro	*Larus dominicanus* ssp. *dominicanus*
black-billed gull	*Larus bulleri*
brown teal; pateke	*Anas chlorotis*
Buller's shearwater	*Puffinus bulleri*
Caspian tern	*Sterna caspia*
diving petrel	*Pelecanoides* sp.
eastern curlew	*Numenius madagascariensis*
fairy tern	*Sterna nereis davisae*
flesh-footed shearwater; toanui	*Puffinus carneipes*
grey duck	*Anas superciliosa superciliosa*
grey ternlet	*Procelsterna cerulea*
grey warbler; riroriro	*Gerygone igata*
grey-faced petrel; oi	*Pterodroma macroptera* ssp. *gouldi*
kakariki; red-crowned kakariki	*Cyanoramphus novaezelandiae*
kereru, NZ wood pigeon	*Hemiphaga novaeseelandiae*
kingfisher; kotare	*Todiramphus sanctus*
lesser knot	*Calidris canutus*
little black shag	*Phalacrocorax sulcirostris*
long-tailed cuckoo	*Eudynamys taitensis*
mallard	*Anas platyrhynchos*
marsh crake	*Porzana pusilla affinis*
morepork; ruru	*Ninox novaeseelandiae*
New Zealand dabchick	*Poliocephalus rufopectus*
New Zealand dotterel; tuturiwhatu	*Charadrius obscurus*
New Zealand falcon	*Falco novaeseelandiae* "bush"
North Island brown kiwi	*Apteryx mantelli*
North Island fantail; piwakawaka	*Rhipidura fuliginosa* ssp. *placabilis*
North Island fernbird	*Bowdleria punctata vealeae*
North Island kaka	*Nestor meridionalis* ssp. *septentrionalis*
North Island kokako	*Callaeas cinerea* ssp. *wilsoni*
North Island robin; toutouwai	*Petroica australis* ssp. *longipes*
North Island saddleback; tieke	*Philesturnus carunculatus* ssp. *rufusater*
North Island weka	*Gallirallus australis* ssp. *greyi*
northern little blue penguin; korora	*Eudyptula minor* ssp. *iredalei*
papango; New Zealand scaup	*Aythya novaeseelandiae*
paradise shelduck; putangitangi	*Tadorna variegata*
pied oystercatcher; torea	*Haematopus ostralegus*
pied shag; karuhiruhi	*Phalacrocorax varius* ssp. *varius*

Birds

Common name	Latin name
pukeko	*Porphyrio porphyrio* ssp. *melanotus*
red-billed gull	*Larus novaehollandiae scopulinus*
reef heron	*Egretta sacra sacra*
royal spoonbill; kotuku-ngutupapa	*Platalea regia*
silvereye; tauhou	*Zosterops lateralis*
skua (unidentified)	*Stercorarius* sp.
spotless crake; puweto	*Porzana tabuensis* ssp. *plumbea*
spur-winged plover	*Vanellus miles*
starling	*Sturnus vulgaris*
stitchbird; hihi	*Notiomystis cincta*
storm petrel (unidentified)	*Fregetta* sp.
tomtit; miromiro	*Petroica macrocephala* ssp. *toitoi*
tui	*Prosthemadera novaeseelandiae*
turnstone	*Arenaria interpres*
variable oystercatcher; torea; toreapango	*Haematopus unicolor*
welcome swallow	*Hirundo tahitica* ssp. *neoxena*
whimbrel	*Numenius phaeopus*
whio; blue duck	*Hymenolaimus malacorhynchos*
white-faced heron	*Ardea novaehollandiae*
white-fronted tern; tara	*Sterna striata striata*
whitehead; popokatea	*Mohoua albicilla*
wrybill	*Anarhynchus frontalis*

Mammals

Common name	Latin name
cat	*Felis catus*
cattle	*Bos taurus*
deer	*Cervus* spp.
dog	*Canis familiaris*
goat	*Capra hircus*
hedgehog	*Erinaceus europaeus*
horse	*Equus caballus*
kiore; Pacific rat	*Rattus exulans*
long-tailed bat; pekapeka	*Chalinolobus tuberculatus*
mouse	*Mus musculus*
mustelid species	*Mustela* sp.
New Zealand fur seal; kekeno	*Arctocephalus forsteri*
pig	*Sus scrofa*
possum; brushtail possum	*Trichosurus vulpecula*
rabbit	*Oryctolagus cuniculus*
sheep	*Ovis aries*
stoat	*Mustela erminea*

Lizards

Common name	Latin name
common gecko	*Hoplodactylus maculatus*
copper skink	*Cyclodina aenea*
Duvaucel's gecko	*Hoplodactylus duvaucelii*
forest gecko	*Hoplodactylus granulatus*
moko skink	*Oligosoma moco*
northern tuatara	*Sphenodon p. punctatus*
pacific gecko	*Hoplodactylus pacificus*
shore skink	*Oligosoma smithii*
speckled skink	*Oligosoma infrapunctatum*
tuatara	*Sphenodon* sp.
unidentified gecko	*Hoplodactylus* spp.
unidentified skink	*Oligosoma* sp.
Whitaker's skink	*Cyclodina whitakeri*

Fish

Common name	Latin name
short-finned eel	*Anguilla australis*
long-finned eel	*Anguilla dieffenbachii*
giant kōkopu	*Galaxias argenteus*
inanga	*Galaxias maculatus*
shortjaw kōkopu	*Galaxias postvectis*
lamprey	*Geotria australis*

Frogs

Common name	Latin name
Hochstetter's frog	*Leiopelma hochstetteri*

Insects

Common name	Latin name
Northern giant weta	*Deinacrida* sp.
wasp	*Vespula* spp.

Spiders

Common name	Latin name
katipo	*Latrodectus katipo*

FIELD WORK PROGRAMME - BAY OF PLENTY COASTAL ENVIRONMENT - SIGNIFICANT VEGETATION AND HABITAT ZONE - PREPARED 6 JULY 2006

Day	Site Name	Habitat type(s)	Reason
1	Bowentown Heads (SVHZ-4)	Lowland/coastal forest	Vegetation change and boundary check
1	Bowentown Sand Dunes and Beach (SVHZ-3)	Dune vegetation	Check if B. integrifolia areas are significant
1	Ongare (SVHZ-13)	Estuarine wetland; bird roost/breeding site	Should pines on point be included?
1	Steele Road Wetlands A (SVHZ-6)	Freshwater wetland	Adjacent fields re-flooded recently?
1	Tetley Road Inlet (SVHZ-21)	Freshwater wetland; estuarine wetland	Fringing freshwater wetlands significant?
1	Athenree (SVHZ-5)	Freshwater wetland; estuarine wetland	Adjacent fields re-flooded recently?
1	Central Waihi Beach (SVHZ-2)	Dune vegetation	New site
1	Tuapiro (SVHZ-11)	Estuarine wetland	Fringing freshwater wetlands significant?
1	Steele Road Wetlands B (SVHZ-7)	Freshwater wetland	Insufficient information
1	North Waihi Beach (determined not significant)	Dune vegetation	New site
1	Orokawa (SVHZ-1)	Lowland/coastal forest	Southern boundary of native vegetation unclear
1	Te Rereatukahia (SVHZ-22)	Estuarine wetland	Should saltmarsh directly to south be included?
1	Hikurangi Road Wetland (determined not significant)	Freshwater wetland	Insufficient information
1	Tauranga Harbour (part) (SVHZ-9 and SVHZ-14)	Estuary	Boundary check
2	Ngakautuakina Point (SVHZ-31)	Lowland/coastal forest	New site
2	Matakana Point (SVHZ-82)	Lowland/coastal forest	New site
2	Tirohanga Point (SVHZ-80 and SVHZ-81)	Lowland/coastal forest; bird roost/breeding site	New site; check veg to south for inclusion
2	Omokoroa Wetlands (SVHZ-38)	Freshwater wetland	Partially new site
2	Tye Park Inlet (SVHZ-61)	Freshwater wetland; estuarine wetland	Check eastern side (wetland?) for inclusion
2	Poike (SVHZ-57)	Estuarine wetland	Check eastern edge
2	Waimapu Estuary (SVHZ-56)	Freshwater wetland; estuarine wetland	Fringing freshwater wetlands; boundary check
2	Apata Estuary (SVHZ-30)	Estuarine wetland	Insufficient information
2	Opureora Wetland (determined not significant)	Freshwater wetland	Insufficient information
2	Waiherehere Road Wetlands (SVHZ-88)	Freshwater wetland	Insufficient information
2	Opureora Spit and Inlet (SVHZ-84 and SVHZ-85)	Freshwater wetland; estuarine wetland; bird roost/nesting site	Boundary check
2	Wainui Estuary Wetlands (SVHZ-28)	Freshwater wetland	Boundary check; insufficient information

Day	Site Name	Habitat type(s)	Reason
2	Wainui Estuary (SVHZ-27)	Freshwater wetland; estuarine wetland	Fringing f/w wetlands; saltmarsh around island
2	Tauranga Harbour (part) (SVHZ-9 and SVHZ-14)	Estuary	Boundary check
3	Maketu Road Wader Roost (SVHZ-108)	Bird roost	New site; check for structures to be excluded
3	Arawa Wetland (SVHZ-107)	Freshwater wetland	Insufficient information
3	Maketu Spit and Wildlife Management Reserve (SVHZ-105)	Dune vegetation; bird roost/nesting site	Sand dunes and wildlife management reserve
3	Maketu Road Saltmarsh (part SVHZ-106)	Estuarine wetland	New site
3	Shark Alley to Kaituna Spit Sand Dunes (SVHZ-100)	Dune vegetation	Southeastern end intervening areas significant?
3	Kaituna Sand Dunes and Wetland (SVHZ-103)	Dune vegetation; freshwater wetland	Check wetland boundary
3	Papamoa Sand Dunes (SVHZ-102)	Dune vegetation	Boundary check
3	Otira Sand Dunes (SVHZ-101)	Dune vegetation	Boundary check
3	Maketu Estuary (SVHZ-106)	Estuary	Boundary check
4	Whakatane Estuary (SVHZ-122)	Estuary	May need boundary check
4	Ohinekoao B (part SVHZ-116)	Lowland/coastal forest	Veg in hinterland around small wetlands
4	Otamarakau (part SVHZ-115)	Dune vegetation	Check adjacent area in Tauranga ED
4	Pukehina (SVHZ-114)	Dune vegetation	Boundary check
4	Waihi Estuary (SVHZ-112)	Estuary	Boundary check
4	Waihi Estuary Islands (part SVHZ-112)	Estuarine wetland	New site
4	Pukehina Redoubt Sand Dune (part SVHZ-114)	Dune vegetation	New site
4	Wharere Road Wetland (SVHZ-110)	Freshwater wetland	New site
5	Otamarakau-Matata-Whakatane Dunes (SVHZ-115)	Dune vegetation	Extensive boundary checking
6	Nukuhou (part SVHZ-142)	Estuarine wetland	Check for current cond.; include with adjacent?
6	Harbour Road (SVHZ-128)	Estuarine wetland	Insufficient information
6	Whitiwhiti (SVHZ-134)	Estuarine wetland; lowland/coastal forest	Include Te Kooti Inlet saltmarsh and f/w wetland?
6	Tunanui Stream Inlet (SVHZ-132)	Freshwater wetland; estuarine wetland	Check to include f/w wetland
6	Ohope Scenic Reserve and Extension (SVHZ-124)	Lowland/coastal forest	Boundary check, esp. around houses
6	Paparoa Pa Historic Reserve (SVHZ-136)	Lowland/coastal forest	Check intervening natural areas for significance
6	Hiwarau & Nukuhou Saltmarsh Stewardship Area (SVHZ-142)	Estuarine wetland; lowland/coastal forest	Boundary check for saltmarsh
6	Ohiwa Harbour (SVHZ-144)	Estuary	Boundary check
6	Waiotahe Estuary (SVHZ-166)	Estuary	Boundary check
7	Omarumutu (SVHZ-175)	Dune vegetation; bird roost/nesting site	Boundary check

Day	Site Name	Habitat type(s)	Reason
7	Opape (SVHZ-176)	Freshwater wetland	Attempt to check extent
7	Onekawa Forest Remnants (SVHZ-164)	Lowland/coastal forest	Boundary checking
7	Looney's Remnants (SVHZ-163)	Lowland/coastal forest	Check larger remnants to south - native?
7	Bryans Beach B (SVHZ-162)	Lowland/coastal forest	Boundary check
7	Ruatuna (SVHZ-148)	Lowland/coastal forest	Check remnants inbetween
7	Tirohanga Dunes (SVHZ-173)	Dune vegetation	Boundary check
7	Waioweka Estuary (SVHZ-170)	Estuary	Boundary check
7	Bryans Beach A (SVHZ-165)	Lowland/coastal forest	Boundary check
8	Iwiroa (part SVHZ-194)	Lowland/coastal forest	Boundary check
8	Haparapara River (SVHZ-184)	Lowland/coastal forest	Boundary check, next to road
8	Part Whitianga (part SVHZ-183)	Lowland/coastal forest	New vegetation to include?
8	Motunui Island (part SVHZ-184)	Coastal rock vegetation	New site
8	Te Kaha (SVHZ-185)	Lowland/coastal forest	Coastal rocks; Kereu river flats; veg to north
8	Maraenui Wetland (SVHZ-182)	Freshwater wetland	May not be necessary - Andrew Glaser's notes
8	Motukotare Island (part SVHZ-185)	Coastal rock vegetation	New site
9	Oruaiti (SVHZ-194)	Lowland/coastal forest	More veg for inclusion? Boundary check
9	Waihau Pohutukawa Remnants (SVHZ-191)	Lowland/coastal forest	Describe inland remnants
9	Raukokore Mouth (SVHZ-188)	Lowland/coastal forest	Boundary check
9	Whanarua (SVHZ-186)	Lowland/coastal forest; coastal rock vegetation	Te Huka Island; boundary check
9	Whangaparaoa A – North (part SVHZ-198)	Estuarine wetland	Boundary check - veg/harbour
9	Waimanu (SVHZ-187)	Lowland/coastal forest; freshwater wetland	Check wetland extent
9	Otamaroa Pohutukawa (part SVHZ-198)	Lowland/coastal forest	New site
9	Tapuaeharuru (SVHZ-195)	Dune vegetation	Pohutukawa on sand - southern area
10	Motiti (SVHZ-207)	Freshwater wetland	Insufficient information on freshwater wetland
11	Matakana Island 4 (SVHZ-76)	Estuarine wetland	Boundary check
11	Matakana Island 2 (SVHZ-75)	Estuarine wetland	Boundary check
11	Matakana Island 1 (SVHZ-69)	Dune vegetation; freshwater wetland; bird roost/nesting site	Boundary check
11	Matakana Wetland A (SVHZ-70)	Freshwater wetland	Boundary check
11	Matakana Wetland D (SVHZ-73)	Freshwater wetland	Boundary check
11	Matakana Wetland C (SVHZ-72)	Freshwater wetland	Boundary check
11	Matakana Wetland B (SVHZ-71)	Freshwater wetland	Boundary check
11	Matakana Island 3 (SVHZ-74)	Freshwater wetland	Boundary check
11	Rangiwaea Island Estuary (SVHZ-92)	Freshwater wetland; estuarine wetland	Boundary check; f/w wetlands around edge?
11	Blue Gum Bay (SVHZ-78 and SVHZ-79)	Freshwater wetland; estuarine wetland	Boundary check; Eucalyptus areas?

VEGETATION STRUCTURAL CLASSES (ATKINSON 1985)

Atkinson (1985) details structural classes of a widely recognised vegetation structural class system which provides a conventional classification system for New Zealand vegetation and habitats. Each vegetation type name combines both compositional and structural information, as summarised below.

Vegetation type names

The dominant canopy species are listed first, and then any species in lower vegetation tiers (if these are known) followed by the structural class of the vegetation, e.g. rimu/tawa-kamahi forest; *Ficinia nodosa*/pohuehue sedge-vineland. Common names are preferred (when they cannot be mistaken) otherwise Latin names are used (see list of common and Latin name equivalents).

The percentage cover of particular species and their position in the vegetation tiers are indicated as follows:

(tawa)	less than 5% cover of the bracketed species
(rimu)/tawa	indicates less than 5% cover of rimu emergent over a canopy of tawa
tawa-hinau	indicates tawa and hinau occur in the same tier
⇔	indicates a mosaic of two or more vegetation types exists within a defined area

Structural classes

Forest	Woody vegetation in which the cover of trees and shrubs in the canopy is >80% and in which tree cover exceeds that of shrubs. Trees are woody plants >10 cm dbh. Tree ferns >10 cm dbh are treated as trees.
Treeland	Vegetation in which the cover of trees in the canopy is 20-80%, with tree cover exceeding that of any other growth form, and in which the trees form a discontinuous upper canopy above either a lower canopy of predominantly non-woody vegetation or bare ground, e.g. mahoe/rarahu treeland. (Note: Vegetation consisting of trees above shrubs is classified as either forest or scrub depending on the proportion of trees and shrubs in the canopy.)
Vineland	Vegetation in which the cover of unsupported (or artificially supported) woody vines in the canopy is 20-100% and in which the cover of these vines exceeds that of any other growth form or bare ground. Vegetation containing woody vines that are supported by trees or shrubs is classified as forest, scrub or shrubland. Examples of woody vines occur in the genera *Actinidia, Clematis, Lonicera, Metrosideros, Muehlenbeckia, Ripogonum, Vitis* and others.
Scrub	Woody vegetation in which the cover of shrubs and trees in the canopy is >80% and in which shrub cover exceeds that of trees (cf forest). Shrubs are woody plants <10 cm dbh.

Shrubland	Vegetation in which the cover of shrubs in the canopy is 20-80% and in which the shrub cover exceeds that of any other growth form or bare ground. It is sometimes useful to separate tussock-shrublands as a sub-class for areas where tussocks are >20% but less than shrubs. (Note: the term scrubland is not used in this classification.)
Tussockland	Vegetation in which the cover of tussocks in the canopy is 20-100% and in which the tussock cover exceeds that of any other growth form or bare ground. Tussocks include all grasses, sedges, rushes, and other herbaceous plants with linear leaves (or linear non-woody stems) that are densely clumped and > 10 cm height. Examples of the growth form occur in all species of *Cortaderia, Gahnia* and *Phormium*, and in some species of *Chinochloa, Poa, Festuca, Rytidosperma, Cyperus, Carex, Uncinia, Juncus, Astelia, Aciphylla* and *Celmisia*.
Fernland	Vegetation in which the cover of ferns in the canopy is 20-100% and in which the fern cover exceeds that of any other growth form or bare ground. Tree ferns >10 cm dbh are excluded as trees (cf. forest).
Grassland	Vegetation in which the cover of grass in the canopy is 20-100% and in which the grass cover exceeds that of any other growth form or bare ground. Tussock-grasses are excluded from the grass growth-form.
Sedgeland	Vegetation in which the cover of sedges in the canopy is 20-100% and in which the sedge cover exceeds that of any other growth form or bare ground. Included in the sedge growth form are *Leptocarpus similis* and many species of *Carex, Uncinia, Isolepis*, and *Bolboschoenus*. Tussock-sedges and reed-forming sedges (cf. reedland) are excluded.
Rushland	Vegetation in which the cover of rushes in the canopy is 20-100% and in which the rush cover exceeds that of any other growth form or bare ground. Included in the rush growth form are some species of *Juncus*, most species of *Leptocarpus*, and all species of *Sporadanthus,* and *Empodisma*. Tussock-rushes are excluded.
Reedland	Vegetation in which the cover of reeds in the canopy is 20-100% and in which the reed cover exceeds that of any other growth form or open water. Reeds are herbaceous plants growing in standing or slowly-running water that have tall, slender, erect, unbranched leaves or culms that are either hollow or have a very spongy pith. Examples include *Typha, Bolboschoenus, Schoenoplectus tabernaemontani, Eleocharis sphacelata,* and *Baumea articulata*.
Cushionfield	Vegetation in which the cover of cushion plants in the canopy is 20-100% and in which the cushion-plant cover exceeds that of any other growth form or bare ground. Cushion plants include herbaceous, semi-woody and woody plants with short densely packed branches and closely spaced leaves that together form dense hemispherical cushions. The growth form occurs in all species of *Donatia, Gaimardia, Hectorella, Oreobolus,* and *Phyllachne* as well as in some species of *Aciphylla, Celmisia, Centrolepis, Chionohebe, Colobanthus, Dracophyllum, Drapetes, Haastia, Leucogenes, Luzula, Myosotis, Poa, Raoulia,* and *Scleranthus*.

Herbfield	Vegetation in which the cover of herbs in the canopy is 20-100% and in which the herb cover exceeds that of any other growth form or bare ground. Herbs include all herbaceous and low-growing semi-woody plants that are not separated as ferns, tussocks, grasses, sedges, rushes, reeds, cushion plants, mosses or lichens.
Mossfield	Vegetation in which the cover of mosses in the canopy is 20-100% and in which the moss cover exceeds that of any other growth form or bare ground.
Lichenfield	Vegetation in which the cover of lichens in the canopy is 20-100% and in which the lichen cover exceeds that of any other growth form or bare ground.
Rockland	Land in which the area of residual bare rock exceeds the area covered by any one class of plant growth-form. Cliff vegetation often includes rocklands. They are named from the leading plant species when plant cover ≥ 1%, e.g. [koromiko] rockland.
Boulderfield	Land in which the area of unconsolidated bare boulders (>200 mm diam.) exceeds the area covered by any one class of plant growth-form. Boulderfields are named from the leading plant species when plant cover ≥ 1%.
Stonefield/gravelfield	Land in which the area of unconsolidated bare stones (20-200 mm diam.) exceeds the area covered by any one class of plant growth-form. The appropriate name is given depending on whether stones or gravel form the greater area of ground surface. Stonefields and gravelfields are named from the leading plant species when plant cover ≥ 1%.
Sandfield	Land in which the area of bare sand (0.02 - 2 mm diam.) exceeds the area covered by any one class of plant growth-form. Dune vegetation often includes sandfields which are named from the leading plant species when plant cover ≥ 1%.
Loamfield/Peatfield	Land in which the area of loam and/or peat exceeds the area covered by any one class of plant growth-form. The appropriate name if given depending on whether loam or peat forms the greater area of ground surface. Loamfields and peatfields are named from the leading plant species when plant cover ≥ 1%.
Flaxland	Vegetation in which the cover of flax in the canopy is 20-80%, and in which the flax cover exceeds that of any other growth form or bare ground.
Pasture	Pasture comprises exotic grasses and herbs, and often includes sweet vernal, ryegrass, browntop, dandelion, foxglove, with scattered Yorkshire fog, selfheal, and white clover.

RELATIONSHIP OF SITES TO MEAN HIGH WATER SPRINGS

This appendix contains lists of sites (in alphabetical order) in each of the following groups:

- entirely above MHWS (i.e. on land);
- entirely below MHWS (i.e. in the coastal marine area - CMA);
- partly above and partly below MHWS (i.e. part on land and part in the CMA).

SITES ENTIRELY ABOVE MEAN HIGH WATER SPRINGS

SVHZ-107	Arawa Wetland
SVHZ-4	Bowentown Heads
SVHZ-165	Bryans Beach A
SVHZ-162	Bryans Beach B
SVHZ-201	Cape Runaway Pohutukawa Remnants
SVHZ-129	Clayton Place
SVHZ-177	Haurere and Opape Headlands
SVHZ-180	Hawai - Motu River (Part)
SVHZ-171	Hikuwai Beach
SVHZ-143	Hiwarau Pohutukawa
SVHZ-97	Hopukiore
SVHZ-181	Houpoto Swamp (Part)
SVHZ-156	Island near Whangakopikopiko Island
SVHZ-135	Islets near Ohakana Island
SVHZ-104	Kaituna River Wetlands (Part)
SVHZ-103	Kaituna Sand Dunes and Wetland
SVHZ-15	Kauri Point
SVHZ-123	Kohi Point
SVHZ-118	Kohika Wetland (Part)
SVHZ-53	Kopurererua Stream Wetland (Part)
SVHZ-47	Kuka Road Wetlands
SVHZ-163	Looney's Remnants
SVHZ-168	Lower Paerata Ridge (Part)
SVHZ-108	Maketu Road Wader Roost
SVHZ-182	Maraenui Wetland
SVHZ-74	Matakana Island 3
SVHZ-82	Matakana Point
SVHZ-70	Matakana Wetland A
SVHZ-71	Matakana Wetland B
SVHZ-72	Matakana Wetland C
SVHZ-73	Matakana Wetland D
SVHZ-117	Matata Scenic Reserve (Part)
SVHZ-95	Mauao 1
SVHZ-96	Mauao 2
SVHZ-203	Maungahiha
SVHZ-208	Motiti Islets
SVHZ-46	Motuhoa Island
SVHZ-210	Motunau Island
SVHZ-99	Motuotau Island

SITES ENTIRELY ABOVE MEAN HIGH WATER SPRINGS

SVHZ-209	Motuputa Island
SVHZ-98	Moturiki Island
SVHZ-31	Ngakautuakina Point
SVHZ-116	Ohinekoao
SVHZ-126	Ohope Dunes
SVHZ-125	Ohope Pohutukawa Remnants
SVHZ-124	Ohope Scenic Reserve and Extension
SVHZ-38	Omokoroa Wetlands
SVHZ-161	Onekawa
SVHZ-164	Onekawa Forest Remnants
SVHZ-176	Opape
SVHZ-121	Orini Stream (Part)
SVHZ-178	Oroi
SVHZ-194	Oruaiti (Part)
SVHZ-193	Oruaiti Wetland
SVHZ-160	Oscar Reeve Scenic Reserve and Extension
SVHZ-200	Otarawhata Island
SVHZ-101	Otira Sand Dunes
SVHZ-102	Papamoa Sand Dunes
SVHZ-136	Paparoa Pa Historic Reserve and Surrounds
SVHZ-202	Potikirua
SVHZ-114	Pukehina
SVHZ-148	Ruatuna
SVHZ-100	Shark Alley to Kaituna Spit Sand Dunes
SVHZ-6	Steele Road Wetlands A
SVHZ-7	Steele Road Wetlands B (Part)
SVHZ-17	Stokes Road Coastal Forest
SVHZ-83	Tahunamanu Island
SVHZ-190	Tauranga Stream (Part)
SVHZ-172	Te Matau (Part)
SVHZ-213	Te Paepae o Aotea (Volkner Rocks)
SVHZ-192	Te Ranginui (Part)
SVHZ-179	Te Whiorau (Part)
SVHZ-119	Thornton Road Dunes
SVHZ-81	Tirohanga Point Pohutukawa
SVHZ-140	Toritori
SVHZ-20	Tutaetaka Island
SVHZ-120	Wahieroa Wetland
SVHZ-191	Waihau Pohutukawa Remnants
SVHZ-88	Waiherehere Road Wetland
SVHZ-187	Waimanu (Part)
SVHZ-189	Waiokaha Stream Corridor (Part)
SVHZ-33	Waipapa Estuary Wetland
SVHZ-214	Whakaari (White Island)
SVHZ-186	Whanarua (Part)
SVHZ-196	Whangaparaoa (Part)
SVHZ-197	Whangaparaoa B
SVHZ-110	Wharere Road Wetland
SVHZ-138	Williams Wetland

SITES ENTIRELY BELOW MEAN HIGH WATER SPRINGS

SVHZ-26	Aongatete Estuary
SVHZ-16	Egg Island Sandbank
SVHZ-146	Kutarere
SVHZ-106	Maketu Estuary
SVHZ-35	Mangawhai Bay
SVHZ-36	Mangawhai Bay Intertidal Flats
SVHZ-25	Matahui Point Intertidal Flats
SVHZ-24	Matahui Road
SVHZ-34	Mid Tauranga Harbour
SVHZ-9	North Tauranga Harbour
SVHZ-144	Ohiwa Harbour
SVHZ-157	Ohiwa Loop Road Saltmarsh
SVHZ-39	Omokoroa
SVHZ-92	Rangiwaea Island Estuary
SVHZ-90	Rangiwaea Island Foreshore
SVHZ-147	State Highway 2
SVHZ-150	Stipa
SVHZ-14	Tauranga Harbour
SVHZ-94	Tauranga Harbour at Motungaio Island
SVHZ-145	Te Awawairoa Stream
SVHZ-29	Te Hopai Island
SVHZ-64	Te Maunga
SVHZ-41	Te Puna Estuary
SVHZ-77	Tirohanga Mangroves
SVHZ-80	Tirohanga Point Beach
SVHZ-12	Tuapiro Estuary Sandspit
SVHZ-61	Tye Park Inlet
SVHZ-112	Waihi Estuary
SVHZ-111	Waihi Estuary Southern Margin
SVHZ-45	Waipa Road
SVHZ-67	Waipu Bay Intertidal Flats
SVHZ-10	Yellow Point Sandbank

SITES PARTLY ABOVE AND PARTLY BELOW MEAN HIGH WATER SPRINGS

SVHZ-30	Apata Estuary
SVHZ-5	Athenree
SVHZ-131	Awaraputuna Stream
SVHZ-78	Blue Gum Bay 1
SVHZ-79	Blue Gum Bay 2
SVHZ-3	Bowentown Sand Dunes and Beach
SVHZ-2	Central Waihi Beach
SVHZ-58	Hairini
SVHZ-184	Haparapara River (Part)
SVHZ-128	Harbour Road
SVHZ-8	Hikurangi
SVHZ-142	Hiwarau (Part)
SVHZ-151	Hokianga Island
SVHZ-40	Jess Road
SVHZ-59	Kaitemako Stream Mouth
SVHZ-204	Karewa Island
SVHZ-18	Katikati Inlet
SVHZ-105	Maketu Spit and Wildlife Management Reserve
SVHZ-65	Mangatawa
SVHZ-37	Mangawhai Bay Inlet
SVHZ-69	Matakana Island 1
SVHZ-75	Matakana Island 2
SVHZ-76	Matakana Island 4
SVHZ-50	Matua Estuary-Yorke Park
SVHZ-207	Motiti Island
SVHZ-87	Motungaio Island
SVHZ-54	Motuopae Island
SVHZ-152	Motuotu Island Nature Reserve
SVHZ-91	Motutangaroa Isle Foreshore
SVHZ-183	Motu-Waikakariki River (Part)
SVHZ-212	Moutohora (Whale Island)
SVHZ-43	Newnham Road
SVHZ-62	Ngapeke Road Wetlands
SVHZ-154	Ohiwa Scenic Reserve and Surrounds
SVHZ-159	Ohiwa Spit
SVHZ-127	Ohope Spit
SVHZ-48	Oikimoke
SVHZ-175	Omarumutu
SVHZ-13	Ongare
SVHZ-85	Opureora Inlet
SVHZ-86	Opureora Islet
SVHZ-84	Opureora Spit
SVHZ-1	Orokawa (Part)
SVHZ-115	Otamarakau-Matata-Whakatane Dunes
SVHZ-89	Otapu Bay
SVHZ-139	Ouaki Creek Wetlands
SVHZ-19	Park Road Estuary
SVHZ-149	Pataua Island Scientific Reserve & Extension
SVHZ-57	Poike
SVHZ-113	Pukehina Spit
SVHZ-153	Pukeruru

SITES PARTLY ABOVE AND PARTLY BELOW MEAN HIGH WATER SPRINGS

SVHZ-66	Rangataua Bay
SVHZ-93	Rangiwaea Island East
SVHZ-188	Raukokore Mouth
SVHZ-158	Reeves Road Wetlands
SVHZ-211	Rurima, Moutoki and Tokata Islands
SVHZ-42	Snodgrass Road Inlet
SVHZ-195	Tapuaeharuru (Part)
SVHZ-206	Taumaihi Island
SVHZ-130	Tauwhare
SVHZ-185	Te Kaha (Part)
SVHZ-22	Te Rereatukahia
SVHZ-21	Tetley Road Inlet
SVHZ-199	Tikirau
SVHZ-173	Tirohanga Dunes and Wetland
SVHZ-174	Tirohanga Pa
SVHZ-11	Tuapiro
SVHZ-205	Tuhua (Mayor Island)
SVHZ-132	Tunanui Stream Inlet
SVHZ-141	Uretara Island
SVHZ-109	Waewaetutuki (Part)
SVHZ-44	Waikaraka Estuary
SVHZ-51	Waikareao Estuary 1
SVHZ-52	Waikareao Estuary 2
SVHZ-56	Waimapu Estuary
SVHZ-55	Waimapu Estuary Walkway
SVHZ-27	Wainui Estuary
SVHZ-28	Wainui Estuary Wetlands
SVHZ-137	Wainui Wetland
SVHZ-169	Waiotahe Beach
SVHZ-166	Waiotahe Estuary
SVHZ-167	Waiotahe Spit
SVHZ-133	Waiotane Stream
SVHZ-170	Waioweka Estuary
SVHZ-32	Waipapa Estuary
SVHZ-68	Waipu Bay Margins
SVHZ-49	Wairoa River
SVHZ-63	Waitao Stream
SVHZ-23	Waitekohe Stream Mouth
SVHZ-60	Welcome Bay
SVHZ-122	Whakatane Estuary
SVHZ-155	Whangakopikopiko Island
SVHZ-198	Whangaparaoa Beach and River Mouth
SVHZ-134	Whitiwhiti

INDEX OF SITES