



COASTAL RESOURCE INVENTORY

FIRST ORDER SURVEY

WELLINGTON CONSERVANCY

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PREFACE

The Coastal Resource Inventory (CRI) programme is an ongoing project of the Department of Conservation. The programme is organized into First, Second and Third Order Surveys which span the coastal zone of New Zealand. The First Order Survey provides the basis for a national overview of coastal conservation values and is derived from information on the physical, biological and human resources of the coastal zone. The Second Order CRI Surveys will provide regional overviews for each of the Departments Conservancies. Third Order Surveys will provide detailed information at a site specific level for a specific purpose.

The coastal zone covered by the Coastal Resource Inventory is an area bounded by the outer limits of the New Zealand Territorial Sea, 12 nautical miles offshore and the landward limit of marine influence. The latter varies from place to place depending on site specific physical, biological and human factors.

The First Order Coastal Resource Inventory presented here covers the coastal zone of one of the thirteen coastal conservancies of the Department. It is based on existing information compiled by conservancy staff from regional and national databases, published and unpublished reports, limited field surveys and personal or anecdotal information from various experts. The information has been compiled according to guidelines and standards set by the Departments' Coastal Resource Inventory Taskforce.

As one might expect, the First Order Survey has revealed a substantial variation in the quality and quantity of information between Conservancies and also between information categories. In general there is more information about the resources and attributes of the landward part of the coastal zone than the seaward part, especially offshore. Conservancies with large metropolitan centres such as Auckland have more information than the remote coastal areas of New Zealand such as the East Coast. This does not mean that the latter areas are lower in coastal conservation values or resources. Rather, it simply reflects the lack of knowledge and possible directions for further work, so that a balanced national overview of coastal conservation values and resources is eventually obtained.

The First Order CRI provides essential information for managers, planners and users of the coastal zone of New Zealand. The national overview provided by the First Order Survey will be updated from time to time by the Department as new information comes to hand.



Bill Mansfield
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DEPARTMENT OF CONSERVATION

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NATIONAL OVERVIEW

INTRODUCTION

The Coastal Resource Inventory (CRI) programme was initiated in 1987 as the Department of Conservation's principal tool for breaking the cycle of reactive management that has characterised coastal management in New Zealand in the past. CRI provides important information on the physical, biological, recreational, cultural, historic, archaeological, human modification, uses, protection and threats to the coast.

The First Order Survey consists of thirteen volumes, one from each coastal conservancy (Northland, Auckland, Waikato, Bay of Plenty, East Coast, Hawke's Bay, Wanganui, Wellington, Nelson/Marlborough, Canterbury, West Coast, Otago, Southland). Each volume includes a brief description of the conservancies' coastal zone, a summary of the conservation values, a list of issues of concern and recommendations for further work. The information is described on site sheets and plotted on maps at a scale of 1:250 000 to give a broad, overall impression of the coastal conservation values within each conservancy.

In addition to its primary use for coastal management, First Order CRI information will help identify areas suitable for marine reserves and aid in the advocacy role of the Department at both the national and conservancy level.

Mission Statement:

The primary mission of the First Order Survey was:

"To provide information for the maintenance, enhancement and restoration of natural character and qualities of coasts and their sensitive use."

The following specific tasks were developed to achieve the mission:

1. *"To identify coasts with important natural, scientific, historic, cultural and spiritual values;*
2. *to identify coasts currently protected and warranting protection;*
3. *to identify coastal conservation values susceptible to existing and potential threats;*
4. *to identify human modification and uses of coasts".*

INSTRUCTIONS FOR USE OF THE COASTAL RESOURCE INVENTORY

This folder consists of an introduction, summary, site record forms, and maps. The site record form gives written information on each site and is to be used with corresponding maps for that site.

Read the site record form with its corresponding maps by following these steps:

SITE RECORD FORMS

1. Turn to the site record forms.
2. Find the site number in the top right-hand corner of the page e.g. CRI 01 0001. The number 01 represents a conservancy coastline. Refer to map of New Zealand below e.g. 01= Northland Conservancy. The number 0001 refers to a particular site e.g. Firth of Thames.
3. Each site record form gives written information on the following:

natural values cultural values historic values	}	site of conservation value
existing threats human use and modification existing protection		

4. Letter codes (a,b,c,d,e,f,g) give detail for each part of the information on the site record form. A key is provided on the maps and the codes are listed in the "Methods" section.

MAPS

5. Turn to the map index overleaf. The index gives the site number and its corresponding maps.
6. Find the corresponding maps in the second part of the folder.
7. Accompanying the maps are two transparent map overlays:
 - i) CONSERVATION VALUES overlay
 - ii) BASE MAP overlay
8. The BASE MAP and CONSERVATION VALUES overlays are designed to lift out and overlay onto each of the previous pages (i.e. natural, cultural, historic, human modification and use, existing threats, existing protection etc.)
9. To accurately overlay the base map with each page, use register marks which are found on each map.

i.e.  overlays on 

DEPARTMENT OF CONSERVATION COASTAL CONSERVANCIES

- | | |
|------------------|------------------------|
| 1. Northland | 8. Wellington |
| 2. Auckland | 9. Nelson/ Marlborough |
| 3. Waikato | 10. Canterbury |
| 4. Bay of Plenty | 11. West Coast |
| 5. East Coast | 12. Otago |
| 6. Hawkes Bay | 13. Southland |
| 7. Wanganui | |



MAP INDEX - WELLINGTON

Site No.	Map Grp.
0001	8.1
0002	8.1 and 9.8
0003	8.3 and 9.8
0004	8.3 and 9.8
0005	8.3 and 9.8
0006	8.3 and 9.8
0007	8.3 and 9.8
0008	8.3 and 9.8
0009	8.3 and 9.8
0010	8.3 and 9.8
0011	8.3 and 9.8
0012	8.3 and 9.8
0013	8.3 and 9.8
0014	8.3 and 9.8
0015	8.3 and 9.8
0016	8.3 and 9.8
0017	8.3 and 9.8
0018	8.3 and 9.8
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0024	8.4
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0026	8.4 and 8.5
0027	8.5
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0030	8.5
0031	8.5
0032	8.5
0033	8.5
0034	8.2 and 8.5
0035	8.2
0036	8.2
0037	8.2

METHODS

The information for the First Order Survey has been collated and mapped in six major categories: natural, historic, cultural, existing threats, human modification and use, and existing protection.

1. Natural Values:

Information on known areas of physical, biological and ecological value in the coastal zone under the following headings:

- a - High degree of naturalness
- b - Rare/unique species, communities or habitats
- c - Important breeding/feeding/roosting/haulout/nursery areas
- d - Fragile/environmentally sensitive areas
- e - Unique or unusual landforms
- f - Representativeness
- g - Known scientific value
- h - National or international importance
- i - Other

2. Cultural Values:

Areas of important Maori and non-Maori cultural values in the coastal zone under the following headings:

- a - Traditional values
- b - Aesthetic value
- c - Landscape (seascape) value
- d - Spiritual value
- e - Educational value
- f - Other

3. Historic Values:

Areas of important historic and archaeological value in the coastal zone under the following headings:

- a - Known historic value
- b - Archaeological value - Maori origin
- c - Archaeological value - Non-Maori origin
- d - Shipwrecks and wreck sites
- e - Known national or international significance
- f - Other

Explanatory Notes

- (i) The decision to include the attributes "high degree of naturalness", "representativeness", "aesthetic value", "land/seascape value" and "spiritual" value was based on the experience of the data recorder.

The Natural, Cultural and Historic categories of information were combined to form the Conservation Value overlay map, where all features of natural, historic or cultural value were overlaid then amalgamated to form sites of conservation value (Conservation Sites). For each of these sites a brief description was provided on the Site Record Form. The Site Record Form contains details of the conservation values mapped and includes the following three other categories (4-6) that impact on these values:

4. Existing Threats:

Threats may be natural or human induced activities that are or have a history of damage or destruction of the coastal resources. Information on the following was collated and mapped:

- a - Erosion, flooding, landslip
- b - Siltation
- c - Noxious and invasive exotic plants
- d - Noxious or farmed animals
- e - Water pollution
- f - Mining
- g - Shore stabilisation works
- h - Aquaculture
- i - Fishing techniques
- j - Spoil and refuse dumping
- k - Recreation
- l - Coastal subdivision
- i - Other

Explanatory Notes

- (ii) The inclusion of "recreation", "mining", "aquaculture" and "fishing techniques" in the "Existing Threats" category was only used where these activities threatened conservation values. It is acknowledged that there are many places where these activities do not pose a threat.

5. Human Modification and Use:

Information on the following was collated and mapped:

- a - Land development
- b - Reclamations and causeways
- c - Commercial port areas
- d - Small boat harbours and moorings
- e - Outfalls, major pipelines and cables
- f - Artificial cuts
- g - Beach replenishment
- h - Shoreland-based recreation
- i - Water-based recreation
- j - Traditional Maori use
- k - Other

6. Existing Protection:

Areas of varying protection status in the coastal zone were mapped, including:

- a - National protected areas
- b - Regional protected areas
- c - Local protected areas
- d - Protective zonings
- e - Marine parks
- f - Private protected areas
- g - Voluntary protection of areas
- h - Rahui
- i - Other

Evaluating Site Importance

Evaluation of site importance was largely species based using the following criteria: The criteria for fauna (Bell, 1986) and flora (Given et al, 1987 and Wilson and Given 1989) are based on the IUCN Red Data list.

1. If a species of plant or animal is listed as endangered and it is an endemic species, then the place(s) where this plant or animal still remain are of INTERNATIONAL importance.
2. If a species of plant is vulnerable or rare, then the site where it naturally occurs is of NATIONAL importance. Similarly if a species of animal is classified as threatened or rare then the site is of NATIONAL importance.
3. For a species of animal that is classified as threatened regionally only, the site has regional importance.
4. Where sufficient information allowed the Ramsar convention was used to determine site importance in Wellington, East Coast and Bay of Plenty. The Ramsar convention states; *"a site is of international importance if 1% of the total*

population of a species or subspecies is found there or if the area supports 1% of breeding pairs".

5. Other information on site importance from the historic or cultural categories which is documented in the literature was also used.
6. The highest level of importance for any category located within a site is given to the whole site.

Explanatory Notes

(iii) The site importance is not a ranking system for the sites. It merely indicates whether there is a feature present at the site which is of known importance. The Conservation Sites identified in the First Order Survey vary considerably in size and importance.

(iv) Wildlife which have an established international conservation status in New Zealand include the terrestrial mammals, birds, reptiles and amphibians and terrestrial arthropods and molluscs. There is no established status list for fish, marine invertebrates and marine mammals. This means that the assessment of comparative site importance in this survey has an unavoidable bias towards the importance of terrestrial wildlife.

(v) Archaeological site information was presented here without comment on its comparative importance. This was necessary because:

(a) authority to assess archaeological site importance under the Historic Places Act 1980 rests with the New Zealand Historic Places Trust, for the purpose of regulating site damage.

(b) No methodology is recognised for assessing comparative importance in a similar manner applied to the other resources described here.

GLOSSARY

archaeological site	Any place in New Zealand associated with human activity which occurred more than 100 years before that time.
historic place	A place which is associated with the past. This includes archaeological sites, traditional sites, buildings, natural objects and historic areas.
holostratotype	A geological term describing the type section that has become the time definition for a New Zealand stage.
tombolo	A bar connecting an island with the mainland or with another island.
type locality	The place where a geological formation is named, and is typically displayed.
ventifact	Rock cut by wind-blown sand.

BIOLOGICAL TERMS:

endangered	Species in danger of extinction and whose survival is unlikely if the causal factors continue operating. Included are those whose numbers have been reduced to a critical level or whose habitats have been so drastically reduced that they are considered to be in immediate danger of extinction.
threatened/ vulnerable	Species believed to likely to move into the endangered category in the near future if the causal factors continue operating.
regionally threatened	Where species are considered to be threatened regionally.
rare	Species with small world populations that are not at present endangered or vulnerable, but are at risk. These are usually localised within restricted geographic areas or habitats or are thinly scattered over a more extensive range.
indeterminate	This category is used for plants thought to be extinct, endangered, vulnerable or rare, but for which there is insufficient information to allow allocation to a category.

In New Zealand a category additional to those used by IUCN (International Union for the Conservation of Nature and Natural Resources) has been found useful:

local	This category includes plants not under threat but potentially threatened, and hence deserving some level of monitoring and possibly protection. Included are regional endemics, plants of potentially vulnerable habitats, and species occurring as frequent but small populations.
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endemic	A species which is confined to New Zealand and is not found elsewhere.
endemic subspecies	A subspecies or geographic race which is confined to New Zealand.
introduced	A species which has been transported to New Zealand, and helped establish by humans.

MAORI

ENGLISH

hāngi	earth oven
hapū	section of large tribe, clan, subtribe
iwi	nation, people; tribe that traces its history back to a common ancestor
kai moana	food from the sea
kāinga	dwelling place, village
kaitiaki	guardian, keeper
Kaumātua	adult, old man or woman
kōhatu/ toka	stone, rock
mātaitai	food resources from the sea
mahinga mātaitai	the areas from which these resources are gathered
mahinga kai	sites for harvesting kai moana according to tribal customary values
mana	authority, control; influence, prestige, power; psychic force
mana whenua	customary authority exercised by a tribe in an identified area
marae	enclosed space in front of a meeting house, courtyard
mauri	life principle which is latent in all things
midden	Māori shell deposits
moana	sea
Moriori	tangata whenua of Rēkohu (Chatham Islands)
pā	fortified place
rāhui	control/ restriction (e.g. fishing control)
rūnanga	assembly/ council
taiāpure	area of coastal water set aside under the Maori Fisheries Act 1989 as a local fishery because of its special significance to an iwi or hapū, either as a source of food or for spiritual or cultural reasons
Tangaroa	god of the sea
Tangata whenua	indigenous people
tapu	sacred, forbidden (tapu consists of different levels of prohibitions)
tauranga waka	original canoe landing site
tupuna/ tipuna	ancestor/ grandparent
urupā	burial place
wāhi tapu	sacred site
waka	canoe; supra-tribal grouping
whānau	family

WELLINGTON CONSERVANCY

COASTAL RESOURCES INVENTORY: FIRST ORDER - SUMMARY CHAPTER

1.0 Background:

This first order inventory provides 1:250000 scale maps of the Wellington Conservancy with seven overlays (showing natural values, cultural values, historic values, threats, human modification and use, protected areas, and conservation values); site recording sheets (giving details of the individual sites); and this summary.

The conservation value overlay was derived by combining the natural, cultural and historic value overlays and this gave 37 sites where there were clusters of natural, cultural and/or historic values.

1.1 Introduction

This is a summary of Wellington's first order Coastal Resources Inventory, outlining information compiled for the Wellington Conservancy's coastline.

Information for this inventory was obtained from an extensive literature and database search and use of maps and photographs contained in the Wairarapa District Coastal Resource Inventory (1). Most of the literature was read and related to the practical knowledge held by Conservancy staff, some of whom have lived and worked in the region for many years. Approximately 30% of the coastline is well known to the authors and so has been field checked; this includes most of the Horowhenua coast, Kapiti Island, Mana Island, Pauatahanui Inlet and Titahi Bay - Rukutane Point, Fitzroy Bay, Makara and Sinclair Head - Owhiro Bay, Wellington Harbour, Cape Turakirae, Lake Wairarapa Wetlands and many of the Wairarapa coastal sites.

The status of plants and animals throughout this first order inventory follows the terminology of Given, D.R. *et al* (1987) 'Threatened and Local Plants of New Zealand: A revised checklist. Botany Division, DSIR, Christchurch', and Bell, B.D. (1986) 'The Conservation Status of New Zealand Wildlife. NZ Wildlife Service Occasional Publication No 12, Wellington'.

2.0 Summary of the Conservation Values of the Coastline:

The coastline of the Wellington Conservancy is approximately 550km long if the shoreline of the Lake Wairarapa wetlands is included (70km). The coast comprises coastal dunes and lagoons, coastal escarpments, coastal and shore platforms, and rocky outcrops. There are two important coastal wetland systems, a major harbour (Wellington), river estuaries and two major islands off the western coast.

2.1 General Description of the Coast

Description begins in the north-west of the Conservancy's coast, works south to the Wellington South Coast, and then north up the Wairarapa Coast to finish in the Conservancy's north-eastern coastal corner.

2.10 The north-west coast of the Wellington Conservancy is part of the extensive dune and coastal lake system that extends from Paekakariki to Waitotara in the Foxton Ecological District. Certain of the lakes, lagoons and swamps within this area are of considerable size and conservation value (eg. significant populations of threatened NZ Dabchick (Podiceps rufopectus) (pers. obs. and habitat for galaxiids of threatened and indeterminate status, in particular the Giant Kokopu, Galaxius argenteus (30)).

The district is currently being assessed in a Protected Natural Areas (PNA) survey (conducted by the Wanganui Conservancy). Results of this survey will soon be available.

The 60km of dunes in the Horowhenua are mostly covered with Marram Ammophila arenaria, Pinus radiata plantations and pasture (pers. obs.). Where unmodified they are mainly spinifex (Spinifex hirsutus) covered, although some pockets of pingao (Desmoschoenus spiralis) survive (2). There are some areas where Maori have recently replanted pingao, for dune rehabilitation and as a cultural resource (2). This region has been highly modified by rural and urban development, and recreational use. Much work will therefore be required to restore some areas to a near natural state.

2.11 Six kilometres offshore is the 1761ha Kapiti Island Nature Reserve, home of many translocated rare, threatened or endangered species such as Little Spotted Kiwi (Apteryx owenii) Saddleback (Philesturnus carunculatus) and Stitchbird (Notiomystis cincta). Introduced herbivores have been eliminated, but Kiore (Rattus exulans) and Norway rat (Rattus norvegicus) remain. A Marine Reserve has been proposed by the Department of Conservation for the waters around c50% of Kapiti Island and the seas back to the New Zealand mainland.

2.12 At Paekakariki, the coastal terrain changes dramatically. For 115km of the Wellington/Sounds Ecological District coastal escarpments predominate, with a well defined wave cut platform below. This platform has been raised by tectonic activity and is exposed all the way from Paekakariki to Evans Bay, in Wellington Harbour, except where interrupted by Porirua Harbour. The cliffs and platform are composed of Wellington Greywackes, a partly metamorphosed indurated sandstone which is only rarely associated with other rock types and rarely contains fossils (3). Near Pukerua Bay, the threatened skink Cyclodina whitakeri, survives on the New Zealand mainland (4). Offshore is Mana Island, a 217ha Scientific Reserve. In addition to having some rare and endangered species such as Giant wetas (Deinacrida rugosa), MacGregor's skinks (Cyclodina macgregori) and Cook's Scurvy grass (Lepidium oleraceum) (5), Mana is free of introduced mammalian herbivores and predators following the recent removal of farm stock and mice (pers. obs.).

Within this region is Porirua Harbour, a flooded river valley system. The western arm of Porirua Inlet is heavily modified by road and rail causeways, reclamation and urban pollution, but the eastern arm or Pauatahanui Inlet, has significant conservation values for fisheries (6,7) and historic sites (Historic Places Trust Inventory). The 70km of coast around Wellington Harbour is heavily modified with urban, metropolitan and harbour developments, but its three main islands and rocky shores have high wildlife values such as nationally important breeding populations of the rare Variable Oystercatchers (Haematopus unicolor) (pers. obs.), and much of the surrounding catchment is covered in native vegetation. Immediately east of Wellington Harbour, in Fitzroy Bay, sewage pollution and gravel mining are threats to natural values, including the unique Pencarrow Lakes, a coastal wetland complex, with moderate-high wildlife value (Sites of Special Wildlife Interest register).

2.13 The Tararua Ecological District has a relatively short (15km) coastline, from near Baring Head to just east of Windy Point. The beaches are either shingle or coarse sand, brought down as fault debris by the Orongorongo and Wainuiomata Rivers (3). The major feature here is Cape Turakirae, with its distinctive series of raised beaches, developing soils and vegetative successions (3). The natural and scenic values of Cape Turakirae are important to scientists and recreational users alike, with a large fur seal (Arctocephalus forsteri) haulout site being of particular interest (5).

2.14 Palliser Bay is part of the Wairarapa Plains Ecological District. It is dominated by Lake Wairarapa and Lake Onoke, with their surrounding wetlands. This complex forms the last 12% (11000ha) of the formerly extensive wetland system in the southern Wairarapa. These are mainly freshwater lakes with some brackish influence at the southern coastal end. These wetlands are very important for rare marsh turf plant communities (8), birds (9) and native fisheries (10). Including Lake Wairarapa, there are approximately 70km of coastline here.

2.15 Cape Palliser, in the Aorangi Ecological District, is at the end of the Aorangi Range. The 40km section has some high/medium botanical and wildlife values including a large fur seal haulout site, but it is mainly the geology that is noteworthy. Amongst the dominant, older greywacke are spectacular formations of younger alluvial gravels, mud and sandstones, volcanics and limestone (11). Fossils are relatively common, as are fault-related features (11). Erosion along this coast, although a natural process, has been accelerated by devegetation in the region, and the resulting increased sedimentation led to the disappearance of sensitive filter-feeding shellfish such as mussels and tuatua from archaeological remains around 1400 AD (12). Cliffs at the foot of talus slopes from the Aorangi Range are retreating spectacularly fast through sea erosion in the vicinity of Ngapotiki (13).

2.6 The remaining 200km of the Wairarapa coast is in the Eastern Wairarapa Ecological District. This region was largely deforested in pre-European times, and never recovered, probably because of unstable soils, harsh climate and regular burning during summer droughts (12). This highly modified area is now farmed extensively and little original vegetation remains, except perhaps on some dunes and pockets of wetland (1). The eastern Wairarapa coast is being uplifted by tectonic activity and is characterised by raised beaches that are visible up to 5km inland and 250m above sea level (14). A narrow (100-800m wide) coastal bench runs for most of the length of the coast and raised Holocene marine beach ridges are particularly obvious on this coastal beach (1,14). Most of the Wairarapa coast is retreating with sea erosion, in some cases at rates of over 1m/year (13). Many small river estuaries exist, but with their catchments thus modified, few natural values remain intact (12) and their value to wildlife is limited. Because their exits are often blocked by sandbars, river water backs up and drowns potential feeding habitats (pers. obs.).

The eastern Wairarapa coast is complex, with sandy beaches, dunes, rocky outcrops and shore platforms. Blocks of limestone, sandstone, mudstone, volcanics, and a fossil totara forest are evident at various points through the region (11). The continental shelf is very narrow, and so commercial and recreational fishing is concentrated within this narrow band.

Kahu Rocks are an extensive and complex reef system near Honeycomb Light, near which three oceanic current systems converge seasonally (15). This results in a unique and diverse community with distribution overlaps of marine flora and fauna (15). Several parts of the coast (eg. Pahaoa estuary, Uruti Point and South Riversdale) still retain native vegetation such as pingao, spinifex and sand daphne (*Pimelea arenaria*) on fragile small dune systems (1,16). The main site of particular conservation value is Castlepoint with its high botanical, geological and scenic values, including being the only site in New Zealand with the rare endemic daisy, *Brachyglottis compacta* (17).

3.0 Areas of Outstanding Conservation Value on Wellington Conservancy's Coastline

Table of Distances in Wellington Conservancy:

Importance Ranking	No. Sites	Approx. Length (km)	% of Wellington Conservancy Coast
International	3	103	18.7
National	16	269.5	49.0
Regional	9	53.5	9.7
Local	9	24	4.4
Total	37	450	81.80 *

* The remaining 100km (18.2%) of coast has not been assessed, but is unlikely to contain any sites of international, national or regional importance (pers. obs.).

3.1 Three sites, covering 103km of coastline, have been identified as being of International importance:

Kapiti Island, site 09/0002

Whitireia Penninsula - Rukutane Point, site 09/0007

Lake Wairarapa, site 09/0019

* Kapiti Island is a Nature Reserve with no browsing mammals (17) and is internationally important as it is home to several of New Zealand's rare and endangered birds, eg. Little Spotted Kiwi (Apteryx owenii) (18). The island and surrounding waters have considerable cultural and historical value to both Maori and Pakeha. A former Maori stronghold, its spiritual values are such that four iwi (tribes) lay claim to Kapiti Island through the Waitangi Tribunal. In European times, Kapiti has been inhabited by traders and whalers, and has been manned by reserve wardens since the island was declared a bird sanctuary in 1897. A Marine Reserve has been proposed by the Department for the waters around c50% of the island to protect the rich and diverse marine flora and fauna.

* The Whitireia Penninsula-Rukutane Point site contains a fossil forest, under the south end of Titahi Bay beach, which dates to the last interglacial. This fossil forest has been ranked as being of regional importance (Geopreservation Inventory). Also of interest are the well-developed fold structures and interbedding between Titahi Bay and Rukutane Point (3). It is also noted as supporting representative cliff vegetation of the region (5), and two endangered endemic plant species, ie. Hebe elliptica var. crassifolia and Leptinella nana (a button daisy) (31), and is therefore of international importance.

* Lake Wairarapa Wetlands have many conservation values, and according to the International Union for the Conservation of Nature (IUCN) criteria, would qualify to rank as a wetland of international importance to birds. This is because the site regularly supports more than 1% of the population of 12 species of waterfowl or waders (9). This site is also of national importance for turf plant species (8), and native fisheries, especially those fish species with diadromous life cycles (10).

3.2 Sixteen sites, covering 269.5km of coast, have been identified as being of National importance:

Kapiti/Horowhenua Coast - site 09/0001

Coastal Escarpments - site 09/0003

Pukerua Bay/Wairaka Point - 09/0004

Plimmerton - site 09/0005

Pauatahanui Inlet - site 09/0006

Mana Island - site 09/0008

Rock Point - site 09/0009

Cape Terawhiti to Tongue Point - site 09/0013

Runaround to Karori Stream - site 09/0014

Wellington Harbour - site 09/0016

Pencarrow Head to Baring Head - site 09/0017

Turakirae Head - site 09/0018

Putangirua/Whatarangi - site 09/0020

Cape Palliser - site 09/0021

Kaiwhata River mouth - site 09/0028

Castlepoint - site 09/0034

* The Kapiti/Horowhenua Coast is nationally important for the dune-dammed wetland remnants which are home to about 10% of the population of the threatened endemic Dabchick (Podiceps rufopectus) (pers. obs.). Also of note are several important landforms and geological formations, in particular the Hokio dunefields (Geopreservation Inventory).

* Coastal Escarpments. This 115km strip of steep coastal cliffs and scree slopes supports specialised plants such as an endangered button daisy (Leptinella nana) and the vulnerable giant biddibid (Acaena pallida), and animals such as the threatened Whitaker's skink (Cyclodina whitakeri) (4) and the regionally threatened Brown Speargrass Weevil (Lyperobius huttoni) (5). The land behind the escarpments is farmed, but the remote and rugged nature of the escarpments has prevented development. The escarpments have therefore retained much of their natural character, which is of great value to conservation. Geological values of this site include the fossils at Rock Point (3), the Tongue Point Marine terraces, and the Red Rocks volcanic intrusives (Geopreservation Inventory).

* Pukerua Bay - Wairaka Point. This is a site within the coastal escarpment system that is particularly valuable because it has the only mainland population of the threatened endemic Whitaker's skink (4), which led to its ranking on SSWI (Sites of Special Wildlife Interest) of "outstanding".

* Plimmerton has some remnants of the formerly extensive coastal forest, and Taupo Swamp, a 40ha remnant of a larger coastal wetland (5). The coastal forest is of the uncommon tawa/kohekohe type (Beilschmedia tawa/Dysoxylum spectabile) which contain individuals of the locally rare milk tree, or turepo (Streblus heterophylla) (5) and an area of regenerating bush, described as manuka scrubland, contains the green gecko (Naultinus elegans) (5). Taupo Swamp is home to the threatened, endemic giant kokopu (Galaxius argenteus) (5), and is of national importance.

* Pauatahanui Inlet is considered to be of national importance because of the combination of its many natural, cultural and historical values. Much of it is protected as Wildlife Reserve, and has a moderate/high ranking on SSWI, and a national/regional ranking on WERI (Wetlands of Ecological and Regional Importance). It is probably the best studied water body in the Conservancy, and is of immense value to the fishery (7), and to the study of estuarine ecology (6).

* Mana Island, 217ha, is a Scientific Reserve 5km off Wellington's west coast, administered and permanently staffed by the Department of Conservation. Wildlife values, including strong populations of threatened MacGregors Skinks and Giant Wetas are listed as "outstanding" (Sites of Special Wildlife Interest register). Formerly a quarantine station and farmed, an ecological restoration project is in progress here with emphasis on making the island rodent-free, and revegetating it in coastal forest of the Sounds-Wellington Ecological Region (pers. obs.). Mana is now believed to be rodent-free.

* Rock Point is the type locality for fossil tube-worm burrows in Wellington Greywacke. The presence of fossils in greywacke is very unusual (3).

* Cape Terawhiti has, apart from the representative wildlife and botanical values of Wellington's coastal escarpments such as a major seal haulout site (pers. obs.), the very rare phenomenon of gold mineralisation in greywacke (3). This is the result of a long period of water percolation through fault-weakened rock seams. There is also the historically significant ore crushing plant slightly inland at the old gold workings (3).

* The Run-around to Karori Stream site abounds in natural and cultural values and includes the Scientific Reserves at Sinclair Head and Red Rocks. This is one of the five NZ fur seal haulout sites on the Wellington coast (5), and has two colonies of the regionally threatened Brown Speargrass Weevil, and one of these colonies is protected (pers. obs.). The pillow lava formations and argillite intrusives into Wellington Greywackes, evident at Red Rocks, are considered a nationally important geological feature (Geopreservation Inventory).

* Wellington Harbour, despite being heavily modified, abounds in natural values, including a nationally important population of the rare Variable Oystercatcher (pers. obs.). However, it is the cultural and historical values to both Maori and Pakeha that are of particular national importance.

* The Pencarrow Head to Baring Head site contains two lakes and associated wetlands which were uplifted by the 1855 earthquake. They are representative of "recent" wetlands, and contain examples of freshwater plants existing beside salt marsh plants, particularly at the southern (seaward) extremities (5). The rare sedge pingao grows in pockets here (pers. obs.) and the lakes shelter threatened endemic giant kokopu (Galaxius argenteus), and the Spotless Crake (Porzana tabuensis) (5). The wetlands and lakes ranked highly on both SSWI and WERI, and the Pencarrow Lighthouse is ranked as being of national importance on the HPT (Historic Places Trust) Inventory.

* Turakirae Head provides an outstanding series of tectonically raised beaches with geological, botanical and wildlife values of national importance (5, 11).

* The Putangirua/Whatarangi site contains the best example of natural "badlands" erosion in New Zealand (Geopreservation Inventory), with earth pinnacles up to 18m high (19). The Whatarangi Bluff is regarded as being of regional importance for fossils (Geopreservation Inventory).

* Cape Palliser has nationally important stands of two rare plants: Rytidosperma petrosum (20) and pingao (21). The Wairarapa District is dotted with regionally important geological anomalies such as the volcanic intrusion at Cape Palliser (22). The well documented pre-history of the area is exceptional (12) and the density of archaeological sites is high compared with the rest of the Wairarapa Coast (pers. obs.).

* The fossil totara forest at the Kaiwhata River mouth is nationally important as an example of recent geological changes on the Wairarapa coast (11, Geopreservation Inventory).

* Castlepoint is important for being one of the few sites in the East Wairarapa where original coastal vegetation remains and this contains what is believed to be the only population of a rare species of daisy, Brachyglottis compacta. The reef and Castle Rock are composed of limestone and marine fossils, some 2 million years old, and the marine benches are regarded as being of national importance (Geopreservation Inventory). This site has also been ranked as having national significance for the importance, quality and degree of recreational use of the area (23).

3.3 Nine sites, covering 53.5km of coast were identified as being of Regional importance:

Makara River Estuary - site 09/0011
Taputeranga Island - site 09/0015
White Rock/Opouawe Estuary - site 09/0022
Pahaoa River - site 09/0025
Honeycomb Rock/Kahu Rocks - site 09/0026
Uruti Point - site 09/0030
Southern Riversdale dunes - site 09/0031
Whakataki-Mataikona - site 09/0035
Owahanga River - site 09/0036

* Makara River Estuary is regionally representative of coastal river mouth flats, which are very uncommon in Wellington (5). It is home to a regionally uncommon freshwater snail (Melanopsis trifasciata) (2). The threatened Reef Heron (Egretta sacra) is also resident here, and the site is a breeding ground for both Black Flounder (Rhombosolea retiaria) and Lamprey (Geotria australis) (5).

* Taputeranga Island is a 3.2ha island situated near the Wellington suburb of Island Bay, on the South coast. It features in Maori folklore as the vantage point from which Kupe saw the wheke (giant octopus) in pursuit of which he set off across the ocean. The name means "Island of sacred ways" and is of spiritual significance to Maori (27). Certain saltmarsh plants, such as Crassula moschata have been recorded here, and it is a regionally important nesting site for Blue Penguins (Eudyptula minor) (5) and rare Variable Oystercatchers and threatened Reef Herons (27). Norway Rats are present, and these limit the island's natural values (5).

* The White Rock to Oroi site is regionally important because of a combination of unusual and distinctive geological features including very active sea erosion (13), and a high concentration of archaeological sites (pers. obs.).

* The approximately 2ha stand of rare pingao in sand dunes just south of the Pahaoa River (1) is regionally important. Several threatened or rare birds breed in the area and feed at one of the largest estuaries on the Wairarapa Coast (SSWI). There is a very high concentration of archaeological sites of Maori origin on both sides of the Pahaoa River estuary (HPT Inventory).

* The Honeycomb Rock - Kahu Rock site has many regionally important natural values including the unusual geological features of Honeycomb Rock, intrusive conglomerates, and a volcanic dyke (11), a small patch of rare pingao (1), a seal haulout site, and an extensive reef system with a diverse marine flora and fauna (24).

* Uruti Point is regionally important as the largest area of dunes (c.100ha) on the Wairarapa Coast, but little is known of their vegetation and wildlife values (pers. obs.).

* The Southern Riversdale dunes have regionally important botanical values, with indeterminate status sand daphne (Pimelea arenaria) and an unusual North Island record of matagouri (Discaria toumatou) (16).

* The unusual geological feature of "tongue and groove" erosion effects on the shore platform on the Whakataki-Mataikona coast is regionally important (11). This is also a traditionally important site for Maori (25).

* The Owahanga River is regionally important as the largest river and tidal flats on the east coast of the Wairarapa (pers. obs.) and it received a "moderate" SSWI ranking.

3.4 Nine sites, covering 24km of coast were identified as being of Local importance.

Pipinui Point - site 09/0010

Black Point - site 09/0012

Tora/Awhea River estuary - site 09/0023

Oterei River Mouth or Te Awaitei - site 09/0024

Flat Point - site 09/0027

Patanui Stream Mouth - site 09/0029

Motuwaireka Stream Mouth - site 09/0032

Orui/Otahome - site 09/0033

Akitio River - site 09/0037

* Pipinui Point consists of a rock stack backed by steep coastal slopes. It is one of the four colonies of the White-fronted Tern (Sterna striata) in the Wellington Region, and one of the few mainland sites (5). Pipinui Point was the one of five colonies of Sooty Shearwaters (Puffinus griseus) in the Wellington Region, but the colony died out in 1963 (26).

* Black Point. This is one of the most remote sites on Wellington's southwest coast. It has been described on SSWI as being regionally important as a winter haulout site for the NZ fur seal. It is, in fact, one of the several haulout sites in the Wellington Conservancy. The NZ fur seal is not considered to be endangered, and the population appears to be increasing (pers. obs.).

* The Tora/Awhea River Estuary area is typical of the Wairarapa coast, but lacks any particularly distinctive features (pers. obs.). The coastal forest (10ha) on the escarpment could be of regional significance but no field checks have been carried out (pers. obs.).

- * The Otarei River mouth or Te Awaiti is representative of many estuaries on this coast, but is small and of only local significance compared with other estuaries on the nearby coast (pers. obs.).
- * The tombolo at Flat Point is an unusual geomorphological feature of the Wairarapa coast, but is of only local significance (pers. obs.).
- * The Patanui Stream mouth has a small but locally important patch of coastal vegetation that is largely free from disturbance by domestic stock (SSWI).
- * The Motuwaiereka Stream mouth is locally important for wildlife, but there is considerable disturbance by recreational users of this site (pers. obs.).
- * The coast from Orui to Otahome, contains the estuary of the Whareama River, but this is small and within steep banks and is only locally important as wildlife habitat (SSWI).
- * The Akitio River estuary has breeding rare or threatened bird species (Variable Oystercatchers and Banded Dotterel (Charadrius bicinctus)), but the site is small and only locally important compared with nearby Owahanga Estuary (pers. obs.).

4.0 Specific Issues Relating to the Wellington Conservancy Coastline

The main issues of concern to the Department of Conservation in Wellington are often inter-related and are as follows:-

- 4.1 Modification of coastal dune systems and beach erosion;
- 4.2 Siltation through erosion;
- 4.3 Invasive plants/pest animals;
- 4.4 Damage to waahi tapu sites, losses of cultural resources;
- 4.5 Water Pollution;
- 4.6 Plastic Pollution;
- 4.7 Depletion of living marine resources;

4.1 Modification of Natural Dune Systems and Beach Erosion

The dune system of Kapiti/Horowhenua, their associated lagoons and wetlands, and the small dune systems at various points along the eastern Wairarapa Coast are extremely fragile, yet urban and rural development has modified and continues to modify these (pers. obs.).

Firstly, the dunes have become unstable with devegetation, and erode during storm surge conditions, sometimes threatening housing (pers. obs.). The response near urban areas has been the installation of unsightly sea walls which reflect wave energy instead of absorbing it as the dunes did (pers. obs.). In turn beaches are then eroded by back-scouring and those in this area are flat, and unusable at high tide. This is a hostile environment to shellfish and the aesthetic values of the beaches are diminished (pers. obs.). In the Horowhenua district, the problem is more with recreational vehicles, such as dune buggies and trail bikes which damage dune vegetation, cause beach erosion through wheel ruts and crush shellfish at low tide (28, pers. obs.). Pine forests have hidden the intrinsic nature of active dune systems near Waitarere (pers. obs.). At about a dozen sites on the Wairarapa coast fishing boats are launched from beaches by using tractor-or bulldozer-towed cradles and this damages dune vegetation and can affect the natural values of the beach (pers. obs.).

4.2 Siltation through Erosion

Apart from the Tararua, Rimutaka and Haurangi Ranges, most of the forested areas in the Wellington Conservancy have been cleared. This, together with the effects of feral animals in the forest areas and earthquake-caused landslips has led to increased soil erosion and a high sediment load in many of the Conservancy's rivers (29). Along much of the Wairarapa coast sea erosion is also very active, with the conglomerate cliffs at Ngapotiki (site 09/0022) retreating at 3.46m/year between 1944 and 1973, and nearby gravel beach ridges at 9.45m/year between 1944 and 1973 (13). Along much of the Wairarapa coast this erosion is very evident and the sea near the shore is consequently very turbid (1). The result of high sediment loads in the sea is the loss of sensitive filter-feeding shellfish such as mussels and tuatuas, for example, and the loss of these species from Maori middens in Palliser Bay after 1400 AD has been attributed to increased erosion following land clearance in the nearby hills (12).

4.3 Invasive Plants and Pest Animals

The unique coastal habitats and plant communities are under threat from invasive exotic plants and browsing animals. The often harsh coastal environment is inhabited by highly specialised flora and fauna which have evolved in these conditions, and these slow-growing endemics (eg. pingao) have been outcompeted by the introduction of certain fast-growing exotics such as marram, and pine used to stabilise dunes (pers. obs.). Other invasive exotic plants are Bone Seed (Chrysanthemoides monolifera) on rocky shores, and Boxthorn (Lycium ferocissimum) on Mana Island and the Kapiti Coast (pers. obs.). Stock grazing, and feral animals such as goats (Capra hircus) and rabbits (Oryctolagus cuniculus) damaging endemic plants through browsing and trampling, are also a problem on our coasts (pers. obs.).

4.4 Waahi Tapu and Loss of Cultural Resources

The coastline of the Wellington Conservancy has a long history of Maori occupation (Historic Places Trust Inventory) and in some places this has been closely studied (12). However, little formal information has been gathered on waahi tapu (sacred places) because of limited communication between the Department of Conservation and iwi in the past.

Cultural resources include native plants such as pingao and kakaho (*Cortaderia toetoe*) which are used for basket-making and weaving, and whale bone and teeth which are used for fish-hooks and ornamental carvings. Dune erosion and consequent stabilisation with marram and pines, and invasive animals and plants have depleted these native plants (pers. obs.). If undisturbed, pingao stabilises dunes and is far more pleasing aesthetically (pers. obs.). The Department, in administering the Marine Mammals Act, controls the fate of whale bones and teeth, which are a cultural resource and considered taonga, or treasures, by Maori.

The loss of cultural and historical resources to land development has also occurred. For example, road realignment at Pauatahanui unintentionally obliterated scientifically significant beach and archaeological sites (pers. obs.).

4.5 Water Pollution by Sewage

Rapid population growth and lack of planning on the Kapiti Coast has led to overloading of the existing sewage treatment system. As a result, semi-treated effluent is sometimes contaminating the water table, waterways and beaches (pers. obs.).

The water classification of the Wellington Harbour and South Coast is an issue which is still in contention, due to a dispute over the legality of the recently upgraded classification. The Wellington City Council is committed to secondary treatment with a long outfall at Lyall Bay; however, Hutt City is appealing to the Planning Tribunal, a move that the Department of Conservation is contesting. The continued sewage pollution of Fitzroy Bay results in the loss of recreational amenities and natural values such as fisheries (pers. obs.).

4.6 Plastic Pollution

Irresponsible disposal of plastics such as bags, disposable nappies, beverage and household cleanser containers, and pallet strapping, result in their arrival on our coasts, detracting from aesthetics and also causing hazards to wildlife (pers. obs.). Reduced useage of such persistent material is advocated, coupled with better recycling facilities and collection of plastic material off beaches.

4.7 Depletion of Living Marine Resources

The high population (500,000) within the Wellington Conservancy confers heavy commercial and recreational use of our coastal waters and ecosystems, which has led to the depletion and degradation of some coastal resources such as paua (Haliotis iris) and crayfish (Jasus edwardsii) (pers. obs.). The Department is concerned primarily with the protection of habitat and water quality and as such is committed to creating a network of Marine Reserves around our coastline. These are intended as refuges for marine life similar in concept to our many terrestrial reserves. Marine Reserves near populated areas will additionally provide recreational and educational opportunities to the public and these opportunities will be used to advocate better treatment of our coasts. In addition, the scientific benefits of these unexploited areas may provide valuable information on future fisheries management.

5.0 Direction for the Second Order Survey

The Wellington Conservancy's Second Order Coastal Resource Inventory will concentrate on six areas:

- * with iwi we plan to protect waahi tapu and urupa and document traditional use of coastal resources. The groundwork provided by the series of coastal policy hui will enable us to work closer together with local iwi.
- * more information needs to be gathered on the Maori and early European historic use of the coast of the Wellington Conservancy.
- * more field checks over the Wairarapa coastline need to be performed to check on our interpretation of oblique aerial photographs and especially to gather more information on the vegetation of the dune areas (eg. Pahaoa, Uruti).
- * aerial photography of the coastline should be extended beyond the Wairarapa Coast from Palliser Bay to the Manawatu River.
- * the literature search has revealed an information gap in the marine environment of the west coast of Wellington, south of Mana Island, and so we intend to map habitats and undertake basic biological surveys in this area.
- * our extensive bibliography will be catalogued, preferably on computer.

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Site Record Forms

Site Name/s: Kapiti/Horowhenua Coast

Site No: 09/0001

Recorders Name: Bruce Dix

Conservancy: Wellington

Map/Grid Ref: NZMS 260, 26935 60524

Date: 1 May 1990

Brief Description of Site: This is a large site (330km²) comprising dune fields, dune lakes, marsh areas and river estuaries which extend to abandoned sea cliffs. The wetland sites have recently been the subject of a PNA (protected natural areas) survey. Some of the lakes are larger than 100ha, eg. Lakes Papaitonga and Horowhenua. This site is steeped in Maori and colonial history; the once extensive coastal forests were clear-felled for timber and farmland. Some of the forest remnants are protected, eg. Papaitonga Scenic Reserve, and Nikau Scenic Reserve, named for the predominant Nikau Palm, *Rhopalostylis sapida*. There are still isolated pockets of pingao (*Desmoschoenus spiralis*) and Spinifex (*Spinifex hirsutus*) is still common. This extensive coastal strip is under great pressure from the diverse activities of humans, including farming, forestry, and expanding urbanization.

Conservation Values:

Natural: a,b,c,d,e,f,g,h

Cultural: a,b,c,d,e

Historic: a,b,d

Comment:

Natural: There are pockets of coastal forest, swamp and dune fields. The dune dammed swamp at Whareroa, the Hokio Beach dune fields, and the Otaki Beach ridges, are all listed in the NZ Geopreservation Inventory (7). There are river estuaries which support many species of waders and waterfowl, such as Oystercatchers (*Haematopus* spp.) at Waikanae Estuary, which is also a Scientific Reserve (4,5,6,8). The dune lakes are used extensively by waterfowl and contain significant populations of the threatened Dabchick, *Podiceps rufopectus* (4). The beaches support many species of shellfish (3, pers. obs.). The type locality (for *Maurea waikanae*, a rare top shell, is situated at Waikanae (3). The remaining wetlands are representative of the formerly extensive complex which existed here, prior to being drained. Several galaxiid species, including the threatened Giant Kokopu (*Galaxius argenteus*) are contained in the wetlands (12).

Cultural: The dune lakes and beaches are a traditional source of eels and seafood for the Maori, and many battles have been fought over these productive lands as successive iwi migrated South. The Maori of today recognise the significance of the area for its many grave and battle sites (5). The extensive beaches are largely unspoilt, and the low rounded dunes are characteristic of spinifex and pingao. Dunes covered by introduced Marram (*Ammophila arenaria*) are high and steep, in contrast. Dunes covered by native vegetation have aesthetic and landscape values. Some pingao has been replanted by Maori around Hokio as dune rehabilitation and as a cultural resource for weaving (pers. obs.). There are toheroa (*Paphies ventricosum*) on the beaches to the north of Otaki (3, pers. obs.). Toheroa are an important traditional food to Maori, access to which has been recently won by the Muaupoko through legal action (5). The Waikanae Estuary has been the subject of several scientific studies (8,9).

Historic: There are many archaeological sites of Maori origin including an outrigger canoe found near Waikanae. Otaki is the site of the historic Rangiatea Church and the historic Jenkins timber cottage and garden, dating from European colonial times.

The wreck of the "Hyderabad" lies on Waitarere Beach (11), and the "Cornishman" near Ohau. There are various wrecks near the mouth of the Manawatu River, from the days when Foxton was a major port (11).

Site Importance:

International

National

Regional

Local

Unknown

Comment: The wetlands and lakes contain significant populations the threatened endemic Dabchick (4). The Hokio Beach dunefields are classified as of National importance (7).

Existing Threats: a,b,c,d,e,g,j,k,l,m

Type & Comment: Coastal erosion, both natural and human-induced (1,2,5) threaten recreational beaches and housing. Some houses, built in the dunes, have previously fallen into the sea, particularly during the storm of 1976 (2). Consequently unsightly shore stabilization works have been constructed, some of which formerly incorporated old car wrecks. Such works usually lower the beach profile, making them unusable at high tide. Dune damage has resulted from irresponsible use of recreational vehicles (5) and afforestation (7). Lowered water quality in rivers, estuaries, lakes, and beaches from stormwater and the overflow of partly treated sewage threaten health and amenities (4,5). Habitat changes, such as entrophication and dessication, caused by fertilizer runoff and overdrawn groundwater threaten wildlife (4,5,8). Damage to shellfish beds has been caused by vehicular traffic and poaching (5,10) siltation in rivers (and thence to the sea) occurs, for example, at Manawatu river and Otaki River, the latter through gravel mining operations. Marram (*Ammophila arenaria*) has been introduced for shore stabilization purposes, and boxthorn (*Lycium ferocissimum*) introduced as a hedge species. Both are spreading through the dune country. Rabbits (*Oryctolagus cuniculus*) also exist throughout the dune country, as do feral cats (*Felis domesticus*) (3,5). These threaten native vegetation and wildlife such as ground-nesting birds (3). Coastal subdivision threatens natural values, such as wetland areas, particularly at Waikanae Estuary (3,4,5). The coast is also threatened by oil and chemical pollution, and plastic rubbish. Examples include an orthene (agricultural poison) spill in 1989, and two oil slicks in early 1990, from passing ships (5). These affect natural values, aesthetics, and wildlife such as seabirds, through fouling, entanglement, and poisoning (3,4,5).

Human Modification and Human Use: a,d,e,f,h,i,j

Type & Comment: Farming, market gardening, forestry and urban development occur in the area. A small marina is located at Waikanae River Mouth. Many stormwater outfalls are situated at Paraparaumu and Raumati Beaches. There are artificial cuts at Waikawa and Waikanae. Shore based recreation includes swimming, beach combing, surfcasting, shellfish collecting, set netting and whitebaiting. Traditional Maori use includes eeling, whitebaiting and shellfishing. Some boating occurs offshore at Waikanae and Paraparaumu. Recreational vehicles such as dune buggies, trail bikes are used on dunes and beaches. (3,4,5).

Existing Protection: a,b,c,f

Type & Comment: Wildlife Refuge at Waimeha (Waikanae) 13ha
Scenic Reserves - Nikau 11ha, L.Papaitonga 111ha, Kaitawa 556.8ha, Hemi Matenga 331.3ha & Paraparaumu 171.6ha
Govt. Purpose Reserve - McKay's Crossing (dunes & swamps) 7ha
Scientific Reserves - Waikanae (27.3ha), Kiripiti (1.98ha). Protection at Waikanae is considered inadequate (3,4,5)
Regional Park; QEII Park at Raumati (638.4ha)
Local Domain Board - Lake Horowhenua (306ha)
There is a Soil Conservation area on the south bank of the Otaki River, at the mouth, area not recorded
Nga Manu Bird Sanctuary at Waikanae. The protected areas cover but a fraction of the coastal lands, and more protection is needed due to rapid development in the region, not all of it compatible with natural values (5)
There are also smaller reserves and esplanade reserves throughout the urban areas of the coast.

Availability of Information:

Natural	①	2	3	1. Well documented
Cultural	①	2	3	2. Limited information (general)
Historic	①	2	3	3. Little information (if any)
Threats	①	2	3	
Human Mod. & Use	①	2	3	

Comment: Much information is missing due to historical ad hoc development and poor records.

Sources of Information:

Natural	1	2	3	4	5	6	7	1. Derived info. from existing literature & databases
Cultural	1	2	3	4	5	6	7	2. Derived info. as above & field check
Historic	1	2	3	4	5	6	7	3. Derived from existing maps & aerial photographs
Threats	1	2	3	4	5	6	7	4. Recent DOC survey including sampling & analysis
Human Mod. & Use	1	2	3	4	5	6	7	5. Recent DOC survey excluding sampling & analysis
								6. Experience
								7. Expert opinion

Comment:

- Holland, M.K.; Holland, L.D. 1985. Processes of Coastal Change Manawatu-Horowhenua - Manawatu Catchment Board and Regional Water Board Report No. 66. 192pp.
- Gibb, J.G., 1978. The Problem of Coastal Erosion along the Golden Coast, Western Wellington, New Zealand. Water and Soil Technical Publication No. 10.
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- H.A. Robertson, Advisory Scientist, DOC Wellington (Pers. Comm.)
- B. Dix, SCO DOC, Wellington, Pers. Obs.
- Powlesland R.G.; Robertson, H.A. 1987. Changes in Gull numbers over 25 years and notes on other birds on the Otaki-Ohau Coast. Notornis 34:327-338.
- NZ Landform Inventory; First approximation. 1989. Research School of Earth Sciences Occ. Paper No. 4. Victoria University of Wellington.
- Wodzicki, K.; Kennedy, P.; Falconer, M. 1978. Waikanae River Estuary : Changes to habitat and bird fauna evident from surveys thirty years apart. NZ Zool. 5:551-579.
- Falconer, M.; Fleming, C.; Wodzicki, K. 1973. Birdlife at Waikanae Estuary 1969-1972 (Published for private circulation).
- Brunton, P.M. 1978. Toheroa Predation by Black-backed Gulls on Dargaville Beach, North Auckland, New Zealand. Notornis 25:128-140.
- Ingram, C.W.N. 1977. NZ Shipwrecks 1795-1975 5th Ed. 464pp. A.H. & A.W. Reed, Wellington.
- McDowall, R.M. 1978. New Zealand Freshwater Fishes; a Natural History and Guide. 2nd Ed. Heinemann Reed/MAF. Auckland and Wellington. 553pp.

Recorded on Existing Databases:

Comment:

- WERI - 50 entries of varying value, some national, surveyed between 1981 & 1985
- SSWI - 38 entries ranging through moderate to high, most sites surveyed August 1981
- PNA - Dated 1984, 4 sites : Waimeha Wildlife Reserve, Nikau, Papaitonga both Scenic Reserves and Government Purpose Reserve, McKay's Crossing
- Geopreservation - 1989 Hokio Beach dunefields (National). Te Horo post-glacial cliff, Waikanae abandoned sea cliff, Whareroa dunefield and dune-dammed swamp (all regional)
- HPT County Inventories - Over 150 Archaeological Sites (c) and two Historic Buildings Rangiatea Church (a) Jenkins Cottage (c), 1985
- Other
- None

Other Considerations:

Accompanying Maps
and Photographs:

Site Name/s: Kapiti Island

Site No: 09/0002

Recorders Name: Bruce Dix

Conservancy: Wellington

Map/Grid Ref: NZMS 260 R26 26710 60370

Date: 2 May 1990

Brief Description of Site: Kapiti is the larger of the two main islands (approximately 1,990ha) on Wellington's west coast and is famous as a Nature Reserve. It has a long association with the Maori as a stronghold, and from 1827 to the 1840's there were whaling stations here. The northern end is still in Maori ownership (approx. 230ha). The surrounding marine environment is diverse, with four habitat types occurring around the island, which are: Habitat Zone 1 with reefs of rounded boulders, strong tides, partly exposed. Habitat zone 2 with silt, sand and ground bottom, currents strong in channels, partly sheltered. Habitat zone 3 with narrow boulder-rock reefs and patches of sand, strong tides, sheltered. Habitat zone 4 with extensive boulder reefs, large rocky headlands, exposed, which are: Habitat Zone 1 with reefs of rounded boulders, strong tides, partly exposed (2).

Conservation Values:

Natural: a,b,c,e,f,g,h

Cultural: a,b,c,d,e

Historic: a,b,c,d

Comment:

Natural: Because of its reserve status, the natural values are acknowledged as outstanding due to vegetation representative of the region (7), and the rare bird species now resident there, for example; Little Spotted Kiwi (*Apteryx owenii*) which is endangered, and the North Island Saddleback (*Philesturnus carunculatus rufusater*) which is rare. There is a small Fur Seal (*Arctocephalus forsteri*) colony on the island's Northwestern end (5) and a breeding population of Northern Blue Penguin (*Eudyptes minor*) (PNA register). There are also some geological features of interest.

These are:

- Metamorphic Rocks at Motungarora Is. Tahoramaurea Is, L. Rangitira Pt.
- Sea Caves at Rangitira Pt.
- Beach Ridges at Northern end of island (1, Geopreservation Inventory).
- Okupe Lagoon, on the northern end, is ranked as regionally important in Wetlands of Ecological and Regional Importance register (WERI).

Cultural: Traditional use has diminished through difficulty of access to the island. Steep cliffs and bush clad slopes contribute to the aesthetic value of the island. The boulder bank on the northeast end is also a feature of interest. Kapiti also has spiritual values due to the long period of Maori occupation, & there are reportedly many waahi tapu and urupa here. Educational value is extremely high, both for natural values and history, and the island is visited by schools, scientists, and tour parties (4).

Historic: Kapiti Island was first declared a bird sanctuary in 1897. There are archaeological values of Maori and European origin such as pa and garden sites, and whaling stations. (Historic Places Trust (HPT)). Shipwreck sites also occur here, but are difficult, if not impossible to find (8).

Historically, land here was cleared by both Maori and Pakeha, and forest is still regenerating after many decades.

Site Importance:

International

National

Regional

Local

Unknown

Comment: Of international importance as a Nature Reserve, which is home to translocated species such as the endangered North Island Saddleback, and Little Spotted Kiwi. The endangered shrub *Hebe elliptica* var. *crassifolium* also occurs here (7).

Existing Threats: c,d,e,i,m

Type & Comment: Invasive exotic plants have established, disrupting natural communities. There are 141 exotic plant species on Kapiti, including boxthorn (*Lycium ferocissimum*) (7). Possums (*Trichosurus vulpecula*) have recently been eradicated, but Norway rats (*Rattus norvegicus*) and Kiore (*Rattus Exulans*) remain on the island, threatening ground nesting birds. Stringent control procedures are in place to prevent the establishment of ship rats (*Rattus rattus*) and mustelids (*Mustela* spp.) which have been successful to date. There have been instances of oil slicks landing here, presumably bilge pumpings from passing ships, oil slicks threat marine birds and mammals with fouling, and poisoning through ingestion. Continued netting and fishing pressure of all types have seriously depleted the marine environment. (2) Examples are Rock Lobster (*Jasus edwardsii*), Blue Moki (*Latridopsis ciliaris*), and other "popular" species. Plastic marine debris collects on the northern and western shores (5), detracting from aesthetic values and threatening marine birds and mammals with entanglement.

Human Modification and Human Use: a,h,i,j

Type & Comment: Water based recreation includes boating, fishing, diving and underwater photography. Land based recreation is mainly that of enjoying the natural beauty of bush, birdlife and sea views (3,4). Modifications include the Manager's house, picnic area and trig marker.

Existing Protection: a,g

Type & Comment: But for a small part on the north end, Kapiti Island is a reserve for the protection of nature. The reserve measures 1,970ha. A voluntary protection zone was established at the north-east end of Kapiti Island by members of Kapiti Boating Club in 1987. The voluntary protection zone is considered inadequate because of its small size, and lack of compliance. The reserve is well protected by sea, but rats are a problem to birds which nest close to the ground, eg. Saddleback, and Stitchbird (Notiomystis cincta).

Availability of Information:

Natural	①	2	3	1. Well documented
Cultural	1	②	3	2. Limited information (general)
Historic	1	②	3	3. Little information (if any)
Threats	①	2	3	
Human Mod. & Use	①	2	3	

Comment:

Sources of Information:

Natural	1	②	3	4	5	6	⑦	1. Derived info. from existing literature & databases
Cultural	①	2	3	4	5	6	7	2. Derived info. as above & field check
Historic	①	2	3	4	5	6	7	3. Derived from existing maps & aerial photographs
Threats	1	②	3	4	5	⑥	7	4. Recent DOC survey including sampling & analysis
Human Mod. & Use	①	2	3	4	5	6	7	5. Recent DOC survey excluding sampling & analysis
								6. Experience
								7. Expert opinion

Comment:

1. Turner, M. 1985. Geological features of the Wellington Region, Wellington Regional Council, Wellington. 72pp.
 2. Baxter, A.S. 1987. Kapiti Island : Subtidal Ecological Survey. Central Fishery Management Area Internal Report No. 87/2. MAF, Napier. 37pp.
 3. Baxter, A.S. 1987. Kapiti Island : Marine Recreational Survey. Central Fishery Management Area Internal Report No. 87/3. MAF, Napier. 17pp.
 4. M. Edgington, S.C.O. DOC, Wellington, (Pers. Comm.)
 5. P. Daniel, Kapiti Island Manager, DOC, (Pers Comm.)
 6. NZ Landform Inventory; First Approximation. 1989. Research School of Earth Sciences Occ. Paper No. 4. Victoria University of Wellington. 99pp.
 7. Fuller, S.A. 1985. Kapiti Island Vegetation. Report on a vegetation survey of Kapiti Island 1984-1985. Dept. of Lands and Survey.
 8. Ingram, C.W.N. 1977. NZ Shipwrecks 1795-1975. 5th Ed. 464 pp. A.H. & A.W. Reed, Wellington.
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Recorded on Existing Databases: Comment:

1. WERI - Okupe Lagoon - regional ranking (1985)
2. SSWI - Not listed
3. PNA - Declared bird sanctuary in 1897, now a Nature Reserve (1,970ha) (1984)
4. Geopreservation - Regional importance, 3 sites (1989)
5. HPT County Inventories - 30 Archaeological Sites, (1984)
6. Other
7. None

Other Considerations: Parts of the marine environment surrounding the island have recently been recommended as a marine reserve. This is entirely appropriate, given Kapiti's many values and diverse marine habitats.

Accompanying Maps
and Photographs:

Site Name/s: Coastal Escarpments

Site No: 09/0003

Recorders Name: Bruce Dix

Conservancy: Wellington

Map/Grid Ref: NZMS 260, R26, 26680 60180 and R27
26510 59955

Date: 2 May 1990

Brief Description of Site: The site covers from Paekakariki to Owhiro Bay and is interrupted by Porirua Harbour. It is approximately 115km long. This narrow coastal strip comprises escarpments and a shore platform, broken in places by old marine terraces. There are several seal haulouts, seabird colonies and the only mainland population of the threatened endemic Whitaker's skink (*Cyclodina whitakeri*) (6). These escarpments contain interesting and specialised plant communities. Some plants are endangered, for example *Cotula nana*, a button daisy, and the shrub *Hebe elliptica* var. *crassifolia*, and *Acaena pallida*, the giant biddibid is vulnerable (1). This region has been partly modified by farming and is therefore threatened by both introduced plants such as bone seed (*Chrysanthemoides monolifera*) and animals such as goats (*Capra hircus*). Although this area is intensively fished by professionals and amateurs alike, the marine environment is not well described scientifically.

Conservation Values:

Natural: a,b,c,d,e,f,g,h

Cultural: a,b,c,d,e,f

Historic: a,b,c,d,e,f

Comment:

Natural: The natural values do not spread along the entire escarpment, but exist in pockets where human modification has not occurred. There are, nonetheless, stretches of vegetation representative of this habitat type ie. steep, exposed coastal cliffs and scree slopes (1). There exist areas of geological and palaeontological interest, e.g. Titahi Bay, Rukutane Pt, Cape Terawhiti, Tongue Pt - all sites of regional importance, for Wellington greywackes, fossil forest and marine terraces. Of national importance is the fossil tube worm Type Location at Rock Point and the volcanic intrusives of Red Rocks Scientific Reserve (2), and the endangered *Cotula nana* and *Hebe elliptica* var. *crassifolia* at Whitireia. There are several winter haulouts for the NZ Fur Seal (*Arctocephalus forsteri*) (1).

Cultural: The sea has been used traditionally as a food source, while the cliff tops themselves were settled by the Maori, particularly at Cape Terawhiti and Oteranga Bay. These escarpments must have played a strategic role because of their commanding views across Cook Strait. The entire region is rife with legendary stories and early Maori History, and the great Maori navigator, Kupe, explored the region. The potential for education here is great, but hampered by difficulty of access (4). There is an urupa at Oteranga Bay (5). There are places here which feature in Maori mythology, eg. Red Rocks. It was here that Maui bloodied his nose to bait his hook when he caught Te-ika-a-Maui (The Fish of Maui, or the North Island).

Historical: Colonial Gold workings (2), sites of pre-European habitation eg. Pas, middens and many shipwrecks (7) abound on this coastal strip. Cape Terawhiti figures prominently in all of these values.

Site Importance:

International

National

Regional

Local

Unknown

Comment: Of national importance: Rock Point fossil location, Red Rocks Scientific Reserve (Geopreservation Inventory), the stamping batteries at Terawhiti Hill (2), *Cotula nana* at Whitireia, and Whitaker's skink at Pukerua Bay. Of regional importance: Petrified forest at Titahi Bay, Marine terraces at Tongue Point (Geopreservation Inventory) and the seal haulout sites (Sites of Special Wildlife Interest register).

Existing Threats: a,b,c,d,f,i,k

Type & Comment: Quarrying at Plimmerton and Owhiro Bay carries with it the problems of erosion, siltation and some water pollution. Severe water pollution occurs at Owhiro Bay, with the existence of a sewer nearby at Sirens Rocks. Fishing techniques and intensity are depleting stocks of certain species throughout the site, particularly poaching for paua (*Haliotis iris*) and rock lobster (*Jasus edwardsii*) (Pers. Obs.). Some recreational users have caused problems with fires during the summer, particularly at Pukerua Bay (4). Noxious or farmed animals are a problem in parts particularly near Pukerua Bay, where goats (*Capra hircus*) have caused severe erosion, (e.g. Beanpole Gully slip at time of writing). Indigenous plant communities are disturbed by invasive exotic plants, particularly near Titahi Bay (Pers. Obs.). Such plants include boxthorn (*Lycium ferocissimum*), bone seed (*Chrysanthemoides monolifera*), and gorse (*Ulex europaeus*). Certain points on the west coast seem to accumulate plastic debris (pers. obs.) which threaten aesthetic values and wildlife through ingestion or entanglement.

Human Modification and Human Use: a,e,h,i,j

Type & Comment: The land behind the cliffs is largely developed for farming, except for some small reserve areas. There is a sewer outfall at Rukutane Point, which discharges secondary treated effluent. Electrical cables from the South Island come ashore at Oteranga Bay and all fishing and anchoring is prohibited in the area. There is a walkway at Makara, but most of the recreational use is water based eg. snorkelling, SCUBA diving, boat fishing. The area was fished extensively by Maori for traditional use, but current use is not well known.

Existing Protection: a,b,c,i

Type & Comment: The coastal strip is relatively well protected with two Scientific Reserves (Sinclair Head (0.62ha), Red Rocks (0.52ha)), a Wildlife Refuge (Wairaka Point), Recreational Reserves (Sinclair Head, Whitireia, Titahi Bay, Pukerua Bay) and paper roads (one restricted access, the other unconstructed). There is also a large strip of the West Coast designated as 'Open Space'. Reserves at Red Rocks and Sinclair Head are not adequately protected against vandalism.

Availability of Information:

Natural	1	2	3	
Cultural	1	2	3	
Historic	1	2	3	
Threats	1	2	3	
Human Mod. & Use	1	2	3	

1. Well documented
2. Limited information (general)
3. Little information (if any)

Comment: The reasons for little information are probably the same as for its relatively unspoilt nature - low human use.

Sources of Information:

Natural	1	2	3	4	5	6	7	
Cultural	1	2	3	4	5	6	7	
Historic	1	2	3	4	5	6	7	
Threats	1	2	3	4	5	6	7	
Human Mod. & Use	1	2	3	4	5	6	7	

1. Derived info. from existing literature & databases
2. Derived info. as above & field check
3. Derived from existing maps & aerial photographs
4. Recent DOC survey including sampling & analysis
5. Recent DOC survey excluding sampling & analysis
6. Experience
7. Expert opinion

Comment:

Sources:

1. Anon. 1984. Biological resources of the Wellington region - Wellington Regional Council, QEII Trust and NZ Biological Resources Centre
 2. Turner, M. 1985. Geological Features of the Wellington Region - Wellington Regional Council, Wellington. 27pp.
 3. Wassilief, M.C.; Clark, D.J.; Gabites, I. 1986. Scenic Reserves of the Lower North Island and Survey, Wellington. 297pp. Biological Survey of Reserves Series No. 14. Department Lands.
 4. B. Dix, S.C.O. DOC, Wellington, (Pers. Obs.).
 5. HVDC Transmission System Expansion. Proposed Hybrid Development Vol. 1 July 1990. Prepared for Transpower by Murray-North Ltd.
 6. D. Towns, Scientist, S&R, DOC (Pers. Comm.).
 7. Ingram, W.N. 1977. Shipwrecks 1795-1975. 5th Ed. A.H. & A.W. Reed, Wellington. 464pp.
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Recorded on Existing Databases: Comment: No information on the marine environment has been found.

1. WERI - One Entry (Makara 10ha) Local significance (1982)
2. SSWI - Twelve sites, ranging from "Potential" to "Outstanding" (1982)
3. PNA - Two sites, Sinclair Head Scientific Reserve (0.62ha) and Red Rocks Scientific Reserve (0.52ha)
4. Geopreservation - Six entries, two of national importance (Rock Point and Red Rocks) others of regional importance (1989)
5. HPT County Inventories - 67 sites - Nov 1984, Classified B-C.

Other Considerations: The area should be surveyed subtidally due to lack of information and because of its proximity to heavily populated areas.

Accompanying Maps
and Photographs:

Site Name/s: Pukerua Bay/Wairaka Point

Site No: 09/0004

Recorders Name: Bruce Dix

Conservancy: Wellington

Map/Grid Ref: NZMS 260, R26 26685 60180

Date: 4 May 1990

Brief Description of Site: Part of the coastal cliff system extending 70km from Paekakariki along Wellington's west and south coasts to Owhiro Bay, this 0.5km site is close to Pukerua Bay township, yet the presence of an urban area does not affect wildlife values here. There are also geological points of interest such as aeolian sand and loess deposits at State Highway 1 road cutting, and the raised shore platform (2). This is a site of considerable beauty with coastal forest, cliff and shingle beach vegetation which the local people have kept intact, and is the only mainland site for the threatened Whitaker's skink Cyclodina whitakeri (3). The site is approximately 150ha in area.

Conservation Values:

Natural: a,b,c,e,f,h

Cultural: a,b,c,e

Historic: c

Comment:

Natural: Plant communities representative of coastal cliffs and shingle beaches occur in the region, one of four nesting sites of threatened Reef Heron (Egretta sacra) also occurs here. Several plant species are worthy of note eg. Acaena sp. (cf. A. minor), Schoenus concinnus, Pelargonium inodorum, Peilaea sp., Blechnum capense (Green Bay form), Cheilanthes distans, and Doodia media (6). Aeolian sand deposits and periglacial loess deposits are exposed at a nearby road cutting (SH1) and are good examples of features formed by periglacial climate conditions (2). Several endemic lizard species are present in reasonable numbers, (1) in particular the threatened Whitaker's skink. This being the only mainland site for this species (3).

Cultural: This is one of the few sites where such representative vegetation is readily accessible for enjoyment and study (pers. obs.). The coastal cliffs are most spectacular, affording sea views of Kapiti Island, and the South Island. The site is used by school parties, especially from Kapiti Coast, Horowhenua and Manawatu for nature study (pers. obs.). The site is still used by Maori for gathering seafood, although Europeans and Pacific Islanders also gather seafood here.

Historical: A coastal karaka grove infers that there was once a Maori plantation here. Hut and pit sites are listed on the County Inventory Historic Places Trust.

Site Importance:

International

National

Regional

Local

Unknown

Comment: The site is of National importance due to the presence of Whitaker's skink and the consequent Sites of Special Wildlife Interest register's ranking of "Outstanding" in 1982.

Existing Threats: c,d,i,k,m

Type & Comment: Indigenous coastal plant communities are threatened by adventives eg. boneseed (Chrysanthemoides monolifera). Some parts are grazed by stock from nearby farmland. Goats (Capra hircus) gain entry to the site from the escarpment to the south, and require control (4). Butterfish (Odox pullus) and Moki (Latridopsis ciliaris) are extensively fished nearby by gillnet and snorkelling and handgathering for pawa (Halotis iris) also occurs. Marine resources are now depleted according to anecdotal evidence from concerned locals (pers. obs.). Recreational visitors may disturb Reef Heron nest sites, and damage from an uncontrolled picnic fire occurred over summer at 1989/90, killing vegetation and wildlife. A recent cleanup of plastics was undertaken from beaches here, but this problem is expected to recur, as the beach here accumulates drift material.

Human Modification and Human Use: a, h, i, j

Type & Comment: The site is modified by housing, but this is well established and does not appear to be spreading into areas of natural value. Shoreland uses include picnicking and walking (a popular walk is along the shore platform to Plimmerton). Fossicking appears popular. There is some recreational diving and fishing, but usually from boats launched here (pers. obs.). Some traditional (Maori) seafood gathering still occurs at this site, but Pacific Islanders use the site more today.

Existing Protection: a

Type & Comment: There is a Recreation Reserve (6.68ha) and a Wildlife Refuge (12.3ha) for lizards on this site.

Availability of Information:

Natural	①	2	3	
Cultural	①	2	3	
Historic	1	②	3	
Threats	1	②	3	
Human Mod. & Use	①	2	3	

1. Well documented
2. Limited information (general)
3. Little information (if any)

Comment:

Sources of Information:

Natural	①	2	3	4	5	⑥	⑦	
Cultural	1	2	3	4	5	⑥	7	
Historic	①	2	3	4	5	6	7	
Threats	1	2	3	4	5	⑥	7	
Human Mod. & Use	①	2	3	4	5	⑥	7	

1. Derived info. from existing literature & databases
2. Derived info. as above & field check
3. Derived from existing maps & aerial photographs
4. Recent DOC survey including sampling & analysis
5. Recent DOC survey excluding sampling & analysis
6. Experience
7. Expert opinion

Comment: Several recent sources used in these two publications:

1. Anon. 1984. Biological Resources of the Wellington Region. Wellington Regional Council, QEII Trust, and NZ Biological Resources Centre, Wellington. 27pp.
2. Turner, M. 1985. Geological features of the Wellington Region. Wellington Regional Council, Wellington. 72pp.
3. D. Towns, Scientist, S&R, DOC (Pers. Comm.)
4. P. Brady, SCO, DOC, Wellington, (Pers. Comm.)
5. B. Dix, SCO, DOC Wellington (Pers. Obs.)
6. Ogle, C.C. 1985. Known Distribution of Threatened Indigenous Plants of the Wellington Region. Unpb. Report (revised 1988).

Recorded on Existing Databases:

Comment:

1. WERI
2. SSWI - Outstanding value 1981/82 (Pukerua Bay No. 24/15/2).
3. PNA - No listings - 1984
4. Geopreservation - No sites listed (1989)
5. HPI County Inventories - 5 listings (1984) rated B-C
6. Other
7. None

Other Considerations: The Pukerua Bay Resident's Association is considering the promotion of a Marine Reserve here because of:

- (a) Scenery/natural values complementary to a marine reserve (land/sea continuum)
- (b) Educational use
- (c) Effects of overfishing

Accompanying Maps
and Photographs:

Site Name/s: Plimmerton

Site No: 09/0005

Recorders Name: Bruce Dix

Conservancy: Wellington

Map/Grid Ref: NZMS 260 R26 26660 60132

Date: 30 April 1990

Brief Description of Site: This coastal village is situated north of the Porirua Harbour entrance and overlooks Mana Island. It is notable for its coastal forest remnants, some of which are in residential areas, and a wetland remnant, known as Taupo Swamp. Adjoining land use includes farming and aggregate quarrying. The area of wetland is slightly greater than 50ha, and the area of forest is estimated to be slightly less than 50ha. Neither habitat types are continuous, ie. they are bisected by roading and urban development. The beaches are dominated by the raised shore platform of Wellington Greywackes, exposed by tectonic uplift. The site has approximately 5km of coastline.

Conservation Values:

Natural: a,b,d,f

Cultural: a,c,e

Historic: b

Comment: The nature forest is dominated by tawa (*Beilschmedia tawa* and kohekohe (*Dysoxylum spectabile*) with Kaikomako (*Pennantia corvimbosa*) on the margins. Karaka (*Corynocarpus laevigatus*) is also common in the forest remnants. The milk tree (*Streblus heterophylla*) also occurs here but is not common. There are not large numbers of native birds here, but kakariki (*Cyamoramphus auriceps*), Long-tailed Cuckoo (*Eudynamis taitensis*), Keruru (*Hemiphaga novaeseelandiae*) and Shining Cuckoo (*Chrysococcyx lucidus*) visit periodically (pers. obs.). The remainder of the forest is regenerating under manuka (*Leptospermum scoparium*) and kanuka (*Kunzea ericoides*) (pers. obs.), and contains the Wellington Green Gecko (*Naultinus elegans punctatus*) (1). Also of note is Taupo Swamp, the remnant of the once extensive wetland which existed here. The threatened giant kokopu (*Galaxius argenteus*) (1), and spotless crane (*Tabuensis porzana*) (3) inhabit the wetland. The forest and wetland remnants are important as part of a "wildlife corridor" and have a buffering effect upon the catchment (1). However, they are sensitive to the changes induced by urbanization and farming, such as fragmentation, and increased runoff (pers. obs.).

The area has long been settled by Maori, but was not settled by Pakeha until very late last century, and then as merely a seaside holiday destination. This area has scenic values in its steep, bush-covered slopes, and views of Mana Island and the South Island. School parties use this site extensively for natural history studies, particularly the raised shore platform for the study of intertidal ecology (pers. obs.). Hongoeka Bay is still owned and settled by Maori (Pers. obs.).

The Historic Places Trust (HPT) lists eight archaeological sites (not in the immediate area), but there were several pa sites here before, and during Colonial times. There is a plaque in Motuhara Road, commemorating the capture of Te Rauparaha at Taupo Pa on 23rd July, 1846 (HPT).

Site Importance:

International

National

Regional

Local

Unknown

Comment: This site is recognised as being of regional importance because of the remnant coastal forest and wetlands (2,4). The wetland is believed to be of national importance because it is the habitat of the threatened endemic Giant Kokopu (6).

Existing Threats: a,b,c,d,e,i,k

Type & Comment: Stock grazing, feral animals eg. Possums (*Trichosurus vulpecula*) and exotic plants eg. Boneseed (*Chrysanthemoides monolifera*) are common problems here because they damage native plant communities, but public awareness appears to be helping, ie. many locals actively trap and shoot possums (2). There is fire risk in summer from picnickers. Intensive recreational gill netting has reduced numbers of reef fish in the area, notably butterfish (*Odex pullus*) (pers. obs.). There is some aggregate quarrying between Plimmerton and Pukerua Bay, which increases sediment in the water, to the detriment of filter-feeders, and affects aesthetic values (pers. obs.). Some of the beaches are eroding (5), and the South Beach becomes hazardous to bathers periodically, due to organic pollution from Taupo Swamp, especially after long dry spells (pers. obs.). Some housing now appears to be encroaching on forest areas (pers. obs.).

Human Modification and Human Use: a,h,i,j

Type & Comment: Land development has occurred, for farming and housing. Shorebased recreation includes walking, swimming, surfing, fishing, diving, jet skiing.

Waterbased recreation includes yachting, fishing, scuba and skindiving.

Some traditional seafood gathering occurs here, by Maori, and Pacific Islanders are now using the site also (pers. obs.).

Existing Protection: a,c,f,g

Type & Comment: Some of the coastal forest is protected by Porirua City Council recreation reserve. Protection is inadequate against possums, which have prevented regeneration of the understorey (pers. obs.) Taupo Swamp (40ha) is protected by the QEII Trust Act, but cannot be protected against land runoff. There is some voluntary protection of native forest by concerned landowners. Maori land at Hongoeka Bay is not developed, and it is the site of a good stand (25ha) of regenerating bush (pers. obs.).

Availability of Information:

Natural	①	2	3	
Cultural	①	2	3	
Historic	①	2	3	
Threats	1	②	3	
Human Mod. & Use	①	2	3	

1. Well documented
 2. Limited information (general)
 3. Little information (if any)

Comment:

Sources of Information:

Natural	①	②	3	4	5	⑥	⑦	
Cultural	①	2	3	4	5	⑥	7	
Historic	①	2	3	4	5	6	7	
Threats	1	②	3	4	5	⑥	7	
Human Mod. & Use	1	②	3	4	5	⑥	7	

1. Derived info. from existing literature & databases
 2. Derived info. as above & field check
 3. Derived from existing maps & aerial photographs
 4. Recent DOC survey including sampling & analysis
 5. Recent DOC survey excluding sampling & analysis
 6. Experience
 7. Expert opinion

Comment:

1. Anon. 1984. "Biological Resources of the Wellington Region" Wellington Regional Council, QEII Trust and NZ Biological Resources Centre.
2. B. Dix, SCO DOC, Wellington (pers. obs.).
3. T. Porteous, QEII Trust, (pers. comm.).
4. H.A. Robertson, Advisory Scientist, DOC, Wellington (pers. comm.).
5. Dr J.G. Gibb, S & R DOC, Wellington (pers. comm.).
6. McDowall, R.M. 1978. New Zealand Freshwater Fishes - A Natural History and Guide. 2nd Ed. Heinemann Reed/MAF, Auckland/Wellington. 553pp.

Recorded on Existing Databases:

Comment:

1. WERI - Taupo Swamp National importance (1986)
 2. SSWI - Airlie Road Scrub potential value (1982)
 3. PNA - no entries (1984)
 4. Geopreservation - No sites recorded (1989)
 5. HPT County Inventories - 8 sites on escarpment between Pukerua Bay and Plimmerton (ranked C) and Memorial Plaque at Taupo Swamp (Motuhara Road)
 6. Other
 7. None
-

Other Considerations: More protection is needed for the forest and wetland remnants.

Accompanying Maps
and Photographs:

Site Name/s: Pauatahanui Inlet	Site No: 09/0006
Recorders Name: Bruce Dix	Conservancy: Wellington
Map/Grid Ref: NZMS 260 R26 26690 60100	Date: 30 April 1990

Brief Description of Site: The inlet is part of Porirua Harbour, a drowned river valley system (2). Most of the harbour is heavily modified, as is the catchment, which has been clear-felled for timber and pastoral farming. The inlet and its surroundings are of particular interest to geologists for its reasonably complete sequences of deposits laid down in the late Quaternary (last 15,000 years) (2,3). The saltmarsh at the eastern end is protected by a network of reserves. The remainder of Porirua Harbour suffers from rubbish accumulation and industrial pollution, which limits its natural values and aesthetic appeal (pers. obs.). The inlet has approximately 10km of coastline, and the site measures approximately 400ha.

Conservation Values: Natural: a,b,c,d,e,f,g,h Cultural: a,b,c,d,e Historic: a,b,c,e,f

Comment The eastern extremity of the inlet is saltmarsh, which remains in a very natural state. The nearest estuary of this type (ie. drowned river valley) on the North Island's west coast is at Kawhia, in the Waikato. It is a known fish breeding and nursery area, and its organic productivity is of international scientific interest (7,10,11). The streams and marshland are frequented by waders such as the White-faced Heron (*Ardea novaehollandiae*) and the rare Variable Oystercatcher (*Haematopus unicolor*), and waterfowl such as Grey Duck (*Anas superciliosa*). The streams contain several galaxiid species (*Galaxius maculatus*, *G. argenteus* (threatened), and *G. postvectis* (indeterminate). These are also known as [postrectis Inanga], Giant kokopu, and Short-Jawed Kokopu, respectively (1,12). Also present are freshwater shrimps (*Paratya curvirostris*) upon which certain waters feed (9). However, very few birds are noted in breeding or moulting plumage, or over-wintering here (Sites of Special Wildlife register) and this site may have restricted appeal to many bird species because of a lack of suitable roosting sites (H. Robertson, pers. comm.).

There are several beach terraces at the north eastern end, containing an almost complete record of deposition and sea level fluctuations during the late Quaternary (2,3). The site is very sensitive to human-induced change and can be considered a fragile ecosystem (2,4).

Limited Maori shellfish-gathering still occurs here, and as a site of former Maori occupation, it is probable that the area is of spiritual significance to Maori (2). The Wildlife Reserve is of considerable educational value for school visits, and university studies (pers. obs.). Such studies are generally centred upon the ecology and recreational pursuits in the inlet (pers. obs.).

The area is important as a site of early Maori occupation, food cultivation, food gathering and battles. The latter were fought over the possession of this productive area. There are pluggen (man modified) soils near Ration Point, for the purpose of kumara cultivation and several midden sites. There is a Moa hunter site near Ngati Toa Domain (8), and an old Barracks in the Domain itself (8, Historic Places Trust inventory).

Many activities occurred here in colonial times; sawmilling, goldmining, whaling and later, farming (2). There are several historic buildings in the district, for example the two churches at Pauatahanui (HPT). The military had a great presence here during these times, due to the area's strategic importance (it was on both the main route overland to Wellington and the sea route to the South Island). Te Rauparaha was very active in the region when he led the Ngati Toa against the Ngati Ira, eventually displacing them (2). During World War II there was an American Army camp at Pauatahanui (4).

Site Importance: International National Regional Local Unknown

Comment: Although the site is considered to be of international scientific interest (7), it is not considered to be of international importance, as it doesn't satisfy IUCN (International Union for the Conservation of Nature) criteria (H Robertson, pers. comm.). However, due to the presence of the threatened Giant Kokopu (12) and its ranking on the SSWI and WERI (Wetlands of Ecological and Representative Importance) registers, the site is believed to be of national importance.

Existing Threats: a,b,c,e,j,k,l,m

Type & Comment: Coastal subdivision carries with it the threat of siltation. This has already occurred during the Whitby development of 1974-76 and could happen again.(2) There have been several cases of effluent from pig farm oxidation ponds entering the Pauatahanui Stream, killing all aquatic life downstream (pers. obs.). Plastic pollution and household refuse dumping detract from natural and aesthetic values in the reserve (pers. obs.) (4). Some forms of recreation (e.g. water skiing) threaten natural processes eg. primary production, and will need to be relocated (7,10). Nearby road works have unintentionally damaged some archaeological and geological values (pers. obs.). Some flooding occurs periodically. Invasive plants such as gorse (*Ulex europaeus*) have established in the wetlands, threatening indigenous plant communities (pers. obs.).

Human Modification and Human Use: a,d,h,i,j

Type & Comment: The surrounding land has been clear felled and is now farmed. There are, however, isolated pockets of forest (1,2). The western end of the inlet has many boatsheds, wharves and moorings for small boats. The main recreational pursuits are sailing, wind surfing and water skiing. There is also birdwatching (at the reserve) and whitebaiting in the streams. There is some traditional (Maori) cockle gathering. There is little modification of the estuary proper, though there is a road bisecting the saltmarsh at the eastern end (pers. obs.).

Existing Protection: a,c,i

Type & Comment: Strong Maori and recreational fishing representations to MAF are restricting set netting in the estuary, because of the importance of this estuary to the fishery. The eastern end of the estuary is listed as a Wildlife Refuge (165ha), and the saltmarsh is a Wildlife Management Reserve (43ha). An adjacent area is Horokiri Wildlife Management Reserve and measures 3ha. The latter two are currently administed by DOC and The Royal Forest and Bird Protection Society. There is also a Scenic Reserve at Duck Creek (1ha) and a Recreation Reserve at Ngati Toa Domain.

The level of protection is considered adequate for wildlife, but other natural values are dependant upon human activity outside protected areas (pers. obs.).

Availability of Information:

Natural	①	2	3	
Cultural	①	2	3	
Historic	①	2	3	
Threats	①	2	3	
Human Mod. & Use	①	2	3	

1. Well documented
 2. Limited information (general)
 3. Little information (if any)

Sources of Information, etc ...

Comment:

Sources of Information:

Natural	①	②	3	4	5	⑥	⑦	
Cultural	①	②	3	4	5	⑥	⑦	
Historic	①	②	3	4	5	⑥	⑦	
Threats	①	②	3	4	5	⑥	⑦	
Human Mod. & Use	①	②	3	4	5	⑥	⑦	

1. Derived info. from existing literature & databases
 2. Derived info. as above & field check
 3. Derived from existing maps & aerial photographs
 4. Recent DOC survey including sampling & analysis
 5. Recent DOC survey excluding sampling & analysis
 6. Experience
 7. Expert opinion

Comment:

Sources of Information, etc ...

1. Anon. 1984. Biological Resources of the Wellington Region. Wellington Regional Council, QEII Trust and all NZ Biological Resources Centre, Wellington. 27pp.
 2. Healy, W.B. 1980. Pauatahanui Inlet - an Environmental Study. DSIR Info. Series 141
 3. Turner, M. 1985. Geological features of the Wellington Region. Wellington Regional Council, Wellington. 72pp.
 4. B. Dix, SCO Wellington. (pers. obs.)
 5. H A Robertson, Advisory Scientist, Wellington, (pers. comm.)
 6. McFadgen, B.G., 1980. Age Relationship between a Maori Plaggen Soil & Moa Hunter Sites on the Wellington West Coast". NZ J. Geol. Geophys. 23(2):249-256.
 7. Hicks, G.R.F., 1986. Estuaries: Extraordinary Ecosystems. Forest & Bird 17(3):14-15.
 8. B.G. McFadgen, Archaeologist DOC, (pers. comm.).
 9. Ch'ng, T.K. (Date unrecorded). Aspects of the Biology of the NZ freshwater shrimp (Paratya curvirostris) in the Horokiwi Stream. Unpubl. BSc (Hons) project), Victoria University, Wellington.
 10. Hicks, G.R.F. 1985. Biomass and Production estimates for an Estuarine Meiobenthic Copepod, with an Instantaneous Assessment of Exploitation by Flatfish Predators. NZ J. Ecology 8:125-127.
 11. Jones, J.B. & Hadfield, J.D. 1985. Fishes from Porirua and Pauatahanui Inlets: Occurance in Gill Nets. NZ J. Marine and Freshwater Research 19:477:484.
 12. McDowall, R.M. 1978. New Zealand Freshwater Fishes, A Natural History and Guide. 2nd Ed. Heinemann Reed/MAF. Auckland and Wellington. 553 pp.
-

Recorded on Existing Databases:

Comment:

1. WERI - National & Regional status (1981)
2. SSWI - Pauatahanui Inlet Mod-high (1980-82)
3. PNA - 3 sites, (1984); Duck Creek SR, (1ha); Pauatahanui Inlet WR, (165ha); Pauatahanui Inlet WMR, (43ha).
4. Geopreservation - no sites listed (1989)
5. HPT County Inventories - 67+ Maori sites ranked "C", 2 churches, 2 buildings ranked "B-C" (1984)
6. Other
7. None

Other Considerations: Given the uniqueness of Pauatahanui Inlet, its importance to the marine food web and its importance as a marine ecosystem, the Royal Forest and Bird Protection Society are currently working on a proposal to establish a marine reserve.

Accompanying Maps
and Photographs:

Site Name/s: Whitireia Peninsula - Rukutane Point Site No: 09/0007

Recorders Name: Bruce Dix Conservancy: Wellington

Map/Grid Ref: NZMS 260 R27 26640 598095 Date: 5 May 1990

Brief Description of Site: Close to Porirua on Wellington's rugged west coast, this length of coast is undergoing a resurgence of popularity due to rapidly improving water quality, i.e. a nearby sewer outlet now discharges secondary treated effluent. The sandy beach and rocky shore share increasing recreational use. There are high natural values, and the local Council is firmly committed to enhancing these natural values. The site is approximately 9km in length, and the predominant adjoining landuse is for housing, boatsheds, and parks.

Conservation Values: Natural: a,b,e,f,g,i Cultural: a,b,c,d Historic: b

Comment:

Natural: The site contains representative cliff vegetation of the region, with two endemic and endangered plant species, ie. *Hebe elliptica* var. *crassifolia* and a button daisy (*Leptinella nana* (1,4). Well developed fold structures are evident in the cliffs, consisting of Titahi Bay interbedded greywacke sandstone and argillite (2). An interglacial fossil forest exists under south Titahi Bay beach(2). A scenic rugged and natural landscape, and scientific attractions eg, the endangered plants and fossil forest are important here (pers obs).

Cultural: This site was formerly heavily populated by Maori, (HPT Inventory) and Kupe was reputedly very active here during his explorations of the region. Rukutane Point is said to have been a landing site of Kupe. The area is notable for rugged cliffs and rock formations, stunning views of Cook Strait, Mana and Kapiti Islands, and the Marlborough Sounds (pers obs). The site has spiritual values because of an old pa site (Kaitawa) and its association with Kupe, the navigator.

Historic: More than 15 archaeological sites are recorded here, including pa sites, terraces, middens, and pits (Historic Places Trust counties inventory, 1984).

Site Importance: International National Regional Local Unknown

Comment: Titahi Bay fossil forest is classified as being of Regional significance (Geopreservation Inventory). The site is ranked as being of international importance due to the occurrence here of two endangered endemic plants.

Existing Threats: a,b,c,e,i,j,k

Type & Comment: The unsealed maintenance road to Rukutane Point suffers runoff, and siltation subsequently occurs, which is exacerbated by trail bikes and spoil dumping (3). There is also some refuse and car dumping (3). Many invasive exotic plants such as gorse (*Ulex europaeus*) occur, particularly at the cliff top, and boxthorn (*Lycium ferocissimum*) at Titahi Bay beach (pers obs). Pollution from the sewer still occurs; secondary treatment doesn't remove all nutrients and pathogens. The site was extensively gillnetted and some pawa poaching occurs (3). Vandalism to facilities and natural features, and vehicles on the beach detract from natural values (1,3). The site has suffered some sand loss due to erosion (3).

Human Modification and Human Use: a,e,g(?) h,i

Type & Comment: Boatsheds and toilet facilities have been built above the beach and much water based recreation occurs here, eg. surfing, swimming, diving and canoeing. Land based recreation includes rock climbing and model aeroplanes (on calm days), barbecues and fishing. A sewer outlet nearby at Rukutane Point discharges secondary-treated effluent. Much of the area has been developed for housing, ie. the Porirua suburb of Titahi Bay. Beach replenishment is being considered to counter the loss of sand from Titahi Bay beach (3).

Existing Protection: c

Type & Comment: A Local Council Reserve (Stuart Park, approximately 20ha) and Whitireia Park Domain (Recreation Reserve, 255ha). The level of protection is inadequate against plant collection, and trampling (4).

Availability of Information:

Natural	1	2	3
Cultural	1	2	3
Historic	1	2	3
Threats	1	2	3
Human Mod. & Use	1	2	3

1. Well documented
2. Limited information (general)
3. Little information (if any)

Comment:

Sources of Information:

Natural	1	2	3	4	5	6	7
Cultural	1	2	3	4	5	6	7
Historic	1	2	3	4	5	6	7
Threats	1	2	3	4	5	6	7
Human Mod. & Use	1	2	3	4	5	6	7

1. Derived info. from existing literature & databases
2. Derived info. as above & field check
3. Derived from existing maps & aerial photographs
4. Recent DOC survey including sampling & analysis
5. Recent DOC survey excluding sampling & analysis
6. Experience
7. Expert opinion

Comment:

1. Anon. 1984. Biological resources of the Wellington Region. Wellington Regional Council, QEII Trust and NZ Biological Resources Centre, Wellington. 2pp.
2. Turner, M. 1985. Geological features of the Wellington Region. Wellington Regional Council, Wellington. 72pp.
3. B Dix, SCO DOC, Wellington, (pers. obs.).
4. R.A. Empson, SCO, DOC Wellington (pers. comm.).

Recorded on Existing Databases:

Comment:

1. WERI - no sites listed
2. SSWI - no sites listed
3. PNA - no sites listed
4. Geopreservation - Fossil forest listed as of regional value (1989).
5. HPT County Inventories - 15+ sites listed, all category "B" (1984)
6. Other
7. None

Other Considerations: The site has great potential for a large Recreation Reserve, providing sensitive areas are fenced, ie. the endangered plant communities, and steep, slip-prone slopes. Beach replenishment is suggested because of sand loss.

Accompanying Maps
and Photographs:

Site Name/s: Mana Island

Site No: 09/0008

Recorders Name: Bruce Dix

Conservancy: Wellington

Map/Grid Ref: NZMS 260 R26 26595 60117

Date: 2 May 1990

Brief Description of Site: Mana Island (217ha) is the smaller of the two main islands (Kapiti and Mana) on Wellington's west coast. The original, longer Maori name is "Te Mana o Kupe Ki Aotearoa" which translates as "The ability of Kupe to cross the ocean to Aotearoa". Captain Cook simply named it 'Table Island' because of its flat topped appearance (1). Although currently not as rich in natural values as its neighbour, Kapiti, because of modification by farming, Mana possesses the unique geological formation known as "the Bridge", a submarine isthmus connecting Mana to the mainland (9, pers. obs.). Mana has strong historical values. Mana is no longer farmed, but is a Scientific Reserve administered by the Department of Conservation, which is currently coordinating an ecological restoration project. The island has approximately 6km of coastline.

Conservation Values:

Natural: b,c,e,g

Cultural: b,c,d,e

Historic: a,b,c,d,e

Comment:

Natural: Mana contains the rare MacGregors Skink (*Cylodina macgregori*), Giant Weta (*Deinacrida rugosa*) and several rare plants including Cook Strait 'Scurvy Grass' *Lepidium oleraceum* (1,3). It is a nesting area for the Blue Penguin (*Evodyptula minor variabilis*) (7). Mana has been well researched because of its rare inhabitants and is of considerable value to conservation now that it appears to be rodent-free. There is also the submerged isthmus (known as the "Bridge") which connects the island to the mainland, and appears to be unique (9, pers. obs.). Mana owes its flattened appearance to being a peneplain remnant.(4)

Cultural: Although largely deforested, Mana has aesthetic values and is a pleasant part of local sea views. It has spiritual value to the Maori, due to the association with Kupe, the navigator. School parties and youth groups visit here to assist with the ecological restoration and as such, Mana is of great benefit to conservation education.

Historical: Mana was New Zealand's first commercial sheep station, having been largely cleared during the pre-European period, and still has old structures and sites (1). Whaling and trading were also conducted from here (1). There have been at least two shipwrecks here (8) and an old lighthouse. The site was settled by Maori, although it wasn't as important as Kapiti. The Island ended its days as a sheep station with an outbreak of suspected scrapie in 1978 (1). An archaeological dig was conducted here recently, resulting in several notable finds including evidence of extensive forest cover, and many wildlife species' remains in a midden (7). A report is yet to be produced.

Site Importance:

International

National

Regional

Local

Unknown

Comment: Although not as dramatic as Kapiti, Mana's value will increase with ecological restoration. The marine environment has not been properly evaluated, although the area is popular with recreational and commercial fishers. Mana is ranked as "Outstanding value" in Sites of Special Wildlife Interest register - therefore considered to be of National importance due to the presence of the threatened endemic McGregor's skink.

Existing Threats: c,d,i,k,m

Type & Comment: There is a problem here with boxthorn (*Lycium ferocissimum*), and to a lesser extent, other exotic plants. The Island is free of introduced mammals, as all farm animals have been removed and it is thought that mice (*Mus musculus*) have been eradicated recently. Continued heavy set netting and other fishing has depleted marine life in the area (5). Recreational visitors may yet introduce undesirable animals or destroy habitats. Plastic pollution in the form of marine debris is a constant problem (6).

Human Modification and Human Use: a,d,h,i

Type & Comment: The land had been cleared for farming, but is currently undergoing ecological restoration in the form of replanting. There is a mooring at the southwest end near the wharf for pleasure craft, particularly those sheltering from storms. The wharf may soon be removed to discourage landing and possible introduction of mammals. Recreational uses include boating, fishing, diving and walking. Little is known of traditional Maori fishing currently practised around Mana.

Existing Protection: a

Type & Comment: Mana Island (217ha) is a Scientific Reserve, administered by DOC. (Landing permission is not required, provided it is near the jetty).

Availability of Information:

Natural	①	2	3
Cultural	①	2	3
Historic	①	2	3
Threats	①	2	3
Human Mod. & Use	①	2	3

1. Well documented
2. Limited information (general)
3. Little information (if any)

Comment:

Sources of Information:

Natural	①	②	3	4	5	⑥	⑦
Cultural	①	2	3	4	5	⑥	7
Historic	①	②	3	4	5	6	⑦
Threats	①	2	3	4	5	⑥	⑦
Human Mod. & Use	①	②	3	4	5	⑥	⑦

1. Derived info. from existing literature & databases
2. Derived info. as above & field check
3. Derived from existing maps & aerial photographs
4. Recent DOC survey including sampling & analysis
5. Recent DOC survey excluding sampling & analysis
6. Experience
7. Expert opinion

Comment:

Sources:

1. Anon. 1986. Mana Island Management Plan. Dept. of Lands and Survey, Management Plan Series No. CL63.
2. Healy, W.B. 1980. Pauatahanui Inlet - an environmental study. DSIR Info. Series 141.
3. Anon. 1984. Biological Resources of the Wellington Region. Wellington Regional Council, QEII Trust and NZ Biological Resources Centre.
4. Turner, M. 1985. Geological Features of the Wellington Region. Wellington Regional Council, Wellington. 72pp.
5. B. Dix, SCO, DOC Wellington, (pers. comm.).
6. T. Hook, Mana Island Manager, (pers. comm.).
7. R.A. Empson, SCO, DOC Wellington, (pers. comm.).
8. Ingram, C.W.N. 1977. NZ Shipwrecks 1795-1975 5th Ed. 464pp. A.H. & A.W. Reed, Wellington.
9. Grange, K.R. and Luckens, P.A. 1988. The Marine Environment under the Jurisdiction of the Porirua Harbour Authority. Report produced for Porirua Harbour Authority by NZOI, DSIR.

Recorded on Existing Databases:

Comment:

1. WERI - No listings
2. SSWI - Mana Island; Outstanding value (1982)
3. PNA - None, (1984)
4. Geopreservation - Landform inventory, local importance (1989)
5. HPT County Inventories - 12 Archaeological sites, including middens, pits, terraces and garden soils (category C) (1984)
6. Other
7. None

Other Considerations: This site could have possibilities as a Marine Reserve. However, the subtidal region would need to be thoroughly surveyed first.

Accompanying Maps and Photographs:

Site Name/s: Rock Point

Site No: 09/0009

Recorders Name: Bruce Dix

Conservancy: Wellington

Map/Grid Ref: NZMS 260 R27 26462 59070

Date: 5 May 1990

Brief Description of Site: Situated on Wellington's rugged west coast and composed of Wellington greywacke, Rock Point is the Type Locality for fossil tube worm burrows. The area of the site has not been recorded, and the site is seldom visited by people. There is a pa site here (Historic Places Trust counties inventory, 1984) called Tutaamarangi. The adjoining land is farmed.

Conservation Values:

Natural: i,g,h

Cultural: c,d,e

Historic: b

Comment: Fossil remains of polychaete worm tubes occur here, and Rock Point is the type location for the relatively common Torlessia mackayi Bather and the rarer Titahia corrugata Webby (1,2). These are of value to education, and fossils in greywacke are rare. Because this site is part of the coastal escarpment, it has landscape value. The pa site is of spiritual significance to Maori, who venerate their ancestors and their former habitation sites.

Site Importance:

International

National

Regional

Local

Unknown

Comment: This site is regarded as being of National significance for its fossils (1,2) because fossils are very rare in greywacke.

Existing Threats: m

Type & Comment: The location is remote and relatively inaccessible. However, vandalism and fossil collectors might be a problem (1,2).

Human Modification and Human Use: a

Type & Comment: The adjacent land is farmed. There are no nearby roads, and access is restricted. Access is usually by boat, or along the beach.

Existing Protection: i

Type & Comment: None, except for its remoteness, and relative inaccessibility.

Availability of Information:

Natural	1	②	3
Cultural	1	2	③
Historic	1	②	3
Threats	1	2	③
Human Mod. & Use	1	②	3

1. Well documented
2. Limited information (general)
3. Little information (if any)

Comment:

Sources of Information:

Natural	①	2	3	4	5	6	7
Cultural	①	2	3	4	5	6	7
Historic	①	2	3	4	5	6	7
Threats	①	2	3	4	5	6	7
Human Mod. & Use	①	2	③	4	5	6	7

1. Derived info. from existing literature & databases
2. Derived info. as above & field check
3. Derived from existing maps & aerial photographs
4. Recent DOC survey including sampling & analysis
5. Recent DOC survey excluding sampling & analysis
6. Experience
7. Expert opinion

Comment: (1) Turner, M. 1985. Geological Features of the Wellington Region, Wellington Regional Council, Wellington. 72pp.
(2) Hayward, B.W. & Ward, B. 1989 Inventory of New Zealand Fossil Localities of International, National and Regional Importance. 2nd Edition. Geological Society of NZ. Report 89/1.

Recorded on Existing Databases:

Comment:

1. WERI - no listings
2. SSWI - no listings
3. PNA - none (1984)
4. Geopreservation - National importance and vulnerable - 1989
5. HPT County Inventories - one pa site, category B (1984)
6. Other
7. None

Other Considerations:

Accompanying Maps
and Photographs:

Site Name/s: Pipinui Point

Site No: 09/0010

Recorders Name: Bruce Dix

Conservancy: Wellington

Map/Grid Ref: NZMS 260 R27 26560 59025

Date: 5 May 1990

Brief Description of Site: This 2km long site is situated on Wellington's rugged west coast. The adjacent land use is pastoral farming. Nearby Boom Rock is a popular fishing spot. The site is best described as a rock stack nesting site backed by steep coastal slopes.

Conservation Values:

Natural: a,c

Cultural: c

Historic: b

Comment: The site is situated on the coastal escarpment, which remains in a largely natural state. This is one of four nest sites of White Fronted Tern (*Sterna striata*) in the Wellington Region, and was one of five colonies of Sooty Shearwater (*Puffinus griseus*) in Wellington Region but this colony died out about 1963 (1,2). The coastal escarpments have important land and seacape value (pers. obs.). There is one archaeological site of Maori origin in the vicinity, a midden (Historic Places Trust Counties inventory).

Site Importance:

International

National

Regional

Local

Unknown

Comment: Local status is suggested, because of the White-fronted Tern Colony which is one of the few mainland sites in the region (3).

Existing Threats: d,m

Type & Comment: There is suggested human interference to nest sites (1), but the site is largely inaccessible. It is believed that predatory animals such as cats (*Felis domesticus*), rats (*Rattus spp.*) and mustelids (*Mustela spp.*) are a problem here (3) and were probably responsible for the elimination of what was the largest Sooty Shearwater colony on the Wellington mainland known this century (2,3).

Human Modification and Human Use: a,i

The adjacent land is used for pastoral farming. Boat fishing occurs off nearby Boom Rock.

Existing Protection: a

Type & Comment: Paper Road. The remoteness of the site confers some measure of protection, while the paper road running approximately 15km along the shore platform confers protection from development.

Availability of Information:

Natural	1	2	3
Cultural	1	2	3
Historic	1	2	3
Threats	1	2	3
Human Mod. & Use	1	2	3

1. Well documented
2. Limited information (general)
3. Little information (if any)

Comment: A little known site.

Sources of Information:

Natural	①	2	3	4	5	6	⑦
Cultural	①	2	3	4	5	6	7
Historic	①	2	3	4	5	6	7
Threats	①	2	3	4	5	6	⑦
Human Mod. & Use	①	2	③	4	5	6	7

1. Derived info. from existing literature & databases
2. Derived info. as above & field check
3. Derived from existing maps & aerial photographs
4. Recent DOC survey including sampling & analysis
5. Recent DOC survey excluding sampling & analysis
6. Experience
7. Expert opinion

Comment:

Source:

- (1) Anon. 1984. Biological Resources of the Wellington Region. Wellington Regional Council, QEII Trust and NZ Biological Resources Centre. 27pp.
- (2) S. Bartle. National Museum (pers. comm).
- (3) H.A. Robertson, Advisory Scientist, DOC, (pers. comm).

Recorded on Existing Databases:

Comment:

1. WERI - no listings
2. SSWI - Pipinui Point mod value (1982).
3. PNA - No listings (1984)
4. Geopreservation
5. HPT County Inventories - One archaeological site (midden, category C) (1984)
6. Other
7. None

Other Considerations:

Accompanying Maps
and Photographs:

Site Name/s: Makara Rivermouth & Estuary

Site No: 09/0011

Recorders Name: Bruce Dix

Conservancy: Wellington

Map/Grid Ref: NZMS 260 R27 26537 59972

Date: 5 May 1990

Brief Description of Site: Situated on Wellington's West Coast, and accessible by road, the site consists of coastal rivermouth flats surrounded by farmland and a small settlement on the beach. The site measures some 10ha. The surrounding coastal escarpments are important to land and seascape values, and are popular for several recreational pursuits, such as walking, fishing and skindiving.

Conservation Values:

Natural: b,c,f

Cultural: a,c

Historic: b

Comment:

Natural: This site is regionally representative of coastal rivermouth flats which are very uncommon in Wellington (1). It contains a regionally uncommon freshwater snail (*Melanopsis trifasciata*), shortfin eels (*Anquilla australis schmidtii*) and threatened Reef Heron (*Egretta sacra*), and breeding areas for both Black Flounder (*Rhombosolea retiaria*) and Lamprey (*Geotria australis*) (1).

Cultural: This is a site of former settlement by Maori. Plaggen (man modified) soils for kumara cultivation were discovered and post European tattooing implements (metal tipped) were found in remnants of burnt hut (3). An attractive site with seascape values, this site has high recreational use for walking. School parties visit here, to study rock pools, Maori sites, and the World War II gun emplacements (5).

Historic: The site has known archaeological values of Maori origin, particularly on North-facing aspects where kumara were once cultivated, with soils modified to improve their properties for cultivating this important crop (2,3). There are also gun emplacements, dating from World War II, sited on the hillside.

Site Importance:

International

National

Regional

Local

Unknown

Comment: The site has regional importance for natural and archaeological values, and particularly for regional representativeness of coastal rivermouth flats, now rare (1).

Existing Threats: d,e,i,k,m

Type & Comment: Farm run-off and sewage causes eutrophication, changing the character and ecology of the estuary. There is also water pollution also, and grazing by farm animals (1). The adjoining sea coast is extensively fished by amateurs and professionals, and anecdotal evidence suggests that some species (eg. Paua (*Haliotis iris*; *H. australis*), and Rock Lobster (*Jasus edwardsii*) are under pressure, as are Butterfish (*Odx pullus*) (pers. obs.). The beach at Te Hikowhenua, to the North, collects a lot of plastic marine debris (pers. obs.).

Human Modification and Human Use: a,h,i

The area is modified for farming and housing. Recreational pursuits include walking (there is a walkway here), fossicking and picnicking, snorkelling, SCUBA diving, jetskiing and fishing. There are some baches in the area, especially to the North, and nearby Te Hikowhenua is the location of Transpower's earthing electrodes for the Cook Strait power cables. Little is known of traditional Maori use, although piles of paua shells on beaches suggest some form of seafood harvesting, not all of Non-Maori origin (pers. obs.).

Existing Protection:

Type & Comment:

None

Availability of Information:

Natural	①	2	3	
Cultural	①	2	3	
Historic	①	2	3	
Threats	①	②	3	
Human Mod. & Use	①	2	3	

1. Well documented
 2. Limited information (general)
 3. Little information (if any)

Comment: A popular weekend spot, easily accessible, therefore well surveyed.

Sources of Information:

Natural	①	②	3	4	5	⑥	7	
Cultural	1	2	3	4	5	⑥	⑦	
Historic	①	2	3	4	5	6	⑦	
Threats	1	2	3	4	5	⑥	7	
Human Mod. & Use	1	②	③	-4	5	⑥	7	

1. Derived info. from existing literature & databases
 2. Derived info. as above & field check
 3. Derived from existing maps & aerial photographs
 4. Recent DOC survey including sampling & analysis
 5. Recent DOC survey excluding sampling & analysis
 6. Experience
 7. Expert opinion

Comment:

Sources:

1. Anon. 1984. Biological resources of the Wellington Region. Wellington Regional Council, QEII Trust and NZ Biological Resources Centre, Wellington. 27pp.
2. McFadgen, B.G. 1980. Age Relationship between a Maori Plaggen Soil and Moa Hunter sites on the West Wellington Coast. NZ J. Geol. and Geophys. 23(2):249-256.
3. B. McFadgen. Archaeologist; Conservation Sciences Centre, Wellington (pers. comm.).
4. B. Dix, SCO, Wellington Conservancy, DOC, (pers. obs).
5. R. Barker. CRI Taskforce, DOC (pers. comm.).

Recorded on Existing Databases:

Comment:

1. WERI - Local importance - otherwise insufficient information (1982)
2. SSWI - Potential value (1982)
3. PNA
4. Geopreservation - no sites listed (1989)
5. HPT County Inventories - Approx 20 Archaeological sites in the area (1984)
6. Other
7. None

Other Considerations: It may be too late to save the natural values of this site, because of well established farming and housing nearby.

Accompanying Maps and Photographs:

Site Name/s: Black Point

Site No: 09/0012

Recorders Name: Bruce Dix

Conservancy: Wellington

Map/Grid Ref: NZMS 260 R27 26453 59910

Date: 5 May 1990

Brief Description of Site: Situated at the base of Wellington's coastal cliffs, 1km north of Cape Terawhiti, this site is described as regionally important as one of the several fur seal (Arctocephalus forsteri) haulouts in the Wellington Conservancy (1). The size of the site is estimated to be 1ha and it is one of the most remote sites on Wellington's South-west coast. The adjacent landuse is farming, behind the coastal escarpment.

Conservation Values:

Natural: a,c,e

Cultural: c

Historic: b

Comment: Part of the coastal wave cut platform, this site is one of several winter seal haulout sites for fur seals (1). Because of its remoteness, it is not often used for study purposes, and human impact is low here. The coastal escarpment, with its specialised plant communities is in a natural state, and is an important part of the region's land and seascape values. A karaka grove slightly inland is recorded on the Historic Places Trust counties inventory as a Maori plantation.

Site Importance:

International

National

Regional

Local

Unknown

Comment: Regionally important as a seal haulout site on the Sites of Special Wildlife Interest register (SSWI). However, the Fur Seal is not thought to be endangered, and seal numbers in the Wellington Conservancy are increasing (pers. obs.).

Existing Threats:

Type & Comment: Not recorded.

Human Modification and Human Use: a

Unknown, apart from farming behind the escarpment. There are no roads near here.

Existing Protection: 1

Type & Comment: None, apart from its remoteness, and relative inaccessibility.

Availability of Information:

Natural	1	②	3	1. Well documented
Cultural	1	2	③	2. Limited information (general)
Historic	1	2	③	3. Little information (if any)
Threats	1	2	③	
Human Mod. & Use	1	2	③	

Comment: Remote site - seldom surveyed

Sources of Information:

Natural	①	2	3	4	5	6	7	1. Derived info. from existing literature & databases
Cultural	1	2	③	4	5	6	7	2. Derived info. as above & field check
Historic	①	2	3	4	5	6	7	3. Derived from existing maps & aerial photographs
Threats	1	2	3	4	5	6	7	4. Recent DOC survey including sampling & analysis
Human Mod. & Use	①	2	③	4	5	6	7	5. Recent DOC survey excluding sampling & analysis
								6. Experience
								7. Expert opinion

Comment:

- (1) Anon. 1984. Biological Resources of the Wellington Region. Wellington Regional Council, QEII Trust and NZ Biological Resources Centre, Wellington. 27pp.

Recorded on Existing Databases:

Comment:

1. WERI not listed
2. SSWI - Black Point classified as Mod/High (1982)
3. PNA - None - (1984)
4. Geopreservation no listings
5. HPT County Inventories - One site further inland, (Karaka grove, Category C) (1984).
6. Other
7. None

Other Considerations:

Accompanying Maps
and Photographs:

Site Name/s: Cape Terawhiti to Tongue Point

Site No: 09/0013

Recorders Name: Bruce Dix

Conservancy: Wellington

Map/Grid Ref: NZMS 260 R27 26470 59862

Date: 5 May 1990

Brief Description of Site: Situated on Wellington's South western corner, Cape Terawhiti is an extremely isolated and rugged spot. Natural values here are high with features of geological interest. A well preserved interglacial marine terrace occurs to the west of Oteranga Bay and up to five terrace levels can be distinguished on the flanks of Terawhiti Hill. A large seal haulout occurs here. Just inland is the remains of the Albion Mining Company's gold ore crushing plant; this site is of national importance as an example of Colonial technology (2). Nearby Tongue Point has similar terraces and a seal colony. This site also includes Oteranga Bay, where the power cables from the South Island come ashore. Anchoring and fishing are forbidden in the area, for safety reasons. This rich and unexploited area has since attracted the attention of unlicensed fishermen poaching Paua (Haliotis spp) and Rock Lobster (Jaanus edwardsii) (pers. obs.). The site is slightly over 6km long.

Conservation Values: Natural: a,c,e,f,g,h Cultural: a,c,d Historic: a,b,c,d,e

Comment:

Natural: This site is situated on the coastal escarpment system, which elsewhere in the region is noted for its naturalness, and as a habitat for several rare plants and animals. It is regionally representative of a seal (Arctocephalus forsteri) haul-out area; Southern Black Back Gull (Larus dominicanus) and Black Shag (Phalacrocorax carbo novaehollandiae) colonies occur here. Gold mineralisation in greywacke is most unusual; and the series of marine terraces is of considerable scientific interest as a record of interglacial sea levels (2,3).

Cultural: Many sites of former Maori occupation exists here and landscape values are considered important (3). There is an urupa at Oteranga Bay (5).

Historic: The stamping battery is an excellent example of colonial technology, and this goldmining history and geological values make this a most important site. Archaeological values of both Maori and non-Maori origin occur here (2,HPT). The rugged coastline has claimed many ships, particularly at Thoms Rock, nearby (6).

Site Importance: International National Regional Local Unknown

Comment: The site is ranked by National importance because of the old gold workings; gold mineralisation in greywacke is most unusual.(2) The landform inventory ranking is of national importance (3). It is regionally important as a seal haulout area, and numbers of seals are thought to be increasing here (1, pers. obs.).

Existing Threats: i

Type & Comment:

Human Modification and Human Use: a,h,i,j

Type & Comment: Boating, fishing, diving, and some off-road cycling occur here. The land behind the escarpment and terraces is farmed. Some traditional Maori seafood gathering still occurs, but the degree of use is not known.

Existing Protection: a,c

Type & Comment: Some measure of protection exists because of its remote location, and the paper road cannot be developed. The old gold workings are on Wellington City Council land, and access is restricted.

Availability of Information:

Natural	①	2	3
Cultural	1	②	3
Historic	1	②	3
Threats	1	②	3
Human Mod. & Use	1	②	3

1. Well documented
2. Limited information (general)
3. Little information (if any)

Comment:

Sources of Information:

Natural	①	2	③	4	5	6	7
Cultural	①	2	3	4	5	6	7
Historic	①	2	③	4	5	6	7
Threats	1	2	3	4	5	⑥	7
Human Mod. & Use	①	2	③	4	5	6	7

1. Derived info. from existing literature & databases
2. Derived info. as above & field check
3. Derived from existing maps & aerial photographs
4. Recent DOC survey including sampling & analysis
5. Recent DOC survey excluding sampling & analysis
6. Experience
7. Expert opinion

Comment:

1. Anon. 1984. "Biological Resources of the Wellington Region. Wellington Regional Council, QEII Trust and NZ Biological Resources Centre, Wellington. 27pp.
2. Turner, M. 1985. "Geological Features of the Wellington Region. Wellington Regional Council, Wellington. 72pp.
3. NZ Landform Inventory : First approximation. 1989. Research School of Earth Sciences Occ. Paper No. 4. Victoria University, Wellington.
4. B Dix, SCO Wellington, (pers. obs.)
5. HVDC Transmission System Expansion; Proposed Hybrid Development No. 1 July 1990. Prepared for Transpower by Murray-North Ltd.
6. Ingram, C.W.N. 1977. NZ Shipwrecks 1795-1975. 5th Ed. 464pp. A.H. & A.W. Reed, Wellington.

Recorded on Existing Databases:

Comment:

1. WERI - No listings
2. SSWI - Cape Terawhiti and Tongue Point classified as of Moderate-high value (1982)
3. PNA - No listings (1984)
4. Geopreservation - Classified as of National importance (1986)
5. HPT County Inventories - Archaeological sites of Maori origin at Oteranga Bay & Tongue Point (1984)
These include terraces, ovens, middens, and karaka groves (Category c)
6. Other - NZ Landform Inventory (1989)
7. None

Other Considerations: A field check is needed, and a seal population monitoring programme is planned.

**Accompanying Maps
and Photographs:**

Site Name/s: "Run around" to Karori Stream Mouth

Site No: 09/0014

Recorders Name: Bruce Dix

Conservancy: Wellington

Map/Grid Ref: NZMS 260 R27 26535 to 59814

Date: 6 May 1990

Brief Description of Site: Situated on the south coast of Wellington, this site is part of the coastal cliff system which extends from Paekakariki on the north west, to Owhiro Bay on the South Coast. The area is one of the best regional examples of Wellington's rugged cliff and scree vegetation, with important geological, botanical, zoological and landscape values, most important when one considers its proximity to "civilisation" (1). Access is restricted to times when tide and swell permit (hence the name "run around") and by locked gate at the Owhiro Bay end. There is also a seal haulout at Sinclair Head, used by the NZ Fur Seal (*Arctocephalus forsteri*). The site measures approximately 8km of coastline. Some rock quarrying occurs at the Owhiro Bay end, supplying building aggregate to the region.

Conservation Values:

Natural: a,b,c,e,f,g,h

Cultural: a,b,c,d,f

Historic: a,b,d

Comment:

Natural: This is the most accessible seal haulout site in Wellington. Two colonies of the rare brown weevil *Lyperobius huttoni* occur here (the only ones known in Western Wellington), Pingao (*Desmoschoenus spiralis*) occurs here (1). A raised shore platform and volcanic intrusives/pillow lavas are noteworthy at Red Rocks (2). A Karaka (*Corynocarpus laevigatus*) forest remnant near Sinclair Head is considered valuable (1). The site is listed as having high insect value on SSWI (Sites of Special Wildlife Interest), is one of the best regional examples of cliff and scree vegetation (1), and is still relatively natural.

Cultural: The area was formerly occupied by early Maori. Strong public interest and use, with strong aesthetic, landscape and seascape values are notable here (pers. obs.). Educational, scientific and scenic values are important (1, pers. obs.), and the highly accessible seal colony is often studied by amateur naturalists. There are some sites of importance to Maori mythology here, in particular Red Rocks. Maui bloodied his nose here to bait his hook, prior to catching Te-ika-a-Maui (The fish of Maui, or the North Island).

Historical: Several archaeological sites of Maori origin, and many shipwrecks occur on this rugged coastline (6). In addition, Sinclair Head has some old defence structures, and the ridge above was used as a lookout during World War II (7).

Site Importance:

International

National

Regional

Local

Unknown

Comment: The occurrence of the rare speargrass weevil (1), and the volcanic intrusives at Red Rocks (2) are considered to be of National importance (5).

Existing Threats: a,b,c,d,e,f,i,k,m

Type & Comment: Erosion is a natural process but likely to be hastened by human activity such as quarrying. There are up to sixteen species of adventive plants here (4), and goats (*Capra hircus*) damage native plant communities, hastening erosion and allowing exotic plants to establish (3, pers. obs.). Karori Stream is the discharge site for overflow wastewater. Quarrying for building aggregate detracts from aesthetic values, and can cause sedimentation problems if sediment traps are not maintained (3). The area is extensively fished, often illegally (pers. obs.). Other threats include damage by recreational vehicles, fire, littering, car dumping and vandalism (1, pers. obs.).

Human Modification and Human Use: a,e,h,i,j

Type & Comment: Farming occurs in the area behind the escarpment. Overflow sewage is released into Karori Stream. A high degree of land and water-based recreation occurs in this area, notably walking, cycling, trail biking and off-road vehicles, nature study, fishing, skin and SCUBA diving, and several baches have been built in the area. The area was formerly an important source of kaimoana but current use is not known.

Existing Protection: a,c,i

Type & Comment: Scientific reserves are at Sinclair Head (0.62ha) and Red Rocks (0.52ha), and a Wildlife Reserve for one weevil colony. The 'limited access road' is administered by Wellington City Council. The Reserve areas are not immune to vandalism (pers. obs.), and do not protect all weevil colonies.

Availability of Information:

Natural	①	2	3
Cultural	①	2	3
Historic	①	2	3
Threats	①	2	3
Human Mod. & Use	①	2	3

1. Well documented
2. Limited information (general)
3. Little information (if any)

Comment: The site has long been considered important and protection urgently advocated, therefore many studies have been done here.

Sources of Information:

Natural	①	②	③	4	5	⑥	⑦
Cultural	1	②	3	4	5	⑥	7
Historic	①	2	3	4	5	6	7
Threats	1	②	3	4	5	⑥	7
Human Mod. & Use	1	②	3	4	5	⑥	7

1. Derived info. from existing literature & databases
2. Derived info. as above & field check
3. Derived from existing maps & aerial photographs
4. Recent DOC survey including sampling & analysis
5. Recent DOC survey excluding sampling & analysis
6. Experience
7. Expert opinion

Comment:

1. Anon. 1984. Biological Resources in the Wellington Region. Wellington Regional Council, QEII Trust and NZ Biological Resources Centre, Wellington. 27pp.
2. Turner, M. 1985. Geological Features in the Wellington Region. Wellington Regional Council, Wellington. 72pp.
3. B. Dix, SCO, DOC Wellington, (pers. comm.).
4. Wassilieff, M.C.; Clark, D.J.; Gabites, I. 1986. Scenic Reserves of the Lower North Island. Biological Survey of Reserves Series No. 14. Dept of Lands and Survey, Wellington. 27pp.
5. B. Hayward, NZ Geological Survey, (pers. comm.).
6. Ingram, C.W.N. 1977. NZ Shipwrecks 1795-1975. 5th ed. 464pp. A.H. & A.W. Reed, Wellington.
7. Red Rocks Coastal Walk. Pamphlet produced by Wellington City Council, Parks and Recreation Dept.

Recorded on Existing Databases:

Comment:

1. WERI - No listings
2. SSWI - Sinclair Head listed as Mod-High (1982)
3. PNA - Unique geological formation at Red Rocks, protected from further quarrying (1984)
4. Geopreservation - Red Rocks of National Importance (Igneous Formations (5) in preparation)
5. HPT County Inventories - Six archaeological sites (1984), including midden, pits, terraces and Karaka Groves (Category C).
6. Other
7. None

Other Considerations: The site has had some marine studies conducted, albeit for the purposes of wastewater discharge at Karori Stream. This area has potential as a marine reserve site, particularly as a continuation of existing reserve areas on land. Conservancy personnel are currently working on further protection of the coastal escarpment area.

Accompanying Maps
and Photographs:

Site Name/s: Taputeranga Island

Site No: 09/0015

Recorders Name: Bruce Dix

Conservancy: Wellington

Map/Grid Ref: NZMS 260 R27 26583 59827

Date: 6 May 1990

Brief Description of Site: Situated near the south Wellington suburb of Island Bay, it is in fact the Island which names the suburb. The Island is known for volcanic intrusives into Wellington greywackes and a raised beach platform(3). There are other natural values here, but it is mainly its spiritual significance to the Maori which is important. The name means "Island of Sacred Ways". The site measures 3.2ha and is not populated. There are occasional summer visitors.

Conservation Values:

Natural: a,b,c,e

Cultural: a,d

Historic: d

Comment:

Natural: The island contains the following saltmarsh plant species, (Crassula moschata, Suaeda novae-zealandiae, and Meliccytus sp. cf obovata (4) and is a nesting site for Cook Strait Blue Penguins (Eudyptula minor variabilis), Variable Oystercatchers (Haematopus unicolor) and southern black backed gulls (Larus dominicanus) (2). Common skinks (Leiopisma nigriplantare) and geckos (Hoplodactylus maculatus) are also present (1). Listed as moderate value on SSWI (Sites of Special Wildlife Interest). A diverse marine environment is apparent in the area (pers. obs.).

Cultural: The island features in Maori folklore as the vantage point from which Kupe saw the wheke (giant octopus) in pursuit of which he made his way across the ocean. The Island was also used for defence by Tamairangi, chieftainess of the Ngati-Ira, when attacked by Te Atiawa and Ngati Toa. There is no record of Taputeranga having been permanently occupied but it was overlooked by a Ngai Tara pa called 'Uruhau'.(1)

Historic: Four shipwrecks are located in nearby Owhiro Bay (7, pers obs).

Site Importance:

International

National

Regional

Local

Unknown

Comment:

Taputeranga Island is of regional importance because of the nesting site for rare Variable Oystercatchers and its moderate SSWI ranking (1,2,6).

Existing Threats: c,d,e,i,m

Type & Comment: Exotic plants such as boneseed (Chrysanthemoides monolifera) and pest animals such as Norway Rats (Rattus norvegicus) are present threatening lizards and bird nests (4). Water pollution occurs from the sewage discharge from nearby Siren's Rocks. Because of its proximity to urbanization, the site is intensively exploited by snorkel and scuba divers (pers. obs). There is a possibility of fire damage by picnickers or human interference to plant communities and nests (2). The island is also within reach of mustelids and cats (Felis domesticus) which also threaten wildlife (6).

Human Modification and Human Use: c,d,h,i

Type & Comment: The Island Bay fishing fleet is moored nearby, and the site is within the Maritime Planning Area. The site is also a useful area for dive training, and recreational fishing occurs from boats and the shore. The site is pleasant for walking.

Existing Protection: c

Type & Comment: It is a Recreation Reserve, and owned by the Wellington City Council, but there is little formal protection for natural values here.

Availability of Information:

Natural	①	2	3
Cultural	1	②	3
Historic	1	②	3
Threats	1	②	3
Human Mod. & Use	①	2	3

1. Well documented
2. Limited information (general)
3. Little information (if any)

Comment: Well surveyed as a potential marine reserve site.

Sources of Information:

Natural	①	2	3	4	5	⑥	⑦
Cultural	①	2	3	4	5	6	7
Historic	①	2	3	4	5	⑥	7
Threats	①	2	3	4	5	6	⑦
Human Mod. & Use	①	2	③	4	5	⑥	7

1. Derived info. from existing literature & databases
2. Derived info. as above & field check
3. Derived from existing maps & aerial photographs
4. Recent DOC survey including sampling & analysis
5. Recent DOC survey excluding sampling & analysis
6. Experience
7. Expert opinion

Comment:

Sources:

1. Keller, J. 1988. A Resource Study of the Tapu-te-ranga management area.
2. Anon 1984 Biological Resources of the Wellington Region. Wellington Regional Council, NZ Biological Resources Centre. QEII Trust, Wellington. 27pp
3. Turner, M. 1985. Geological Features of the Wellington Region, Wellington Regional Council, Wellington 72pp.
4. Freegard, J. and Weeber, Y.B. 1986 Vegetation of Coasts and Islands of Wellington Harbour. WHMPA Natural Resources Study.
5. B. Dix, SCO, DOC Wellington, (Pers. Obs.)
6. H A Robertson, Advisory Scientist, DOC Wellington, (Pers. Comm.)
7. Ingram, C.W.N. 1977. NZ Shipwrecks; 1795 - 1975 5th ed. 464 pp. A.H. & A.W. Reed, Wellington

Recorded on Existing Databases:

Comment:

1. WERI No listings
2. SSWI - Taputeranga Island classified as Moderate value (1982)
3. PNA - No listings, 1984
4. Geopreservation - no sites listed (1989)
5. HPT County Inventories - No sites listed, (1984)
6. Other
7. None

Other Considerations: This site is under investigation as potential marine reserve.

Accompanying Maps
and Photographs:

Site Name/s: Wellington Harbour

Site No: 09/0016

Recorders Name: Bruce Dix

Conservancy: Wellington

Map/Grid Ref: NZMS 260 R27 26660 59910

Date: 3 May 1990

Brief Description of Site: This harbour has been described as one of the finest natural harbours in the world, providing safe and deep anchorage. It has a long and turbulent history of Maori occupation, as well as a rich colonial history. Despite being bordered by major population centres and having been heavily modified, there are still many natural values here. The surrounding hills are spectacular and aesthetically pleasing and some pockets of natural vegetation remain on them. The three small islands within the harbour have rare plants, seabird nesting sites, and both cultural and historical values. The area of the harbour is estimated at 7,500 ha and its length of coastline is approximately 45km.

Conservation Values:

Natural: a,b,c,e,f,g

Cultural: a,b,c,d,e,f

Historic: a,b,c,d,e,f

Comment:

Natural: The coastal forest remnants on the surrounding hills are still highly natural and representative of the former forest type (1). There are rare and endemic species in pockets around the harbour's edge, and on the three islands: *Somes*, *Mokopuna* and *Ward*. *Pingao* (*Desmoschoenus spiralis*) grows on *Somes* Island, in *Rona Bay*, *Petone*, and *Lyall*, *Princess* and *Houghton Bays*. *Lyall Bay* is also the type locality for at least 6 species of marine algae; *Bryopsis scarfei*, *Bryopsis pseudocorymbosa*, *Halopteris novae-zealandiae*, *Ptilonia mooreana*, *Sarcodia grandifolia* and *Scinaia firma*. There have also been rare species recorded in this location; *Codium gracile*, *Griffithsia* sp. cf. *G. ovalis*, *P. woolhousiae*, *Pseudogloiothloea berggrenii* and *Sporochnus stylosus* (4).

There are lizards on the islands; the common gecko (*Hoplodactylus maculatus*), the common skink (*Leiolopisma nigriplantare maccanni*), the Copper skink (*Cyclodina aenea*) and the spotted skink (*L. lineo-ocellatum*). Seabirds also nest on these islands, including the spotted shag (*Stictocarbo punctatus*) on *Somes* Island (The only Southern North Island colony), which is also an important site for the rare variable oystercatcher (*Haematopus unicolor*) and reef heron (*Egretta sacra*) (5).

There are several geological sites of interest here too, many of them fault related. These include the hanging valleys along the Wellington Fault Scarp on the western side of the harbour, and the fault scarp itself. Interglacial marine terraces are apparent on the northern end of Miramar Peninsula, and the three islands in the harbour. There are also Late Holocene beach ridges and shore platforms, the most notable being that in William Street, Petone (1). The entire harbour is important as a spawning and nursery area for fish (6,7,8,10).

Cultural: The harbour supports large populations of shellfish which formerly supported a large traditional fishery. This fishery is reduced because of water pollution in the harbour (pers. obs.). The harbour, Miramar Peninsula and surrounding hills have aesthetic land and seascape values. Spiritual values to Maori include old pa sites and commemorative sites, in particular on Miramar Peninsula (once an island). Maori legends involving the Maori navigator, Kupe, abound here. The site is of considerable educational value because of the many natural and historical values. This is especially the case for university studies.

Historic: It is difficult to isolate specific sites, except perhaps for those of European origin during colonial times (Historic Places Trust counties inventory). *Somes* Island is known for its historic use as a quarantine station and *Ward* Island is known for the anti submarine boom strung between there and Eastbourne, and the submarine net strung between *Ward* Island and *Point Howard* during World War II. The entire harbour and its environs were radically altered by the 1855 earthquake when the shore platform was uplifted (2), and by post-colonial development, eg. the harbour is almost entirely ringed by roading.

Site Importance:

International

National

Regional

Local

Unknown

Comment: Of regional importance: The raised beach ridge at William Street, Petone. This is a Holocene beach ridge, exposed by tectonic uplift, predating the 1855 and 1460 earthquakes (2). There appears to be some disagreement between Source (2) and the landform inventory. However, the many other values of this site would qualify for regional importance, on numbers alone. Some tectonically related features are of regional importance, e.g. raised beach ridges and rock stacks, rock arches eg. on *Somes* and *Ward* Islands (2). The biological values are of regional importance (1,2) and the moderate/high ranking on "Sites of Special Wildlife Interest" inventory.

Of national importance is the nationally significant population of the rare Variable Oystercatcher (*Haematopus unicolor*) (13).

Existing Threats: c,d,e,j

Type & Comment: Coastal plant communities such as Pingao (*Desmoschoenus spiralis*) and Spinifex (*Spinifex hirsutus*) are threatened by introduced plants such as (*Ammophila arenaria*) by being out-competed (pers. obs.), and coastal forest is threatened by introduced animals such as possums (*Trichosurus vulpecula*). Water pollution from industrial and domestic sources is also a problem, threatening biological and aesthetic values which hopefully, will be improved by the new water classifications being upheld. Spoil and refuse dumping, and reclamation have been a feature of this site, threatening natural values and aesthetics. Contamination of stormwater by sewage (old pipes in disrepair) is an urgent problem, which results in widespread water pollution by untreated sewage. In the inner harbour the invasive Asian kelp *Undaria pinnatifida* has been accidentally introduced and now threatens the indigenous species composition (3). Water pollution by milliscreened sewage also occurs at and around Lyall Bay, from the outfall at Moa Point.

Human Modification and Human Use: a,b,c,d,e,g,h,i,j

Type & Comment: The surrounding land has been largely cleared for farming and urban development. There are many reclamation sites, some additional to areas upthrust by the 1855 earthquake. Wellington is a thriving commercial port, and has several small boat moorings/harbours. Beach replenishment has occurred at Oriental Bay, for recreational purposes eg. swimming. Boating and fishing are the main recreational pursuits, although waterskiing, windsurfing and rowing are also popular. No sewage is intentionally discharged into the harbour, except for 'emergency discharge' when Hutt City carries out maintenance on the Pencarrow Sewer, but stormwater outlets are very numerous around the harbour. Little traditional shellfishing is now practised, due to pollution within the harbour (9). The many reserves and beaches around the harbour offer opportunities for shore-based recreation such as picnicking, barbecuing and walking.

Existing Protection: a,b,c,d,i

Type & Comment: A Wildlife Management Reserve is situated at Mokupuna Island (0.78 ha) and recreation reserves are at Ward Island, Petone, Days Bay and Mahina Bay. There are designated open spaces between Owhiro Bay and Palmer Head; Ngauranga and Lyall Bay, and Scenic reserves at Lowry Bay (278.37ha) Eastbourne (43.8ha) and Mount Hawtrey (320ha). Further to this, there is a large parcel of Defence Land on the northern end of Miramar Peninsula, and a smaller parcel at Point Dorset, and the Te-au-a-Tane Study Management Area, set aside by the Wellington Harbour Maritime Planning Authority. Lastly, there are sixteen smaller parcels of stewardship land around the harbour (12).

Availability of Information:

Natural	①	2	3			1. Well documented
Cultural	①	2	3			2. Limited information (general)
Historic	①	2	3			3. Little information (if any)
Threats	①	2	3			
Human Mod. & Use	①	2	3			

Comment:

Sources of Information:

Natural	①	2	3	4	5	⑥	⑦	1. Derived info. from existing literature & databases
Cultural	①	2	3	4	5	⑥	7	2. Derived info. as above & field check
Historic	①	2	3	4	5	⑥	7	3. Derived from existing maps & aerial photographs
Threats	①	2	3	4	5	⑥	7	4. Recent DOC survey including sampling & analysis
Human Mod. & Use	①	2	③	4	5	⑥	7	5. Recent DOC survey excluding sampling & analysis
								6. Experience
								7. Expert opinion

Comment:

Sources:

1. Anon. 1984. Biological Resources of the Wellington Region. Wellington Regional Council, QEII Trust and NZ Biological Resources Centre, Wellington. 27pp.
2. Turner, M. 1985. Geological Features of the Wellington Region. Wellington Regional Council, Wellington 27pp.
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5. R Cossee, Scientist, DOC Wellington, (pers. comm.).
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7. Wong, E.K.C. 1975. The Biology of the Spotted Stargazer Geniagrus monopterygius in Wellington Harbour, New Zealand. Unpubl MSc (Hons) Thesis. Victoria University, Wellington.
8. Frentzos, A.A. 1980. Studies on the ichthyoplankton of Wellington Harbour. Unpubl MSc Thesis. Victoria University, Wellington.
9. Stoffers, et al. 1986. Heavy Metal Pollution in Wellington Harbour. NZ J. Marine and Freshwater Research 20(3):495-512.
10. Livingstone, M.E. 1982. The Feeding Ecology of five Flatfish species (Pleuronectiformes) in Wellington Harbour, NZ. Unpubl. PhD Thesis. Victoria University, Wellington.
11. B. Dix, SCO DOC, Wellington (pers. obs.).
12. Cadastral Records, DOC Conservancy Office, Wellington.
13. H Robertson, Advisory Scientist, DOC, Wellington (pers. comm.).

Recorded on Existing Databases:

Comment:

1. WERI - No listings
2. SSWI - Hutt River Mouth - moderate, Gracefield Scrub - Moderate, Mt Hawtrey Bush - Mod/High Mokopuna Island - Mod/High, Somes Island - Mod/High, Ward Island - Mod/High (1982)
3. PNA - Mokopuna Island (0.78ha) Wildlife Management Reserve (1984)
4. Geopreservation - No sites listed (1989)
5. HPT County Inventories - 5 for Archaeological sites, 7 Historic Places & 298 Historic Buildings (1984)
6. Other - Landform Inventory - William Street, Beach ridge, locally important (1989)
7. None

Other Considerations: Values are probably more cultural and historical - many natural values have been altered by human modifications.

Accompanying Maps
and Photographs:

Site Name/s: Pencarrow Head to Baring Head

Site No: 09/0017

Recorders Name: Bruce Dix

Conservancy: Wellington

Map/Grid Ref: NZMS 260 R28 26660 59797

Date: 4 May 1990

Brief Description of Site: The site is situated on Wellington's south coast, to the east of Wellington Harbour and bounded to the east by Baring Head. The stony beach is formed from gravels washed down the nearby Orongorongo and Wainuiomata Rivers. The lakes and wetlands are flooded valleys and display the vegetation sequences of recent wetlands. Natural values are extremely high, but the area is also extremely sensitive (1). There is sandmining in the area, supplying high-quality aggregate for use in concrete which can be pumped (pers. obs.). The site is approximately 7km long.

Conservation Values:

Natural: a,b,c,d,e,f,g,h

Cultural: b,c,e

Historic: a,b,c,d

Comment:

Natural: The rare sedge Pingao (*Desmoschoenus spiralis*) occurs near the outlet of L. Kohangapiripiri, and in other isolated pockets (3). The Pencarrow Lakes (Kohangapiripiri and Kohangatera) with their adjacent wetland shelter several endemic plants and animals, e.g., *Potamogeton ocherratus* and *Cotula dispersa* (1), threatened Giant kokupu (*Galaxias argenteus*), and Spotless Crane (*Porzana tabuensis*) (4). It is an important feeding and breeding area for several bird species eg. the Black Shag (*Phalacrocorax carbo*) at the head of L. Kohangatera, and the Banded Dotterel (*Charadrius bicinctus*) along the beaches (4). There are good examples here of early vegetative succession, due to the relatively recent disturbance caused by tectonic uplift (1). Saltmarsh plants are found alongside freshwater plants, and would be most sensitive to human-induced changes to the brackish water regime (1, pers. obs.). Such recent wetlands are under-represented in this conservancy. The raised beaches are examples of interglacial features (2). The submarine canyons offshore are possibly Hoki (*Macruronus novaezealandiae*) spawning areas (6).

Cultural: There are landscape values in the raised gravel beaches and accretion, and aesthetic values in the lakes, valleys and beaches. The site is of value to education, particularly to university studies (pers. obs.). This is an important site of former Maori occupation with Pa sites, middens, ovens and karaka groves listed on the Historic Places Trust counties inventory (HPT).

Historic: There are two lighthouses, at Pencarrow and Baring Heads, and an old wharf which has become land-bound with beach accretion (pers. obs.). There are at least four shipwrecks here (5, pers. obs.). The Pencarrow Lighthouse is considered of national importance (HPT).

Site Importance:

International

National

Regional

Local

Unknown

Comment: The lakes and wetlands are of mod/high to high value on SSWI (Sites of Special Wildlife Interest) and of National ranking in WERI (Wetlands of Ecological and Regional Importance) because of the representativeness of "recent" wetlands. The Pencarrow Lighthouse site is considered to be of national significance (HPT).

Existing Threats: c,d,e,f,k

Type & Comment: Coastal plant communities, particularly pingao are being disturbed by introduced plants eg. Marram (*Ammophila arenaria*) and animals e.g. Rabbits (*Oryctolagus cuniculus*) (pers. obs.). Organic and heavy metal pollution occurs, from the sewage discharge at Bluff Point (5). Gravel mining at Fitzroy Bay threatens rare plants and habitats, if not carefully controlled (1, pers. obs.). Recreational vehicles also threaten plant communities eg. mort daisies (*Raoulia* sp. aff. *hookeri*) and wildlife eg. Banded Dotterels (1, pers. obs.).

Human Modification and Human Use: a,e,h,i,k

Type & Comment: Much of the surrounding land has been modified for farming, although some is now reverting. A sewer outfall is located at Bluff Point, Fitzroy Bay. Some recreational pursuits occur in unpolluted areas. These include walking, birdwatching, driving recreational vehicles fishing and diving the latter both from boats, or from shore. There is a sand mining and gravel operation at Fitzroy Bay.

Existing Protection: a,c

Type & Comment: The usual marginal strips along lakesides are present (although waived on Hutt Valley Drainage Board land near L. Kohangapiripiri. Both lakes are Wildlife Management Reserves (L. Kohangapiripiri 25ha and L. Kohangatera 80ha). Protection is not considered adequate to prevent the effects of uncontrolled human activity, and the site has been proposed as a Regional Park, which could improve controls and public access.

Availability of Information:

Natural	1	2	3	
Cultural	1	2	3	
Historic	1	2	3	
Threats	1	2	3	
Human Mod. & Use	1	2	3	
				1. Well documented
				2. Limited information (general)
				3. Little information (if any)

Comment:

Sources of Information:

Natural	1	2	3	4	5	6	7	
Cultural	1	2	3	4	5	6	7	
Historic	1	2	3	4	5	6	7	
Threats	1	2	3	4	5	6	7	
Human Mod. & Use	1	2	3	4	5	6	7	
								1. Derived info. from existing literature & databases
								2. Derived info. as above & field check
								3. Derived from existing maps & aerial photographs
								4. Recent DOC survey including sampling & analysis
								5. Recent DOC survey excluding sampling & analysis
								6. Experience
								7. Expert opinion

Comment:

1. Anon. 1984. Biological Resources of the Wellington Region. Wellington Regional Council, QEII Trust and NZ Biological Resources Centre, Wellington. 27pp.
2. Turner, M. 1985. Geological Features of the Wellington Region. Wellington Regional Council, Wellington. 72pp.
3. B. Dix, SCO, DOC Wellington, (pers. obs.).
4. Anderlini, V.C. 1989. Seasonal Variations in Trace Metal concentrations and Growth Factors in Bivalve Molluscs from New Zealand and Oman as Indicators of Marine Pollutions. Unpubl. PhD Thesis, Victoria University, Wellington.
5. Ingram, C.W.N. 1977. NZ Shipwrecks: 1795 to 1975. 5th ed. 464pp. A.H. & A.W. Reed, Wellington.
6. C. Wratt, Royal Forest and Bird Protection Society, Lower Hutt Branch (pers. comm.).

Recorded on Existing Databases:

Comment:

1. WERI - Regional for L. Kohangapiripiri, National for L. Kohangatera (1982)
2. SSWI - Mod/High for L. Kohangapiripiri, High for L. Kohangatera (1982)
3. PNA - No (1984)
4. Geopreservation - No sites (1989)
5. HPT County Inventories - 38 Archaeological sites of Maori origin (Category C), and Pencarrow Lighthouse site (continued preservation considered essential) (1984).
6. Other
7. None

Other Considerations: There is currently some debate regarding the legality of the recent water reclassification imposed by the Wellington Regional Council, however, indications are that secondary sewage treatment is possible in the future, and this will improve the biotic and aesthetic values of the site.

The sandmining operators at Fitzroy Bay propose to help restore and protect the natural values of the area, and are currently working with Lower Hutt City Council, Wellington Regional Council, and DOC towards a management plan for the site.

The Lower Hutt Branch of the Royal Forest and Bird Protection Society has suggested this site as a possible marine reserve. (C Wratt, Pers. Comm).

Accompanying Maps and Photographs:

Site Name/s: Turakirae Head

Site No: 09/0018

Recorders Name: Bruce Dix

Conservancy: Wellington

Map/Grid Ref: NZMS 260 R28 26720 59740

Date: 4 May 1990

Brief Description of Site: Situated on the North Island's south coast at the end of the Rimutaka Range, Turakirae Head is extremely rich in natural values, and was rescued from a shingle mining operation which ceased in 1970. Turakirae Head is noteworthy for the series of tectonically raised beaches formed during the late Holocene (2). Further towards Palliser Bay by some 9km are the volcanic rocks of Mukamuka and the reverse fault at Thurst Creek (3). Between these is a site listed on SSWI (Sites of Special Wildlife Interest) as "potential". None of these latter features are well known. This stretch of coastline measures approximately 14km.

Conservation Values: Natural: a,b,c,d,e,g,h Cultural: a,b,c,e Historic: b,f

Comment:

Natural: The natural values are very high for this site. The geology, soils and vegetation sequences of the raised beach system contain the history of uplifts from the last 6,500 years (1,2,5), and contain 40 distinct vegetation types (1). The site also represents one of the few regional examples of peat, which contains information on previous vegetation and climate (1,3). The vulnerable/rare Shore Spurge (*Euphorbia glauca*), the vulnerable Dwarf False Musk (*Mazus pumilio*), and the rare Sedge Pingao (*Desmoschoenus spiralis*) occur here. It is reputedly the largest of the several winter (non-breeding) colonies of the NZ Fur Seal (*Arctocephalus forsteri*) in the region (1,4), and fossil evidence suggests that the Fur Seal was breeding here 6,000 years ago (3). The site supports a large population of endemic lizards, including the common gecko (*Hoplodactylus maculatus*), Common Skink (*Leiopisma nigriplantare maccanni*), copper skink (*Cyclodina aenea*) and reputedly the best mainland population of the spotted skink (*Leiopisma lineo-ocellatum*) in the region (1,4). The soils and vegetation sequences are very susceptible to changes caused by human interference and stock grazing (1), and the removal of boulders for reclamation was halted in 1970(3). The raised beaches themselves are reputedly among the best examples internationally (3) and are listed as being of particular scientific interest in the Geopreservation Inventory. The submarine canyons offshore are thought to be hoki (*Macruronus novaezealandiae*) spawning areas (6).

Cultural: This site has high scenic and recreational values as a wilderness landscape (1,4), and high educational values, both to the general public and universities, in the field of geology and biology (1,2,3).

Historical: There are eight archaeological sites of Maori origin in the area, including a pa site, karaka groves, and a site where a fishhook was found in a cave (HPT). The site is also famous for a long sheep drive around this landmark from the Wairarapa Plains to Wellington Province during colonial times. This sheep drive was recently re-enacted as part of the region's Sesquicentennial celebrations (1840-1990).

Site Importance: International National Regional Local Unknown

Comment: The site is listed as being of national importance in the Geopreservation Inventory and other publications (1,2,3,4) because of the geological formation (raised beaches), and high ranking in SSWI (Sites of Special Wildlife Interest) due to the habitat quality for wildlife.

Existing Threats: c,d,k

Type & Comment: Threats include modification to plant communities by human activities (eg. trampling) and stock grazing of pingao, which allow invasive exotic plants to gain a foothold (1), Fire (5) (due to drought), and the use of recreational vehicles on native plant communities are also considered to be threats to natural values (1,5).

Human Modification and Human Use: a,h,k

Type & Comment: The surrounding land has been developed for farming, and some shoreland based recreation occurs. This includes walking, fishing and snorkelling. Some gravel mining and boulder removal (for reclamation) has occurred previously, but was halted in 1970 (1,3). Some diving and fishing has occurred in the region (pers. obs.).

Existing Protection: a

Type & Comment: Turakirae Head is totally protected as a Scientific Reserve (128ha). Because of the remoteness of the site however, there is little protection against harmful human activities. Nearby is Rimutaka Forest Park.

Availability of Information:

Natural	①	2	3
Cultural	1	②	3
Historic	1	②	3
Threats	1	②	3
Human Mod. & Use	1	②	3

1. Well documented
2. Limited information (general)
3. Little information (if any)

Comment:

Sources of Information:

Natural	①	2	③	4	5	6	7
Cultural	①	2	③	4	5	6	7
Historic	①	2	3	4	5	6	7
Threats	①	2	3	4	5	6	7
Human Mod. & Use	①	2	③	4	5	6	7

1. Derived info. from existing literature & databases
2. Derived info. as above & field check
3. Derived from existing maps & aerial photographs
4. Recent DOC survey including sampling & analysis
5. Recent DOC survey excluding sampling & analysis
6. Experience
7. Expert opinion

Comment:

1. Anon. 1984. Biological Resources of the Wellington Region. Wellington Regional Council, QEII Trust and NZ Biological Resources Centre.
2. Turner, M. 1985. Geological Features of the Wellington Region. Wellington Regional Council, Wellington. 72pp.
3. Homer, L.; Moore, P. 1989. Reading the Rocks: A guide to geological features of the Wairarapa Coast. Landscape Publications, Wellington. 64pp.
4. Parrish, G.R. 1984. Wildlife and Wildlife Sites of the Wellington Region. NZ Wildlife Service Faunal Survey Unit Report No 38.
5. Bagnall, R.G. 1974. Vegetation of the Raised Beaches at Cape Turakirae, Wellington, New Zealand. NZ J. Botany. 13:367-424.
6. Murdoch, R.C. and Chapman, B.E. 1989. Occurrence of Hoki (Macruronus novaezealandiae) eggs and larvae in eastern Cook Strait. NZ J. Marine and Freshwater Research. 23:61-67.
7. R.A. Empson, SCO DOC, Wellington (pers. comm.).

Recorded on Existing Databases:

Comment:

1. WERI - No listings
2. SSWI - Turakirae Head High value (1982)
3. PNA - Scientific Reserve, 128ha (1984)
4. Geopreservation - Turakirae Head National value (1989)
5. HPT County Inventories - 8 archaeological sites, (1984)
6. Other
7. None

Other Considerations:

Accompanying Maps
and Photographs:

Site Name: Lake Wairarapa Wetlands

Site No: 09 / 0019

Recorders Names: Peter J. Moore / Hugh A. Robertson

Conservancy: Science & Research Division /
Wellington Conservancy

Map/Grid Ref: NZMS 260 S27 26980 59960

Date: 13 March 1990

Brief Description of Site: Lake Wairarapa and its adjacent wetlands, including Lake Onoke, form the largest wetland complex in the southern half of the North Island. Lake Wairarapa is shallow (less than 2.5m deep), 18km long by 6km, with a surface area of 7800ha. It is a freshwater lake, but there has been a saline influence in the south from brackish water in the lower Ruamahanga River. The northern and western shores slope quickly into deep water. The eastern shore has large areas (about 400ha) of marshland and sandflats, which are exposed by up to 1km by fluctuating water levels. This shoreline has been formed and modified by river sediments and wind-induced wave action. Extensive areas (about 900ha) of ponds and swampland lie adjacent to the northern and eastern shores, particularly J.K. Donald Reserve, Matthews Lagoon and Boggy Pond (1). Lake Onoke (650 ha) is a brackish lake at the mouth of the Ruamahanga River. The lake is separated from the sea by a 3 km shingle spit, which is cut artificially for flood control purposes, or is naturally breached by rising lake levels or high seas. The outlet is frequently blocked by southerly sea conditions. Only about 12% of the former lakeshore, pond and swampland area in the lower Wairarapa region now remains. The wetlands are surrounded by private farmland, and water levels in the lake are controlled by barrage gates operated by the Wellington Regional Council in accordance with the National Water Conservation (Lake Wairarapa) Order 1989.

Conservation Values:

Natural: a, b, c, d, e, f, g, h

Cultural: a, b, c, d

Historic: a, b, d

Comment:

Natural: Although many parts of the edges of the wetland system have been modified, the large size, habitat diversity (including many natural communities) and near continuum from open lake-marshland-pond, make the wetlands of major importance in terms of wildlife habitat and in terms of a dwindling resource. The wetlands are representative habitats, being the largest shallow freshwater lake, and largest wetland system, in the southern North Island (1). Unique and fragile native turf communities are found on the eastern shore flats and pond beds, which are exposed at low water levels. Some plant species are rare locally or nationally (2,3), e.g. *Crassula ruamahanga* is "rare" and *Mazus pumilio* is "vulnerable" (4). The value of the wetlands is closely related to the water regime in Lake Wairarapa, e.g. native turfs are very sensitive to changing patterns of water pollution. Jointed rush *Leptocarpus similis* communities at the south end of the lake have been formed as a result of past, and occasional present, saline influences. There are unusual old dune systems which extend up to 3km from the eastern shore, which are probably the only major lake dunes in New Zealand (pers. obs.).

The wetlands are a habitat for rare and endangered fish species (e.g. Giant kokopu *Galaxias agentus* and brown mudfish *Neochanna apoda*) and Lake Onoke is an important feeding site for marine fish and breeding area for *Galaxias* species (5). The wetlands also harbour significant populations of threatened bird species (e.g. NZ dabchick *Podiceps rufopectus*, bittern *Botaurus stellaris*, banded dotterel *Charadrius bicinctus*) and rare species (eg. variable oystercatcher *Haematopus unicolor*, golden plover *Pluvialis fulva*, sharp-tailed sandpiper *Calidris acuminata*). The eastern shore of Lake Wairarapa is a major feeding/roosting site for large numbers of waders (pied stilts *Himantopus*, banded and black-fronted dotterels *Charadrius melanops*, golden plover, sharp-tailed sandpiper, variable oystercatcher) and waterfowl (black swan *Cygnus atratus*, NZ shoveler *Anas rhynchos*, grey teal *A. gibberifrons*, mallard *A. platyrhynchos*, paradise shelduck *Tadorna variegata*). Pond systems are important breeding areas for waterfowl and wetland species such as dabchick, bittern, spotless crane *Porzana tabuensis* and marsh crane *P. pusilla*. Lake Wairarapa is an important moulting site for waterfowl. Lake Onoke Spit is an important breeding site for two threatened species, the Caspian Tern *Hydroprogne caspia* and the banded dotterel (pers. obs.). The wetlands meet the IUCN criteria for classification as a wetland of international importance to birds, as they support more than 20,000 waterfowl in autumn, and regularly support more than 1% of the national populations of at least 12 species

(1, pers. obs.). The wetlands are considered "outstanding" for native fisheries values (5) and very important for native turf communities (3). Habitat use by wetland birds of the eastern shore and ponds was studied in 1982-83 (1). Wader numbers on the north-eastern shore have been studied from 1984-90 (pers. obs.)

Cultural: Many traditional values of the site date back to Kupe's time. The lakes were the fishing preserve of many hapu, each having their fishing and hunting areas and eel-weirs. Lake Onoke was one of the major eel fishing sites in the North Island especially when its exit to the sea was blocked. Many settlements dotted the shores of these wetlands (6). Other values include the open spaces of the shores and the distinctive dune systems also have high landscape values.

Historic: Archaeological sites of Maori origin include remains of ovens between the lakes and several urupa are known near Lake Onoke (HPT Inventory). There is a long European history in the area, with a ferry providing a link between Wairarapa and Wellington at Lake Ferry, at the outlet of Lake Onoke (6). At least 15 ships have been wrecked in Palliser Bay, mostly during the 1800s (7).

Site Importance: International National Regional Local Unknown

The wetlands meet the IUCN criteria for classification as of international importance to birds (1), are "outstanding" for native fisheries (5) and nationally important for turf plant species (3).

Existing Threats: a, b, c, d, f, g, k

Type and Comment: The lake is subject to regular flooding, wind-induced erosion, siltation and water quality changes from the Tauherenikau and Ruamahanga Rivers. Stabilisation and artificiality of water level fluctuations, and lowering of the lake level, threaten the natural vegetation associations on the lake shore and allow the invasion of exotic plants. Possums *Trichosurus vulpecula* and red deer *Cervus elaphus* are throughout the wetlands, especially in areas of willow and alders, and in remaining pockets of tall native vegetation. Farm stock and horses have access to parts of the eastern shore and some ponds; this causes pugging and disturbance to marsh turfs but may help to reduce the growth of exotic grasses and weeds and associated sediment trapping. There have been previous plans to drain the eastern shore for farmland. Artificial stopbanks, in one case incorporating old car bodies, have been created to protect farmland in some areas. Channelling of tributaries has altered the patterns of sedimentation. Control gates at the lake outlet have changed the natural water regime and limited the back-flow of brackish water from the lower Ruamahanga River. Artificial cuts are made periodically in Lake Onoke Spit to release water from the lakes. Driving of mobile maimais and four-wheel drive vehicles damages wetland plant communities and disturbs wildlife. Disturbance to non-target species occurs during the duck-shooting season and noise pollution is also created by hovercrafts (1, pers. obs.).

Human Modification and Human Use: a, b, d, f, h, i, j

Type and Comment: The outlet of Lake Wairarapa is controlled by barrage gates. The lake is used by the Wellington Regional Council as a reservoir to divert floodwaters from the Ruamahanga River through the Oporua Floodway, and protect farmland. The water level regime is a combination of natural processes and artificial control. About 90% of the lakeshore and some ponds are grazed by farm stock. Small drainage channels affect water regimes in some wetlands. About 50 ha of farmland has been reclaimed from the lake shore using stop-banks. The major recreation on the lake and ponds is duck-shooting. Permanent hides are present. Fishing, picnicking and camping occur mainly on the western and northern shores. Horse riding (recreational and commercial trekking) occurs on the eastern shore and J.K. Donald Reserve. Ornithological and botanical study is conducted on the eastern shore and wetlands. On the lake itself, fishing, some eel trapping, yachting, power-boating and hovercrafting occurs, and there is a small wharf near the yacht club at the north end of the lake. Lake Onoke is used by many recreational fishermen, especially when the outlet is open. A camping ground is on the eastern shore (1, pers. obs.).

Existing Protection: a, b, c, f, g

Type and Comment:

Crown land : DoC stewardship (Lakes Wairarapa and Onoke and linking Ruamahanga River 9278 ha,
Wairio Ponds 1140 ha,
J.K. Donald Reserve 304 ha);

Wildlife Management Reserves (Allsops Bay 348 ha, Ruamahanga Cut 52 ha, Boggy Pond 160 ha,
Matthews Lagoon 236 ha);

Scenic Reserves (Wairarapa Lake Shore 27 ha);

Regional Body: Soil Conservation Reserve : Oporua Floodway c40 ha.

Local Body: Recreation Reserves (Landing Place 4 ha, Lake Wairarapa Domain c100 ha).

Voluntary Protection: Fish and Game Council (Simmonds Lagoon 50 ha),

-Ducks Unlimited (Pearce Wetlands 70 ha).

Private Protection: QEII National Trust covenants on Home Lagoon c20 ha, and Lake Ponui 70ha.

Availability of information:

Natural ① 2 3

Cultural 1 ② 3

Historic 1 ② 3

Threats ① 2 3

Human Mod. & Use ① 2 3

1. Well documented

2. Limited information (general)

3. Little information (if any)

Sources of Information:

Natural 1 ② 3 ④ 5 ⑥ ⑦

Cultural 1 ② 3 4 5 ⑥ 7

Historic ① 2 3 4 5 6 7

Threats 1 ② 3 4 5 ⑥ 7

Human Mod. & Use 1 ② 3 4 5 ⑥ 7

1. Derived info. from existing literature & databases

2. Derived info. as above & field check

3. Derived from existing maps & aerial photographs

4. Recent DOC survey including sampling & analysis

5. Recent DOC survey excluding sampling & analysis

6. Experience

7. Expert opinion

Sources:

1. MOORE, P.J.; OGLE, C.C.; MOYNIHAN, K.T. 1984: Habitat requirements of wetland birds in the Lake Wairarapa wetlands. NZ Wildlife Service Occasional Publication No. 5. 282pp.

2. OGLE, C.C. 1989: The water regime at Boggy Pond, Lake Wairarapa. Science and Research Internal Report 51. DoC, Wellington.

3. OGLE, C.C.; MOSS, T.C. 1984: Lake Wairarapa - its natural values include plants. Forest and Bird 15 (1): 2-5.

4. WILSON, C.M.; GIVEN, D.R. 1989: Threatened plants of New Zealand. DSIR Publishing, Wellington. 151pp.

5. DAVIS, S.F. 1987: Wetlands of national importance to fisheries. NZ Freshwater Fisheries Report No. 90. MAFFish, Christchurch.

6. LEACH, B.F. 1983: The prehistory of the Southern Wairarapa. J. Roy. Soc. NZ 11(1): 11-33.

7. INGRAM, C.W.N. 1977: New Zealand shipwrecks 1795-1975. A.H. & A.W. Reed, Wellington. 464pp.

Recorded on Existing Databases:

1. WERI - Lake and Boggy Pond has national significance (1983)

2. SSWI - Lake Wairarapa, Boggy Pond, Matthews Lagoon had a "high" ranking (1983)

3. PNA -

4. Geopreservation - no sites listed (1989)

5. HPT County Inventories - 8 sites listed (1987)

6. Other - OSNZ National Wader Census (OSNZ News), Classified Summarised Notes (*Notomis*)

7. None

Site Name/s: Putangirua/Whatarangi

Site No: 09/0020

Recorders Name: Bruce Dix/Hugh Robertson

Conservancy: Wellington

Map/Grid Ref: NZMS 260 S28 26954 59695

Date: 6 May 1990

Brief Description of Site: Situated on the eastern side of Palliser Bay, this site, which includes a 2.5km forested valley and a 2.5km length of narrow coastal strip, backed by raised marine terraces up to 250m above sea level (1), is noted for its geological features of Putangirua Pinnacles and Whatarangi Bluff. Putangirua Pinnacles are the best example in New Zealand of "badlands" erosion and rock pillar formation, and are a spectacular tourist attraction (2). The Department of Conservation have a field centre, just north of Putangirua Stream and beach settlements occur at Ningnong Bay (30 baches) and just south of Whatarangi Stream (12 baches) (3). The coastal strip and marine terraces are extensively grazed (3). There are many former Maori sites here, including karaka (*Corynocarpus laevigatus*) groves (Historic Places Trust Inventory).

Conservation Values:

Natural: a,e,f,g

Cultural: a,b,c,d,e

Historic: b,c

Comment:

Natural: In places, there is considerable regenerating native vegetation, including an important stand of black beech (*Nothofagus solandri*) (4). There have been many historical fires, and also land clearance. The main items of interest are the unusual earth pillars up to 18m high at Putangirua(4) which are the best example of natural "badlands" erosion, in New Zealand (2), and the eroded 120m high bluffs at Whatarangi composed of thick beds of calcareous, blue grey sandy siltstone (5). Some fossil exposures at Whatarangi Bluff are of regional scientific importance (2). Green geckos (*Naultinus elegans*) have been recorded at Putangirua Pinnacles and common geckos (*Hoplodactylus maculatus*) at Whatarangi (Amphibian and Reptile Distribution Scheme).

Cultural: This area has been traditionally used by Maori with several signs of habitation including urupa with spiritual values (HPT Inventory). The Putangirua Valley and this coastline have high aesthetic, landscape and seascape values, and educational value for study of geological processes (pers. obs.)

Historic: This section of coastline has known historic values. Indications of former Maori settlement include a karaka or kopi grove at the site of the Department of Conservation's Te Kopi Field Centre, a pa near the mouth of Putangirua Stream, an urupa just north of Te Ika Pakeke Stream, pits on the south bank of Putangirua Stream and a pa site on the top of the cliffs south of Te Kopi Stream (HPT Inventory). In the 1840's a Maori fishing village was situated at Te Kopi (Ningnong Bay), as was John Wade's whaling station (6,7). A projecting point provided good shelter to the bay and large ships (400-500 tons) used to pick up cargoes of wool, but this point has since eroded away (6,7).

Site Importance:

International

National

Regional

Local

Unknown

Comment:

Geological features of "badlands" are of national importance (2) and the Palliser Bay section is regarded as being of regional importance for fossils (6).

Existing Threats: a,g

Type & Comment:

Erosion here is natural, but may be exacerbated by human activities and introduced browsing mammals such as sheep. Some shore stabilisation works, including walls and groynes near baches in Ningnong Bay, 5 large groynes at the southern end of Ningnong Bay, 4 large groynes at the foot of Whatarangi Bluff and concrete slabs and tyre barricades at Whatarangi settlement will affect natural patterns of erosion and accretion (3).

Human Modification and Human Use: a,h,i

Beach settlements exist at Ningnong Bay and Whatarangi and the whole section of coast is farmed (3). A road runs the length of this coastline and cuts through Whatarangi Bluff, with benching above the road to reduce erosion (3). At this site there is mainly shorebased recreation, and some fishing and diving but this depends on sediment discharge from erosion (5).

Existing Protection: a,c,d

Type & Comment:

DOC: Scenic reserve (116ha) at Putangirua Pinnacles, and the Haurangi Forest Park (19382ha) adjoins the northern part of the site.

Local: Recreation reserve at Whatarangi Bluff, esplanade reserve.

Protective Zone: This section of coastline has been closed to commercial paua harvesting since 1972 (7).

Availability of Information:

Natural	①	2	3	1. Well documented
Cultural	1	2	③	2. Limited information (general)
Historic	①	2	3	3. Little information (if any)
Threats	①	2	3	
Human Mod. & Use	①	2	3	

Comment: Good geological and historical information, and moderate biological information is available. The Wairarapa District Coastal Resource Inventory (3) contains much useful literature and a good series of oblique aerial photographs to allow an assessment of natural values, threats and human modification and use of the site. This is held at the Wellington Conservancy Office.

Sources of Information:

Natural	①	②	③	4	5	⑥	7	1. Derived info. from existing literature & databases
Cultural	①	2	3	4	5	⑥	7	2. Derived info. as above & field check
Historic	①	2	3	4	5	6	7	3. Derived from existing maps & aerial photographs
Threats	①	2	③	4	5	⑥	7	4. Recent DOC survey including sampling & analysis
Human Mod. & Use	①	2	③	4	5	⑥	7	5. Recent DOC survey excluding sampling & analysis
								6. Experience
								7. Expert opinion

Comment:

1. King, L.C. 1930. Raised beaches and other features of the south-east Coast of the North Island of New Zealand. Trans. Proc. NZ Inst. 61:498-525.
2. NZ Landform Inventory : first approximation. 1989. Research School of Earth Sciences Occasional Paper No 4, Victoria University, Wellington. 99pp.
3. McAlpine, G. 1989. Wairarapa District Coastal Resource Inventory, Department of Conservation, Wellington. (Unpublished collection of scientific papers, database information, letters, and a series of oblique aerial photographs of the Wairarapa coast).
4. Wassilief, M.C.; Clark D.J.; Gabites, I. 1986. Scenic Reserves of the Lower North Island. Biological Survey of Reserves Series No. 14. Dept Lands and Survey, Wellington. 297pp.
5. Turner, G.A.; Carlin, WF; Neeson, MP 1985. Coastal Reserves Investigation and Proposals : Report on Featherston County. Dept Lands and Survey, Wellington. 52pp.
6. Adkin, G.L. 1955. Archaeological evidence of former native occupation of Eastern Palliser Bay. J Polynesian Society. 64:450-480.
7. Hayward, B.W.; Ward, B. 1989. Inventory of New Zealand Fossil localities of international, national and regional importance. 2nd edition. Geological Society of NZ. Unpubl. Report 89/1.

Recorded on Existing Databases:

Comment:

1. WERI
2. SSWI
3. PNA
4. Geopreservation - Putangirua Pinnacles regarded as of National Importance, (1989).
5. HPT County Inventories - Five archaeological sites listed in this area (1987)
6. Other
7. None

Other Considerations:

Accompanying Maps
and Photographs:

Site Name/s: Cape Palliser

Site No: 09/0021

Recorders Name: Geoff McAlpine/Bruce Dix/Hugh Robertson Conservancy: Wellington

Map/Grid Ref: NZMS 260 528 27000 59525

Date: 6 May 1990

Brief Description of Site: The Cape Palliser area, extending 25km from Woolshed Stream to Mataopera Stream is the most southern point of the North Island and is an exposed rugged coast which was cleared in the past by Maori and Pakeha and is currently extensively grazed (1). The coastal bench is a narrow unstable strip about 200m wide, with only occasional outcrops of rocky basement. The sediments are largely redeposited gravels of Aorangi Range or alluvial outwash from adjacent raised beaches (up to 300m above sea level) (1,2,4). Many of the rivers and streams do not flow right to the sea, except after heavy rain (2). Cape Palliser itself is of volcanic origin and over 100 million years old, and the surrounding area is of even older greywacke (3). The actual cape is Maori land. There are many sites of former Maori occupation (1, Historic Places Trust Inventory) along the coastal strip and up the Makotukutuku and Otakaha valleys.

The area is part of the area fished by the commercial crayfish fleet based at Ngawi. Additionally, it is one of the most popular dive sites in the Wairarapa (5).

Conservation Values:

Natural: b,c,e,f,g

Cultural: a,b,c,d,e

Historic: b,c,d

Comment:

Natural: Unusual volcanics and sandstone (with fossils) occur here in an otherwise greywacke landscape, and are exposed by downfaulting.(1,3) There is a long history of geological investigation in this area (3,4). There is a substantial fur seal (*Arctocephalus forsteri*) winter haulout site near Cape Palliser (Sites of Special Wildlife Interest). Rare endemic grass *Rytidosperma petrosum* and pingao (*Desmoschoenus spiralis*) can be found on some sand dunes in this area (6,7) occurs here (5). The common gecko (*Hoplodactylus maculatus*) and common skink (*Leiopisma nigripantare*) have been recorded at this site (Amphibian and Reptile Distribution Scheme).

Cultural: Much traditional knowledge and use of the area remains (8), and many old Maori sites are visible at either side of Cape Palliser, including pa, kainga, middens, stone walls, pits, sacred urupa, and karaka (*Corynocarpus laevigatus*) groves (HPT Inventory). Pingao fronds have a golden colour and it was a valued resource because it was used in the weaving of interior panels for meeting houses (11). Spiritual, aesthetic and scenic values are important, especially "Kupe's Sail" and the view to the South Island (pers. comm). Cape Palliser is used for educational lessons on geology (pers. obs.).

Historic: This section of coastline has many signs of former Maori settlement with 75 sites in the HPT Inventory, including 3 pa sites, 4 burial sites, 19 middens, numerous stone walls and pits, karaka groves, terraces, platforms, stone rows and garden soils (HPT Inventory, 1). The area has been subject to many detailed archaeological studies (1,2,9) and interpretation of prehistoric Maori life-styles. European settlement began in the 1840s with Pharazyn and Russell establishing sheep stations on the coast north of Cape Palliser (2). At least seven shipwrecks are known on this coast dating from the "Pickwick" in 1845 to the "Quest" in 1975. The Cape Palliser lighthouse was first built in 1897 (Marine Division, Ministry of Transport pers. comm.).

Site Importance:

International

National

Regional

Local

Unknown

Comment:

This is a site where two nationally rare, endemic plants occur; *Rytidosperma petrosum* & Pingao.

The Wairarapa district is dotted with regionally important geological anomalies, such as volcanic Cape Palliser, on an otherwise greywacke landscape (3). The well documented pre-history of the area (1,8,9) is exceptional and the density of the archaeological sites is high compared with elsewhere on the Wairarapa Coast (pers. obs.).

Existing Threats: a,b,d,e,i,j

Type & Comment:

Land was cleared by both Maori and Pakeha (1) which probably accelerated the rate of erosion of the raised marine terraces; this is particularly dramatic at the eastern boundary of the site at Mataopera Stream (2). Accelerated shingle fan activity has been documented at the Pararaki in the 12th and 13th centuries, at Te Humenga in the early 13th century, at Whatarangi after the 15th century and at Waiwhero in the 16th century. The raised sediment load of these rivers has wiped out sensitive filter-feeding shellfish such as mussels and tuatua which occurred in archaeological remains before AD 1400 (1). The introduction of pest mammals and farming in European times has probably maintained this accelerated erosion. Small fishing boats are launched off the beach by tractor- or bulldozer-towed cradles (2); this could cause damage to the beach. Some sewage, crayfish waste and refuse dumping occurs along this coast (pers. obs.)

Human Modification and Human Use: a,d,e,h,i

The coastal strip was cleared early in the millennium, but revegetated around 1600AD when the area was depopulated, and then cleared again by European farmers in the mid 1800s (1), scattered farm houses and baches along all of this coast with the township of Ngawi having about 60 houses. A crayfish factory is situated about 1km north of Ngawi. A commercial crayfish fleet is based at Ngawi where about 20 boats are pulled up onto the beach by tractor- or bulldozer-towed cradles (2). A small pipeline crosses the coast straight out from Ngawi crayfish factory (2). People walk, fossick, camp and study nature along this coast, and it is a very popular diving and fishing spot (pers. obs., 5).

Existing Protection: a,c,d,i

Type & Comment:

National: Kupe's Sail Rock is a DOC Recreation Reserve (6ha), The Haurangi State Forest Park (19382 ha) adjoins the site and includes the headwaters of many of the larger rivers flowing out to the coast. A Lighthouse Reserve (20ha) surrounds Cape Palliser Light.
Local Body: Esplanade reserves cover 6km of coastline in four sections.

A private Maori (Makakitahi) Reserve (20ha) extends from Cape Palliser to Black Rocks - this was designated as a Maori fishing reserve in 1947 and is tapu to Maori people, but this has not been respected by pakeha (8).

Protective Zoning: The 20km section of coast from Woolshed Stream to Cape Palliser has been closed to commercial paua harvesting since 1972 (10) and no commercial seaweed harvesting is permitted within 1 nautical mile of Cape Palliser Lighthouse (11).

Availability of Information:

Natural	①	2	3	
Cultural	①	2	3	
Historic	①	2	3	
Threats	①	2	3	
Human Mod. & Use	①	2	3	

1. Well documented
2. Limited information (general)
3. Little information (if any)

Comment: Good geological and historical information, and moderate biological information is available. The Wairarapa District Coastal Resource Inventory (2) contains much useful literature and a good series of oblique aerial photographs to allow assessment of the natural values, threats and human modification and use of the site.

Sources of Information:

Natural	①	②	③	4	5	⑥	⑦	
Cultural	①	2	3	4	5	6	⑦	
Historic	①	2	3	4	5	6	⑦	
Threats	①	2	③	4	5	⑥	⑦	
Human Mod. & Use	①	2	③	4	5	⑥	⑦	

1. Derived info. from existing literature & databases
2. Derived info. as above & field check
3. Derived from existing maps & aerial photographs
4. Recent DOC survey including sampling & analysis
5. Recent DOC survey excluding sampling & analysis
6. Experience
7. Expert opinion

Comment:

1. Leach, B.F. 1983. The prehistory of the Southern Wairarapa. J. Roy Soc. NZ 11(1):11-33
2. McAlpine, G. 1989. Wairarapa District Coastal Resource Inventory. Department of Conservation, Wellington. (Unpublished collection of scientific papers, database information, letters, and a series of oblique aerial photographs of the Wairarapa coast).
3. Wellman, H.W. 1954. A note on the geology of Cape Palliser, New Zealand (Sheet N168). NZ J. Sci. Tech. Section B 35:440-450.
4. King, L.C. 1930. Raised beaches and other features of the south-east coast of the North Island of New Zealand. Trans. Proc. NZ Inst. 61:498-525.
5. G.Brogden. Wairarapa Dive Club (pers. comm.)
6. Tim Harington, Conservation Officer, Masterton, (pers. comm.)
7. Elspeth Waghorn, Marine Ecologist, CRI Taskforce, Department of Conservation, Wellington. (pers. comm.)
8. Mita Carter, Ngati Kahungunu, in litt. (In ref. (2)).
9. Adkin, G.L. 1955. Archaeological evidence of former native occupation of eastern Palliser Bay. J Polynesian Soc. 64:450-480.
10. Petherick, C. 1987. Preliminary paua survey of the Wairarapa Coast. MAFFish Internal Report 87/2.
11. Ruth Marsh, Scientist, MAFFish, Napier. in litt. (in ref. (2)).

Recorded on Existing Databases: Comment:

1. WERI
2. SSWI - Moderate-high ranking at Cape Palliser because of seal haulout (1983/84). Moderate ranking just north of Waiwhero Stream where Red-billed gulls (Larus novaehollandiae) breed (1983/84).
3. PNA
4. Geopreservation - No sites (1989)
5. HPT County Inventories - 75 sites designated (1987)
6. Other - Amphibian and Reptile Distribution Scheme - 2 records (1988)
7. None

Other Considerations:

Accompanying Maps
and Photographs:

Site Name/s: White Rock/Opouawe Estuary/Oroi

Site No: 09/0022

Recorders Name: Bruce Dix/Hugh Robertson

Conservancy: Wellington

Map/Grid Ref: NZMS 260 S28 27110 59572

Date: 7 May 1990

Brief Description of Site: Situated 10km north east of Cape Palliser, White Rock is the remnant of a large sheet of limestone some 50 - 60 million years old (1). Similar remnants are at nearby Te Kaukau Point, albeit not as spectacular. Faulting has inclined the sheet to a high angle, or folded it completely over (2). This 16km stretch of coast from near Te Rakauwhakamatuku Point to Pukemuri, including the lower Opouawe Valley, was a site of much Maori activity. The coastal bench is about 400m wide near the Opouawe River, and from Te Kaukau Point to the Awha River. The sediments are largely redeposited gravels from the Aorangi Range, the Rough Hill - Stony Creek area, and from alluvial fans from coastal hills (2). Holocene marine beach ridges are a particularly obvious feature near White Rocks, east of Te Kaukau Point, and near Pukemuri Stream (2,3). Many of the rivers and streams do not flow right to the sea except after heavy rain - even the Opouawe River often has its exit blocked by gravel banks (pers. obs). Land has been cleared for pastoral farming. Roads or farm tracks traverse all but 5km of this coastline, but they are generally over 200m in from the coast.

Conservation Values:

Natural: a,e,f,g

Cultural: a,c,d,e

Historic: b,d

Comment:

Natural: This coast retains a high degree of naturalness because of its isolation, despite road access (pers. obs.). The geological features and processes of this site have been closely studied (1,3,4) with the unusual tilted sheet of limestone (White Rocks) attracting attention, as well as a clear representative sequence of raised marine beach ridges from the Holocene period. The estuaries, being frequently blocked off from the sea, have little wildlife values, but Black-fronted Dotterels (*Charadrius melanops*), a recent colonist to New Zealand, and Pied Stilts (*Himantopus himantopus*) breed on the lower stretches of the Opouawe River and visit the estuaries for some of their feeding (pers. obs.). Common gecko (*Hoplodactylus maculatus*), common skink (*Leiopisma nigriplantare*) and spotted skink (*L. lineocolatum*) occur at this site (Amphibian and Reptile Distribution Scheme).

Cultural: There is a long history of Maori occupation of this site with many pa and kainga, including named fishing spots and rahui areas (near White Rock), and waiata and legends refer to deep sea fishing voyages, and journeys to Wharekauri (Chathams) from Oro, the main settlement of Hinewaka (5). Scenic and landscape values are most obvious at White Rock, with its white limestone rocks projecting into the sea (pers. obs.).

Historic: This area has many known Maori archaeological sites, with 40 listed on the Historic Places Trust Inventory including 4 pa, many pits, walls, terraces, middens and ovens, and one dendroglyph. Also 2 urupa are marked on the cadastral map near Oro Station. The first European settlement of the area was in 1847, when Barton leased a block of land off some of the local Maori (2). The "Opua", shipwrecked near Te Oro Station in 1926, is still visible today (2), and two ships, the "Lizzie Guy" (1888) and the "Delmira" (1896) were wrecked at Te Kaukau Point (6).

Site Importance:

International

National

Regional

Local

Unknown

Comment:

Given the combination of unusual geological features (1), sea erosion processes (4) and high concentration of archaeological sites, this area is of regional importance.

Existing Threats: a,b,i

Type & Comment:

The shoreline in the Ngapotiki - Te Kaukau Point area is retreating quickly with sea erosion of conglomerate cliffs at the foot of a shingle fan near Te Rakauwhakamatuku Point retreating at 3.45m/year, the fastest rate of any cliff erosion recorded in New Zealand (4). White Rock beach retreated 20m between 1944 and 1973 (4). The land in the headwaters of the Opouawe and Whawanui Rivers is very actively eroding, especially in the Aorangi Range and Rough Hill areas and the shingle beds of these rivers have grown substantially and this erosion debris is reaching the coast (pers. obs.). Small fishing boats are launched from tractor or bulldozer-towed cradles at White Rock and Oro Stream (1) and this damages natural and aesthetic values of the beach (pers. obs.).

Human Modification and Human Use: a,d,h,i,j

Land has been cleared for pastoral farming. Roads or farm tracks traverse all but 5km of this coastline, but they are generally over 200m in from the coast. Small fishing boats are launched from tractor- or bulldozer-towed cradles at White Rock and Oro Stream (2). Picnicking, camping (White Rock), tramping, fossicking, fishing and diving are popular recreational pursuits (pers. obs.). Traditional fishing is suggested by a nearby Rahui area.

Existing Protection: a,c,h,i

Type & Comment:

DOC Stewardship: One minute (60 sq.m.) and inadequate area north of Te Kaukau Point.

Local: Recreation Reserves at Te Rakauwhakamataku (50ha), Esplanade Reserve for 6km of the coastline south from Pukemuri, where it adjoins the DOC Awhea Recreation Reserve (15ha).

Rahui area near White Rocks. Maori reserve: Opuawe Reserve (5ha).

Availability of Information:

Natural	①	2	3	1. Well documented
Cultural	①	2	3	2. Limited information (general)
Historic	①	2	3	3. Little information (if any)
Threats	①	2	3	
Human Mod. & Use	①	2	3	

Comment:

Good geological and historical information available. The Wairarapa District Coastal Resource Inventory (2) contains much useful literature and a good series of oblique aerial photographs to allow assessment of natural values, threats and human modification and use of the site.

Sources of Information:

Natural	①	②	③	4	5	⑥	7	1. Derived info. from existing literature & databases
Cultural	①	2	3	4	5	6	⑦	2. Derived info. as above & field check
Historic	①	2	3	4	5	6	⑦	3. Derived from existing maps & aerial photographs
Threats	①	2	③	4	5	⑥	7	4. Recent DOC survey including sampling & analysis
Human Mod. & Use	1	2	③	4	5	⑥	7	5. Recent DOC survey excluding sampling & analysis
								6. Experience
								7. Expert opinion

Comment:

1. Homer, L. Moore, P. 1989. Reading the rocks - a guide to geological features of the Wairarapa Coast. Landscape Publications, Wellington. 64pp.
2. McAlpine, G. 1989. Wairarapa District Coastal Resource Inventory. Department of Conservation, Wellington. (Unpublished collection of scientific papers, database information, letters, and a series of oblique aerial photographs of the Wairarapa coast).
3. King, L.C. 1930. Raised beaches and other features of the south-east coast of the North Island of New Zealand. Trans. Proc. NZ Inst. 61:498-525
4. Gibb, J.G. 1978. Rates of coastal erosion and accretion in New Zealand. NZ.J. Marine and Freshwater Res. 12(4): 429-456.
5. Mita Carter, Ngati Kahungunu, in litt. (In ref. 2).
6. Turner, G.A.; Carlin, W.F.; Neeson, M.P. 1985. Coastal Reserves Investigation and Proposals Featherston County. Department of Lands and Survey, Wellington. 51pp.

Recorded on Existing Databases: Comment:

1. WERI - Insufficient information (1985)
2. SSWI - No sites identified (1984)
3. PNA
4. Geopreservation - No sites (1989)
5. HPT County Inventories - 40 sites listed (1987)
6. Other - Amphibian and Reptile Distribution Scheme - 3 records (1988)
7. None

Other Considerations:

Little scientific knowledge of Marine environment here (pers. obs.).

Accompanying Maps and Photographs:

Site Name/s: Tora/Awhea River Estuary

Site No: 09/0023

Recorders Name: Bruce Dix/Hugh Robertson

Conservancy: Wellington

Map/Grid Ref: NZMS 260 S28 27202 59639

Date: 7 May 1990

Brief Description of Site:

A 2km stretch of coast from Awheaiti Stream to the Awhea River comprises a 400m wide farmed coastal bench of largely redeposited gravels from the Aorangi Range and Tora Hills with several raised beach ridges still visible just south of the Awhea River (1,2). The Awheaiti Stream and Awhea River do not always flow right to the sea because they are impeded by gravel banks built up in south-easterly conditions (1). Little human modification occurs in this section of coast apart from grazing on the coastal bench and 6-7 houses and sheds (1). A road traverses the 2km length of coast 30-300m from the coast and a large concrete bridge crosses the Awhea River 500m from its mouth (2). A small patch (10ha) of coastal forest remains on the escarpment between the two rivers (1). The Awhea River estuary is small and sometimes tidal - shingle banks upstream from the road bridge provide feeding sites for birds (pers. obs.).

Conservation Values:

Natural: a,b,d,f

Cultural: c

Historic: b

Comment:

Natural: The patch of coastal forest (10ha) on the escarpment at Tora is an unusual natural habitat on the south-east Wairarapa coast because most coastal forest has been cleared. The vegetation and wildlife of this patch are not known unless it was the ngaio-karaka-mahoe forest referred to in the "Sites of Special Wildlife Interest" database as being heavily grazed. The coastal bench and rivers are typical of this coastline. A common skink (*Leiopisma nigriplantare*) has been recorded at Awhea estuary (Amphibian and Reptile Distribution Atlas). Rare Variable Oystercatchers (*Haematopus unicolor*) have been recorded here. (SSWI). A very small (10sqm) patch of rare pingao (*Dismoschoenus spiralis*) is on otherwise marram (*Ammophila arenaria*) covered dunes (pers. obs.).

Cultural: The coastal forest provides a unique landscape feature on this coast and the seascape is an almost continuous gravel beach, rather than rocky-fringed as elsewhere (1).

Historic: Only 2 archaeological sites (terraces and pits) are known from this area (Historic Places Trust Inventory), but 3 pa existed within 3km to the south (see 09/0022).

Site Importance:

International

National

Regional

Local

Unknown

Comment:

Known conservation values are of local importance (pers. obs.) The coastal forest could be of regional importance but no positive field checks have been carried out. Very few archaeological sites are known from this area, despite many sites to the north and south - the lack of rocks fringing the beach may mean fewer marine resources would have been available.

Existing Threats: a,b,d,m**Type & Comment:**

Land clearance in the hinterland, especially in the Stony Creek area has hastened erosion and the Awhea River is now carrying much more gravel and silt in its bed in its upper reaches and so water quality in the river is reduced and the sea is cloudy with sediment (1). Tora Bay has been identified as a site for concentrated collection of seaweed (*Pterocladia* spp.) to produce agar, because there are significant beds just offshore and much gets washed ashore: this removal of seaweed could disrupt local nutrient cycling (3). SSWI surveys identified grazing by farm stock as damaging vegetation in the one bush patch visited.

Human Modification and Human Use: a,h,i,j

Little human modification occurs in this section of coast apart from grazing on the coastal bench and 6-7 houses and sheds (1). A road traverses the 2km length of coast 30-300m from the coast and a large concrete bridge crosses the Awhea River 500m from its mouth (2). Traditional collection of seaweed along the high tide line is common at Tora (3). Beach-walking, fossicking and swimming takes place in and near the Awhea estuary (4). This is a good surfing beach, especially in northerly conditions (4).

Existing Protection: a,c

Type & Comment:

DOC: Recreation Reserve at Awhea (15ha)

Local: Esplanade Reserves adjoin both ends of the Awhea Recreation Reserve

Availability of Information:

Natural	①	2	3
Cultural	1	2	③
Historic	1	②	3
Threats	①	2	3
Human Mod. & Use	①	2	3

1. Well documented
2. Limited information (general)
3. Little information (if any)

Comment:

Some historical information is available, but it is not clear if low density of Maori archaeological sites reflects lack of sites, intensity of modification, or lack of search effort. The Wairarapa District Coastal Resource Inventory (2) contains much useful literature on the area and a good series of oblique aerial photographs to allow assessment of natural values, threats and human modification and use of the site.

Sources of Information:

Natural	①	②	③	4	5	⑥	7
Cultural	1	2	③	4	5	⑥	7
Historic	①	2	3	4	5	6	7
Threats	①	2	③	4	5	⑥	7
Human Mod. & Use	①	2	③	4	5	⑥	7

1. Derived info. from existing literature & databases
2. Derived info. as above & field check
3. Derived from existing maps & aerial photographs
4. Recent DOC survey including sampling & analysis
5. Recent DOC survey excluding sampling & analysis
6. Experience
7. Expert opinion

Comment:

1. McAlpine, G. 1989. Wairarapa District Coastal Resource Inventory. Department of Conservation, Wellington. (Unpublished collection of scientific papers, database information, letters, and a series of oblique aerial photographs of the Wairarapa coast).
2. King, L.C. 1930. Raised beaches and other features of the south-east coast of the North Island of New Zealand. Trans. Proc. NZ Inst. 81:498-525.
3. Fraser, B.; Hughey, K.G.; Pearson, P. 1987. An ecological assessment of seaweed harvesting from beaches of the Wairarapa coastline. Wildlife Service Report, Christchurch. 35pp.
4. Turner, G.A.; Carlin, W.F.; Neeson, M.P. 1985. Coastal Reserves Investigation and Proposals: Featherston County. Department of Lands and Survey, Wellington. 51pp.

Recorded on Existing Databases:

Comment:

1. WERI - Yes, insufficient information (1985)
2. SSWI - No sites identified (1984)
3. PNA - No sites, (1984)
4. Geopreservation - No sites (1989)
5. HPT County Inventories - 2 Sites listed (1987)
6. Other - Amphibian and Reptile Distribution Scheme - one record (1988)
7. None

Other Considerations:

Accompanying Maps
and Photographs:

Site Name/s: Oterei River Mouth or Te Awaiti

Site No: 09/0024

Recorders Name: Bruce Dix/Hugh Robertson

Conservancy: Wellington

Map/Grid Ref: NZMS 260 S28 27252 59660

Date: 7 May 1990

Brief Description of Site:

This is a 1km stretch of farmed coast either side of a small river estuary on the south east Wairarapa coast in a small south-facing bay (1). The Oterei River has its headwaters in steep scrub-clad coastal hills that reach 527m. The rivermouth is often blocked by a shingle bar and so water backs up 300+m. Te Awaiti Station is just upstream from the estuary and 5-6 cottages are in the bay, and a road traverses the whole length of this site.

Conservation Values:

Natural: b,d,f

Cultural:

Historic: b

Comment:

Natural: The Oterei River catchment is partially modified for agriculture but much is covered with scrub or forest. The site was listed on the Wetlands of Ecological and Regional Importance Register (WERI) as being of regional importance but it was not considered of sufficient value to rank in Sites of Special Wildlife Interest survey (SSWI). Rare Variable Oystercatchers (*Haematopus unicolor*) are listed in SSWI survey, and common gecko *Hoplodactylus maculatus* and common skink (*Leiopisma nigriplantare*) are here (Amphibian and Reptile Distribution Scheme). The small area of fragile dunes near the rivermouth are representative of many parts of this coast.

Cultural: No information.

Historic: 3 archaeological sites of Maori origin are known in this bay (Historic Places Trust Inventory): a possible pa site, terraces and a midden. In addition, oblique aerial photographs (1) show a grove of karaka (*Corynocarpus laevigatus*) at the western entrance of the bay, which often indicate the former occupation of the area by Maori.

Site Importance:

International

National

Regional

Local

Unknown

Comment:

This site is representative of many estuaries on this coast, but is of only local importance despite its WERI ranking (pers. obs.).

Existing Threats: i

Type & Comment:

Some damage to natural and aesthetic values of the beach are caused by launching fishing boats off the beach using tractor-towed cradles (1).

Human Modification and Human Use: a,d,h,i

Surrounding land has been cleared for pastoral farming and 5-6 houses and cottages are in the bay. A road and private farm tracks traverse the 2km length of this coast and a bridge crosses the estuary 400m from its mouth (1). Small fishing boats are launched from tractor-towed cradles (1). No information is available on recreational use of this site, but it is unlikely to be any different from other accessible parts of the coast, i.e. walking, fishing and diving.

Existing Protection: a,c,i

Type & Comment:

There is a Crown Reserve (Section 58) around part of the coast and a Local Body Esplanade reserve. Road reserve traverses the rest (a 2km length) of this site.

Availability of Information:

Natural	1	2	3
Cultural	1	2	3
Historic	1	2	3
Threats	1	2	3
Human Mod. & Use	1	2	3

1. Well documented
2. Limited information (general)
3. Little information (if any)

Comment:

The area is little known, apart from historic sites, but the Wairarapa District Coastal Resource Inventory (1) contains a good series of oblique aerial photographs which allows an assessment of natural values, threats and human modification and use of the site.

Sources of Information:

Natural	1	2	3	4	5	6	7
Cultural	1	2	3	4	5	6	7
Historic	1	2	3	4	5	6	7
Threats	1	2	3	4	5	6	7
Human Mod. & Use	1	2	3	4	5	6	7

1. Derived info. from existing literature & databases
2. Derived info. as above & field check
3. Derived from existing maps & aerial photographs
4. Recent DOC survey including sampling & analysis
5. Recent DOC survey excluding sampling & analysis
6. Experience
7. Expert opinion

Comment:

Most recent source:

1. McAlpine, G. 1989. Wairarapa District Coastal Resource Inventory. Department of Conservation, Wellington. (Unpublished collection of scientific papers, database information, letters, and a series of oblique aerial photographs of the Wairarapa coast).

Recorded on Existing Databases:

Comment:

1. WERI - Regional importance (1985)
2. SSWI - Headwaters of catchment listed 'moderate'. The estuary did not get a ranking (1985)
3. PNA
4. Geopreservation - no sites recorded (1989)
5. HPT County Inventories - 3 sites recorded (1987)
6. Other - Amphibian and Reptile Distribution Scheme - 2 records (1988)
7. None

Other Considerations:

Accompanying Maps
and Photographs:

Site Name/s: Pahaoa River Estuary

Site No: 09/0025

Recorders Name: Bruce Dix/Hugh Robertson

Conservancy: Wellington

Map/Grid Ref: NZMS 260 T28 27377 59755

Date: 7 May 1990

Brief Description of Site:

This site on the southeast coast of the Wairarapa, covers 5km of coastline around the Pahaoa River Estuary, and the final 2km of the Pahaoa River. The site is characterised by a largely farmed coastal platform up to 1km wide on either side of the estuary, with two small remnant patches of native trees near the foothills and 3 or 4 cottages or houses near the estuary. The shoreline is mainly coarse sand, but parallel sheets of tilted limestone running SW-NE form Kairingaringa Reef (south of Pahaoa River) and Glendhu Rocks, 3km to the north (1). The rare sedge, pingao (Desmoschoenus spiralis) is still very common on the natural dunes south of Kairingaringa Reef (1,2).

Conservation Values:

Natural: a,b,c,d

Cultural: c,d

Historic: b

Comment:

Natural: Dune areas are still natural and fragile, with the largest (2ha) relict 'stand' of rare pingao and spinnifex (Spinnifex hirsutus) on the Wairarapa Coast, sited just south of Kairingaringa Reef (2). Common gecko (Hoplodactylus maculatus), common skink (Leiopisma nigriplantare) and the spotted skink (L. lineoocelatum) have been recorded at the site. Rare Variable Oystercatchers (Haematopus unicolor), and threatened Banded Dotterel (Charadrius bicinctus) have been recorded at this site (Sites of Special Wildlife Interest register) and undoubtedly breed along the coast, and feed on the coast and in the Pahaoa River estuary.

Cultural: This site is a spiritually important site for Maori people, with signs of a sacred urupa (Historic Places Trust Inventory). Landscape features include dunefields and remnant forest on the coastal flats, and seascapes (pers. obs.).

Historic: 36 archaeological sites of Maori origin have been identified (HPT Inventory), including 3 pa, an urupa, pits, middens, karaka groves, a whare, and a possible quarry source at Glendhu rocks.

Site Importance:

International

National

Regional

Local

Unknown

Comment: The presence of a very large stand (2ha) of pingao on sand-dunes (1), presence of breeding threatened birds (SSWI), the largest estuary between Cape Palliser and Flat Point, and the many archaeological sites of Maori origin make this site regionally important.

Existing Threats: a,b,c,d,i

Type & Comment:

Sea erosion of cliffs is particularly noticeable directly ashore from Tokerau Reef, 1km south of this site, and much sediment is entering the sea (1). Pingao stands are threatened by marram (Ammophila arenaria) invasion, and grazing (2). Some damage to the natural and aesthetic values of beach and dunes is occurring where tractor-towed cradles are used to launch fishing boats at Kairingaringa Reef (1).

Human Modification and Human Use: a,d,h,i

The site has been mainly cleared for pastoral farming, although some shore vegetation appear to have had stock excluded (1). A small boat "harbour" appears (from aerial photographs in (1)) to have been cleared at the north side of Kairingaringa Reef, where fishing boats are launched from tractor-towed cradles (1). An area of dunes 100m from the high tide line has been cleared and flattened as a carpark and boat park. One beach cottage immediately north of the Pahaoa Estuary is very close to the shore, and two cottages are near the shore near the shore in the vicinity of Glendhu Rocks (1), and walking, swimming and diving are pursued at this site (3).

Existing Protection: i

Type & Comment:

Maori Reserve: small area immediately south of Pahaoa River mouth (2ha).

Availability of Information:

Natural	①	2	3	1. Well documented
Cultural	①	②	3	2. Limited information (general)
Historic	①	2	3	3. Little information (if any)
Threats	①	②	3	
Human Mod. & Use	①	2	3	

Comment: The Wairarapa District Coastal Resource Inventory (1) contains a good series of oblique aerial photographs which allow an assessment of natural values, threats and human modification and use of the site.

Sources of Information:

Natural	①	2	③	4	5	6	⑦	1. Derived info. from existing literature & databases
Cultural	①	2	3	4	5	6	7	2. Derived info. as above & field check
Historic	①	2	3	4	5	6	7	3. Derived from existing maps & aerial photographs
Threats	①	2	③	4	5	6	⑦	4. Recent DOC survey including sampling & analysis
Human Mod. & Use	①	2	③	4	5	6	7	5. Recent DOC survey excluding sampling & analysis
								6. Experience
								7. Expert opinion

Comment:

Main Source:

1. McAlpine, G. 1989. Wairarapa District Coastal Resource Inventory. Department of Conservation, Wellington.
 2. Tim Harington, CO DOC, Masterton (pers. comm.)
 3. Turner, G.A.; Carlin, W.F.; Neeson, M.P. 1985 - Coastal Reserves Investigation and Proposals : Featherston County. Department of Lands and Survey, Wellington. 51pp.
-

Recorded on Existing Databases:

Comment:

1. WERI - Not listed on Wellington Office Printout
 2. SSWI - Area visited, but site not ranked. Pingao not mentioned. (1985)
 3. PNA
 4. Geopreservation - no sites (1989)
 5. HPT County Inventories - 36 sites identified (1987)
 6. Other - Amphibian and Reptiles Distribution Scheme - 3 records (1988)
 7. None
-

Other Considerations:

Accompanying Maps
and Photographs:

Site Name/s: Honeycomb Rock/Kahu Rock

Site No: 09/0026

Recorders Name: Bruce Dix/Hugh Robertson

Conservancy: Wellington

Map/Grid Ref: NZMS 260 T28 27450 59791

Date: 8 May 1990

Brief Description of Site:

This 7km stretch of south-east Wairarapa Coast, extending from just south of Waihingata Stream to Glenburn Station includes a narrow coastal platform, 100-200m wide, but with three large flat points (1), on one of which is the 40m high Honeycomb Rock, named for the distinctive weathering pattern on its surface. Wind blown salt spray crystallises in the pores of the sandstone, and forces grains apart to form a honeycomb pattern (2). The land has been developed for pastoral farming and farm tracks extend for the whole length of this site. On the point below Honeycomb Light are 95 million year old tilted layers of conglomerate and a volcanic dyke about 70 million years old (2). There are many natural values here, such as an extensive reef system out from Honeycomb Light (Kahu Rocks) (1). This area is influenced by the mixing of three current systems, resulting in distributional overlaps of marine flora and fauna (3). This site has been suggested as a Marine Reserve area as long ago as 1981 (4).

Conservation Values:

Natural: a,b,c,e

Cultural: c

Historic: a,b,d

Comment:

Natural: The marine area includes an extensive reef system off Honeycomb Rocks and at Kahu Rocks, which are the largest group of emergent offshore rocks between Bare and Brothers Islands. The marine community is particularly rich with a very good variety of fauna (3). Onshore, small dunes south of Honeycomb Rock have some pingao (*Desmoschoenus spiralis*), and fur seals (*Arctocephalus forsteri*) haulout on Kahu Rocks and the nearby shore in winter (3,4). The geological features of Honeycomb Rock, the intrusive conglomerates (95 million years old) and a volcanic dyke (70 million year old) on the point below Honeycomb Light are unusual landforms (2).

Cultural: Honeycomb Rock is a striking geological structure which provides interesting seascapes at the end of a defined walkway from Glenburn Station (2).

Historic: 6 archaeological sites of Maori origin are known from this area (Historic Places Trust Inventory) including a possible pa, an urupa, walls, pits, terraces and middens and an oven site. Europeans settled in the district in the 1850's, and the Glenburn Station was established in the 1870s (4). The steamer "Kiwi" hit a submerged rock and sank off Glenburn Station in 1894 (5). In January 1967 the Fijian freighter "Tuvalu" ran aground on reefs near Honeycomb Rocks and the wreck was hauled ashore about 100m south of Honeycomb Rock (4).

Site Importance:

International

National

Regional

Local

Unknown

Comment:

Given the diverse natural values and extensive reef system (3) this site is of regional importance.

Existing Threats: a,b,d,i

Type & Comment:

The dune areas and wetland area just south of Honeycomb Rock is grazed by cattle (1) and the dunes are eroding, threatening the pingao (1) and the sea is discoloured with sediment (1). Recreational and commercial overfishing, especially of Crayfish (*Jasus edwardsii*) and Paua (*Haliotis iris*) has been suggested (3).

Human Modification and Human Use: a,d,h,i

Land has been developed for pastoral farming and farm tracks extend for the whole length of this coastline (1). A slipway for launching fishing boats has been built near Horowhai Point and a channel appears to have been cleared in the subtidal zone to allow fishing boats to reach the slipway (1). A walkway extends from Glenburn Station to Honeycomb Rock (2). The Kahu Rocks and reefs closer to shore are important sites for fishing and diving (3).

Existing Protection:

Type & Comment:

None.

Availability of Information:

Natural	①	2	3
Cultural	①	②	3
Historic	①	2	3
Threats	①	②	3
Human Mod. & Use	①	2	3

1. Well documented
2. Limited information (general)
3. Little information (if any)

Comment: The Wairarapa District Coastal Resource Inventory (1) contains a good series of oblique aerial photographs which have been used to assess the natural values, threats and human modification and use of the site.

Sources of Information:

Natural	①	2	③	4	5	6	⑦
Cultural	①	2	3	4	5	6	7
Historic	①	2	3	4	5	6	7
Threats	1	2	③	4	5	6	⑦
Human Mod. & Use	1	2	③	4	5	6	7

1. Derived info. from existing literature & databases
2. Derived info. as above & field check
3. Derived from existing maps & aerial photographs
4. Recent DOC survey including sampling & analysis
5. Recent DOC survey excluding sampling & analysis
6. Experience
7. Expert opinion

Comment:

1. McAlpine, G. 1989. Wairarapa District Coastal Resource Inventory. Department of Conservation, Wellington. (Unpublished collection of scientific papers, database information, letters, and a series of oblique aerial photographs of the Wairarapa coast).
2. Homer, L.; Moore, P. 1989. Reading the rocks : a guide to geological features of the Wairarapa Coast Landscape Publications, Wellington. 64pp.
3. Duffy, C. 1987. Scientist, Zoology Department, Canterbury University (*in litt.* in ref. (1)).
4. Field, K.D.; Holton, A.L. 1985. Honeycomb Rock Area : History and present use. MAF Unpublished Report. 17pp.
5. Ingram, C.W.N. 1977. New Zealand Shipwrecks 1795-1975. A.H. & A.W. Reed. Wellington. 464pp.

Recorded on Existing Databases:

Comment:

1. WERI
2. SSWI - Listed for seals present, no ranking (1985)
3. PNA - No listing, (1984)
4. Geopreservation - No sites (1989)
5. HPT County Inventories - 6 sites identified (1987)
6. Other - Amphibian and Reptile Distribution Scheme - no records (1988)
7. None

Other Considerations:

A possible site for a Marine Reserve. See Source 1, 3 and 4 above.

Accompanying Maps
and Photographs:

Site Name/s: Flat Point

Site No: 09/0027

Recorders Name: Bruce Dix/Hugh Robertson

Conservancy: Wellington

Map/Grid Ref: NZMS 260 T27 27583 59915

Date: 14 May 1990

Brief Description of Site:

Flat Point is a 6ha flat bare tombolo projecting 300m out from the natural line of the coast to link up with some offshore rocks. Flat Point lies at the northern end of an 11km long shallow bay backed by a 600m wide extensively grazed coastal platform, and to the north the sea runs up hard against low hills. Some small sand dunes lie at the back of Flat Point (1) and an extensive area of grazed dunes and dune wetlands extend from Te Una Una Stream back 500m to Flat Point Road (1). Just behind the dunes are 7-8 beach houses.

Conservation Values:

Natural: d,e

Cultural: c,d

Historic: b

Comment:

Natural: Flat Point is a unique geological feature on the Wairarapa Coastline (pers. obs.) and is a part of the coastal sedimentation processes on the coast; however it apparently retreated by 100m between 1927 and 1967 (2). The spotted skink (Leiolopisma lineocolatum) is resident here and enjoys protected status. A hawksbill turtle (Eretmochelys imbricata) has also been recorded off Flat Point. (Amphibian and Reptile Distribution Scheme) and a leatherback turtle (Dermochelys coriacea) was recorded on the beach around 1982 (Sites of Special Wildlife Interest Register) (SSWI).

Cultural: This is a spiritually important site for Maori judging from the presence of sacred urupa (Historic Places Trust Inventory). The large sandy area is unusual for the Wairarapa coast and provides a distinctive coastal landscape (pers. obs.).

Historic: There is evidence of former Maori occupation, with 6 sites identified on the HPT Inventory including pits, middens and a burial site and a moa bone has also been found in the dunes (3).

Site Importance:

International

National

Regional

Local

Unknown

Comment:

No outstanding values have been recorded here, but the tombolo is an unusual feature of the Wairarapa Coast (1).

Existing Threats: a, i

Type & Comment:

The coastline in this vicinity retreated by 100m between 1927 and 1967, i.e. a rate of 2.5m/year through sea erosion (2) and consequently the sea is cloudy with sediment (1). Fishing boats are launched off Flat Point beach from trailers towed by tractors and this has caused some damage to dunes at the access points (1).

Human Modification and Human Use: a, i

The surrounding land area is farmed and 7 - 8 buildings lie just behind the dunes of Flat Point. Fishing and diving are the main uses, with at least six fishing boats being launched off Flat Point beach from trailers being towed by tractors (1).

Existing Protection:

Type & Comment:

None

Availability of Information:

Natural	①	2	3
Cultural	1	②	3
Historic	1	②	3
Threats	①	2	3
Human Mod. & Use	1	②	3

1. Well documented
2. Limited information (general)
3. Little information (if any)

Comment:

A remote area with limited access over private land (1). The Wairarapa District Coastal Resource Inventory (1) has a good series of oblique aerial photographs which have been used to assess natural values, threats and human modification and use of the site.

Sources of Information:

Natural	①	2	③	4	5	⑥	7
Cultural	①	2	3	4	5	6	7
Historic	①	2	3	4	5	6	7
Threats	①	2	③	4	5	6	7
Human Mod. & Use	1	2	③	4	5	6	7

1. Derived info. from existing literature & databases
2. Derived info. as above & field check
3. Derived from existing maps & aerial photographs
4. Recent DOC survey including sampling & analysis
5. Recent DOC survey excluding sampling & analysis
6. Experience
7. Expert opinion

Comment:

1. McAlpine, G. 1989. Wairarapa District Coastal Resource Inventory. Department of Conservation, Wellington. (Unpublished collection of scientific papers, database information, letters, and a series of oblique aerial photographs of the Wairarapa coast).
2. Gibb, J.G. 1978. Rates of coastal erosion and accretion in New Zealand. NZJ. Marine and Freshwater Res. 12:429-459.
3. Turner, G.A.; Carlin, W.F. 1975. Coastal Reserves Investigation and Proposals : Report on Wairarapa South County. Department of Lands and Survey, Wellington.

Recorded on Existing Databases:

Comment:

1. WERI
2. SSWI - No sites identified (1985)
3. PNA - No listings, (1984)
4. Geopreservation - No sites identified (1989)
5. HPT County Inventories - 6 sites identified (1987)
6. Other - Amphibian and Reptile Distribution Scheme - 2 records (1988)
7. None

Other Considerations:

Accompanying Maps
and Photographs:

Site Name/s: Kaiwhata River Mouth

Site No: 09/0028

Recorders Name: Bruce Dix/Hugh Robertson

Conservancy: Wellington

Map/Grid Ref: NZMS 260 T27 27608 59965

Date: 14 May 1990

Brief Description of Site:

This 1km long site includes the Kaiwhata River estuary which lies between Flat Point and Uruti Point on the Wairarapa Coast. This estuary is closed by a sandbar except after heavy rain and has a 10ha wave cut marine bench 300m to the south (1). At the northern side of the river mouth, more than 20 fossilised totara stumps are exposed at low tide (2). The surrounding land has been cleared for intensive grazing but no house or vehicle tracks occur within 500m of the site.

Conservation Values:

Natural: e,g,h

Cultural: c

Historic: b

Comment:

Natural: At low tide, over 20 fossilised totara stumps (up to 1m diameter), are exposed (2). These stumps have been radiocarbon dated to be about 8000 years old; and the trees were drowned by sea level rises rather than by land subsidence because the Wairarapa Coast has probably risen over 12m in the last 6500 years (2). This is the most dramatic example of recent geological changes on the Wairarapa Coast. Common geckos (*Hoplodactylus maculatus*) and common skinks (*Leiopisma nigriplantare*) have been recorded at this site (Amphibian and Reptile Distribution Scheme). The wave platform is large for this part of the coast (1).

Cultural: The fossil tree stumps create a unique landscape feature on the Wairarapa coast.

Historic: A pa site 500m up the Kaiwhata River is listed on the HPT Inventory.

Site Importance:

International

National

Regional

Local

Unknown

Comment:

The fossil totara forest is nationally important as an example of recent geological changes on the Wairarapa Coast and is vulnerable to damage by human activity (Geopreservation Inventory).

Existing Threats: a,b

Type & Comment:

Aerial photos reveal discolouration of water due to erosion, caused both by land clearance in the catchment and by sea erosion : this part of the coast retreated 40m in the 15 years from 1962 - 1977 (3).

Human Modification and Human Use: a,h,i

The surrounding land has been cleared for agriculture. Some diving and fishing occur here, and also picnicking and walking to the fossil totara stumps through private farmland (4) but only one small building lies within 500m of the site (1).

Existing Protection:

Type & Comment:

None

Availability of Information:

Natural	1	2	3
Cultural	1	2	3
Historic	1	2	3
Threats	1	2	3
Human Mod. & Use	1	2	3

1. Well documented
2. Limited information (general)
3. Little information (if any)

Comment:

The Wairarapa District Coastal Resource Inventory (1) has a good series of oblique aerial photographs which have been used to assess natural values, threats and human modification and use of this site.

Sources of Information:

Natural	1	2	3	4	5	6	7
Cultural	1	2	3	4	5	6	7
Historic	1	2	3	4	5	6	7
Threats	1	2	3	4	5	6	7
Human Mod. & Use	1	2	3	4	5	6	7

1. Derived info. from existing literature & databases
2. Derived info. as above & field check
3. Derived from existing maps & aerial photographs
4. Recent DOC survey including sampling & analysis
5. Recent DOC survey excluding sampling & analysis
6. Experience
7. Expert opinion

Comment:

1. McAlpine, G. 1989. Wairarapa District Coastal Resource Inventory. Department of Conservation, Wellington. (Unpublished collection of scientific papers, database information, letters, and a series of oblique aerial photographs of the Wairarapa coast).
2. Homer, L.; Moore, P. 1989. Reading the Rocks : a guide to geological features of the Wairarapa Coast. Landscape Publications, Wellington. 64pp.
3. Gibb, J.G. 1978. Rates of coastal erosion and accretion in New Zealand, NZJ. Marine and Freshwater Res. 12:429-459.
4. Turner, G.A.; Carlin, W.F. 1975. Coastal Resources Investigation and Proposals : Report on Masterton County. Department of Lands and Survey, Wellington. 35pp.

Recorded on Existing Databases:

Comment:

1. WERI - Yes
2. SSWI - Sites not ranked (1985)
3. PNA - No listing (1984)
4. Geopreservation - National importance ranking for fossil forest (1989)
5. HPT County Inventories - One site listed (1987)
6. Other - Amphibian and Reptile Distribution Scheme - 2 records (1988)
7. None

Other Considerations:

Accompanying Maps
and Photographs:

Site Name/s: Patanui Stream Mouth

Site No: 09/0029

Recorders Name: Bruce Dix/Hugh Robertson

Conservancy: Wellington

Map/Grid Ref: NZMS 260 T27 27637 60014

Date: 14 May 1990

Brief Description of Site:

This small (2ha) site is situated 4km south of Uruti Point and is one of many small streams along the Wairarapa Coast; however, unlike most, the stream flows parallel to the sea for 400m behind a spit where there is c. 1ha of moderately natural vegetation, with only limited access by stock (Sites of Special Wildlife Interest register). Surrounding land has been cleared for intensive grazing on river flats of the Patanui Stream.

Conservation Values:

Natural: a,d,e,f

Cultural:

Historic:

Comment:

The dune vegetation on the spit is still moderately natural because stock have only limited access Sites of Special Wildlife Interest register) (SSWI) and is better developed than elsewhere on the nearby coastline (1), because stock are impeded by low cliffs from approaching the site and because of the unusual feature of the river flowing parallel with the sea for some distance (1).

No information on cultural or historical values has been located for this site.

Site Importance:

International

National

Regional

Local

Unknown

Comment: There is well developed coastal vegetation growing on a 400m long sandspit, but this pocket is small compared with other Wairarapa sites (SSWI).

Existing Threats: a,b,d

Type & Comment:

This section of the Wairarapa coast is eroding as evidenced by active cliff and dune erosion both sides of this site, and the high sediment load in the sea shown in oblique aerial photographs (1). All surrounding land, including most of the stream catchment is developed farmland, and farm stock has limited access to the sandspit vegetation (SSWI).

Human Modification and Human Use: a

The surrounding land and most of the catchment of the stream is farmed.

Existing Protection:

Type & Comment:

None.

Availability of Information:

Natural	①	2	3
Cultural	1	2	③
Historic	1	2	③
Threats	1	②	3
Human Mod. & Use	1	②	3

1. Well documented
2. Limited information (general)
3. Little information (if any)

Comment:

The Wairarapa District Coastal Resource Inventory (1) has a good series of oblique aerial photographs which have been used to assess natural values, threats and human modification and use.

Sources of Information:

Natural	①	2	③	4	5	6	7
Cultural	1	2	3	4	5	6	7
Historic	1	2	3	4	5	6	7
Threats	1	2	③	4	5	6	7
Human Mod. & Use	1	2	③	4	5	6	7

1. Derived info. from existing literature & databases
2. Derived info. as above & field check
3. Derived from existing maps & aerial photographs
4. Recent DOC survey including sampling & analysis
5. Recent DOC survey excluding sampling & analysis
6. Experience
7. Expert opinion

Comment:

Source:

1. McAlpine, G. 1989. Wairarapa District Coastal Resource Inventory. Department of Conservation, Wellington. (Unpublished collection of scientific papers, database information, letters, and a series of oblique aerial photographs of the Wairarapa coast).

Recorded on Existing Databases:

Comment:

1. WERI - insufficient information (1985)
2. SSWI - potential value (1985)
3. PNA - No listings (1984)
4. Geopreservation - No sites identified (1989)
5. HPT County Inventories - No sites identified (1987)
6. Other - Amphibian and Reptile Distribution Scheme - no records (1988)
7. None

Other Considerations:

Area is little known

Accompanying Maps
and Photographs:

Site Name/s: Uruti Point

Site No: 09/0030

Recorders Name: Bruce Dix/Hugh Robertson

Conservancy: Wellington

Map/Grid Ref: NZMS 260 T27 27670 60040

Date: 14 May 1990

Brief Description of Site:

The area from 3km south of Uruti Point to 1km north of it consists of a set of dunefields (c. 100ha) backed by a series of broad terraces extending 5km inland (1,2). These terraces, which are developed for pastoral farming and cropping (pers. obs.), are up to 120m above sea level (2) and result from uplifts of the sea bed in the last 125,000 years, during which time the sea level has remained relatively static (3). The dunes are up to 800m wide at Uruti Point but south of Waiorong Road the dunes become very narrow and peter out about 2km south of Waiorong Stream. To the north of Uruti Point the dunes run out below a 30m high raised terrace (1).

Conservation Values:

Natural: e

Cultural: d,

Historic: b,d

Comment:

Natural: The geological features of this site are very young, with the coast having extended 5km in 125,000 years because of uplift of the whole coast (2). The dunes have formed in the last 6500 years and are unconsolidated (1,2). The vegetation and wildlife values at the site have not been documented. There is a dune lake on site which was created by dunes blocking a valley just north of Uruti Point.

Cultural: This site is sacred to Maori, judging by an urupa north of Uruti Point. (Historic Places Trust Inventory)

Historic: One archaeological site of Maori origin is listed in the HPT Inventory; an urupa inland from the northern boundary of this site. Two ships have been wrecked at Uruti, the "Sarah Jane" (1847) and the "White Swan" (1862) (4).

Site Importance:

International

National

Regional

Local

Unknown

Comment:

The Uruti Point dune-fields form by far the largest area of dunes (c.100ha) on the Wairarapa Coast, but little is known of their vegetation and wildlife values. They are believed to be of regional importance (pers. obs.).

Existing Threats: a,b,m

Type & Comment:

This section of coast is retreating with sea erosion (1) and as a result the sea is badly discoloured with sediment (1).

A series of rough roads cut through the dunes and a 250m long strip of sand has been cleared and bulldozed just above the high tide line immediately north of Uruti Point apparently to park fishing boats (1). Fishing boats are launched from tractor-towed cradles (1), and this damages natural and aesthetic values of the beach.

Human Modification and Human Use: a,h,i

The area behind the dunes is farmed and 3 buildings are present among the dunes (1). The beach has road access and fishing boats are launched from tractor-towed cradles in a small bay just north of Uruti Point (1). Surf-fishing, camping, picnicking and walking are the main recreational activities (5).

Existing Protection:

Type & Comment:

None

Availability of Information:

Natural	①	2	3
Cultural	1	②	3
Historic	1	②	3
Threats	1	②	3
Human Mod. & Use	①	2	3

1. Well documented
2. Limited information (general)
3. Little information (if any)

Comment:

The Wairarapa District Coastal Resource Inventory (1) has a good series of oblique aerial photographs which have been used to assess the natural values, threats and human modification and use of this site.

Sources of Information:

Natural	①	2	③	4	5	6	7
Cultural	①	2	3	4	5	6	7
Historic	①	2	3	4	5	6	7
Threats	1	2	③	4	5	⑥	7
Human Mod. & Use	①	2	③	4	5	6	7

1. Derived info. from existing literature & databases
2. Derived info. as above & field check
3. Derived from existing maps & aerial photographs
4. Recent DOC survey including sampling & analysis
5. Recent DOC survey excluding sampling & analysis
6. Experience
7. Expert opinion

Comment:

1. McAlpine, G. 1989. Wairarapa District Coastal Resource Inventory. Department of Conservation, Wellington. (Unpublished collection of scientific papers, database information, letters, and a series of oblique aerial photographs of the Wairarapa coast.
2. King, L.C. 1930. Raised beaches and other features of the south-east coast of the North Island of New Zealand. Trans. Proc. NZ Inst. 61:498-525.
3. Homer, L.; Moore, P. 1989. Reading the rocks : a guide to the geological features of the Wairarapa Coast. Landscape Publications, Wellington. 64pp.
4. Ingram, C.W.N. 1977. New Zealand Shipwrecks 1795-1975 - A.H. & A.W. Reed, Wellington. 464pp.
5. Turner, G.A.; Carlin, W.F. 1975. Coastal Reserves Investigation and Proposals : Report on Masterton County. Department of Land and Survey, Wellington. 35pp.

Recorded on Existing Databases:

Comment:

1. WERI
2. SSWI - no sites recorded (1985)
3. PNA - No listings (1984)
4. Geopreservation - no sites recorded (1989)
5. HPT County Inventories - one site recorded (1987)
6. Other - Amphibian and Reptile Distribution Scheme - no records (1988).
7. None

Other Considerations:

Accompanying Maps
and Photographs:

Site Name/s: Southern Riversdale dunes

Site No: 09/0031

Recorders Name: Bruce Dix/Hugh Robertson

Conservancy: Wellington

Map/Grid Ref: NZMS 260 T27 27675 60066

Date: 14 May 1990

Brief Description of Site:

This 1km length of coastline (immediately to the south of Riversdale Beach township) is backed by a 50ha area of dunes and swamps, within which there is interesting dune and wetland vegetation (1,2). Behind the dunes are 25m high hills that are former marine terraces and which are extensively grazed (3). A wave cut platform of twisted sandstone abuts the southern half of the site, with a sandy beach (Riversdale Beach) running northward for the remaining half of the site (1).

Conservation Values:

Natural: a,b,d

Cultural:

Historic:

Comment:

Natural: The fragile native dune and swamp vegetation is relatively intact although the dunes have been invaded by exotic marram (*Ammonophila arenaria*). The native sandbinders (*Spinifex hirsutus*) and (*Carex pumila*), and dune shrubs are still present, with the indeterminate *Pimelea arenaria* (sand daphne) being most notable. Also present were matagouri (*Discaria toumatou*), a common South Island plant that is very localised in the North Island (2).

Cultural:

Historic:

Site Importance:

International

National

Regional

Local

Unknown

Comment:

Some important botanical values are present, including one plant (*Pimelia arenaria*) of indeterminate status and one with a restricted distribution in the North Island (*Discaria toumatou*). Little is known of the dune vegetation elsewhere on the rest of the coast to know if the presence of these species is particularly unusual, or representative of former coastal vegetation.

Existing Threats: a,b,c,d,k,m

Type & Comment:

The southern third of Riversdale Beach has been subject to rapid sea erosion of between 0.10 and 0.42 metres/year from 1902 to 1986 (4).

Several exotic plant species (notably marram and *Acacia* spp), and motorcycles used on the adjoining beach are threatening the native dune plants described above (2).. There is also some threat to dune plants by grazing, and fire from recreational users (2).

Human Modification and Human Use: a,h,i

The land behind is developed farmland and grazing stock have access to this site (1). The shoreline is popular for recreation, especially walking, picnicking, sunbathing and surfcasting with most people coming from nearby Riversdale Beach township (5).

Existing Protection: c

Type & Comment:

Much of the site is a Masterton County Council recreation reserve (37ha), otherwise unprotected with part of the dunes and wetland being privately owned. Further protection is needed as interesting biological values are indicated.

Availability of Information:

Natural	①	2	3
Cultural	1	2	③
Historic	1	2	③
Threats	①	2	3
Human Mod. & Use	①	2	3

1. Well documented
2. Limited information (general)
3. Little information (if any)

Comment:

Most information came from a site visit by C.C. Ogle (2) in August 1987. The Wairarapa District Coastal Resource Inventory has a good series of oblique aerial photographs which allow an assessment of the natural values, threats and human modification and use of the site.

Sources of Information:

Natural	①	2	3	4	5	6	⑦
Cultural	1	2	3	4	5	6	7
Historic	1	2	3	4	5	6	7
Threats	①	2	③	4	5	6	⑦
Human Mod. & Use	①	2	③	4	5	6	7

1. Derived info. from existing literature & databases
2. Derived info. as above & field check
3. Derived from existing maps & aerial photographs
4. Recent DOC survey including sampling & analysis
5. Recent DOC survey excluding sampling & analysis
6. Experience
7. Expert opinion

Comment:

1. McAlpine, G. 1989. Wairarapa District Coastal Resource Inventory. Department of Conservation, Wellington. (Unpublished collection of scientific papers, database information, letters, and a series of oblique aerial photographs of the Wairarapa coast).
2. C.C. Ogle, Advisory Scientist, Wanganui (pers. comm.).
3. King, L.C. 1930. Raised beaches and other features of the south-east coast of the North Island of New Zealand. Trans. Proc. NZ Inst. 61:498-525.
4. Dr Jeremy Gibb, Department of Conservation, Wellington (pers. comm.).
5. Turner, G.A., Carlin, W.F. 1975. Coastal Reserves Investigations and Proposals : Report on Masterton County. Department of Lands and Survey, Wellington. 35pp.

Recorded on Existing Databases:

Comment: Overlooked because of omission on topographic maps.

1. WERI
2. SSWI - not recorded (1985)
3. PNA
4. Geopreservation - no sites (1989)
5. HPT County Inventories - no sites (1987)
6. Other - Amphibian and Reptile Distribution Scheme - no records (1988)

Other Considerations:

Further protection is needed as interesting biological values are indicated.

Accompanying Maps
and Photographs:

Site Name/s: Motuwaireka Stream mouth

Site No: 09/0032

Recorders Name: Bruce Dix/Hugh Robertson

Conservancy: Wellington

Map/Grid Ref: NZMS 260 T27 27686 60091

Date: 15 May 1990

Brief Description of Site:

The site consists of a 500m length of coast which includes the mouth of the Motuwaireka (Riversdale) Stream and a small raupo (*Typha orientalis*) swamp just north of the stream (1). Pine trees (*Pinus radiata*) have been planted on the dunes to the north of the streammouth (2), presumably to halt sea erosion. The land to the north of the site is grazed by farm stock, and Riversdale Beach township lies 500m to the south (1).

Conservation Values:

Natural: a,b,d,f

Cultural:

Historic:

Comment:

Natural: A little modified sandy estuary (which is large considering the size of the stream) is used occasionally as a feeding site by rare Variable Oystercatchers (*Haematopus unicolor*). A small fragile pocket of raupo swamp is tucked behind the low coastal dunes (Sites of Special Wildlife Interest register) which is representative of a formerly more common habitat type (pers. obs.).

Cultural: Not known.

Historic: No sites registered.

Site Importance:

International

National

Regional

Local

Unknown

Comment:

This site is an important recreational site on the Wairarapa coast, which detracts from its natural values because of considerable disturbance to wildlife (pers. obs.). The wildlife of the raupo swamp is unknown, but the swamp is likely to be too small to hold viable populations of wetland birds (SSWi).

Existing Threats: a,b,g,l

Type & Comment:

This section of coastline (the northern third of Riversdale Beach) has been subject to sea erosion of between 0.02 and 0.16m/year from 1902 to 1986 (3) and as a result the sea is badly discoloured (1). Pines planted along the shoreline, presumably to halt sea erosion have seeded and young pines are growing elsewhere on the nearby dunes (1). The land adjoining this site has apparently been broken up for a coastal subdivision which will increase disturbance to wildlife by recreational users of the site, especially by people walking dogs and using motorcycles (pers. obs.).

Human Modification and Human Use: a,h,i,k

The coastal subdivision of Riversdale Beach township, immediately south of this site, is a popular holiday spot and so there is a high recreational use of this site for walking, swimming, motorcycling, fishing, diving and boating (1). There is also a paua farm, "Crystal Park". 1km north of this site with several buildings and pipelines crossing the coastline to bring in and discharge seawater (2).

Existing Protection: c

Type & Comment:

Apart from a coastal esplanade reserve, there is no protection. Restrictions on use of motorcycles and exercise of dogs near the estuary might improve wildlife values.

Availability of Information:

Natural	①	2	3
Cultural	1	2	③
Historic	1	2	③
Threats	①	2	3
Human Mod. & Use	①	2	3

1. Well documented
2. Limited information (general)
3. Little information (if any)

Comment: The Wairarapa District Coastal Resource Inventory (1) has a good series of oblique aerial photographs which allow an assessment of the natural values, threats and human modification and use of this site.

Sources of Information:

Natural	①	2	③	4	5	⑥	7
Cultural	1	2	3	4	5	6	7
Historic	1	2	3	4	5	6	7
Threats	1	2	③	4	5	⑥	⑦
Human Mod. & Use	①	2	③	4	5	⑥	7

1. Derived info. from existing literature & databases
2. Derived info. as above & field check
3. Derived from existing maps & aerial photographs
4. Recent DOC survey including sampling & analysis
5. Recent DOC survey excluding sampling & analysis
6. Experience
7. Expert opinion

Comment: Major source:

1. Turner, G.A.; Carlin, W.F. 1975. Coastal Reserves Investigation and Proposals : Report on Masterton County. Department of Lands and Survey, Wellington. 35pp.
2. McAlpine, G. 1989. Wairarapa District Coastal Resource Inventory. Department of Conservation, Wellington. (Unpublished collection of scientific papers, database information, letters and a series of oblique aerial photographs of the Wairarapa coast.
3. Dr Jeremy Gibb, Department of Conservation, Wellington (pers. comm.).

Recorded on Existing Databases:

Comment:

1. WERI
2. SSWI - Yes - local ranking (1985)
3. PNA - No listings (1984)
4. Geopreservation - not listed (1989)
5. HPT County Inventories - no sites listed (1987)
6. Other - Amphibian and Reptile Distribution Scheme - no records (1988)
7. None

Other Considerations:

Accompanying Maps
and Photographs:

Site Name/s: Orui/Otahome

Site No: 09/0033

Recorders Name: Bruce Dix/Hugh Robertson

Conservancy: Wellington

Map/Grid Ref: NZMS 260 U26 27720 60170

Date: 15 May 1990

Brief Description of Site:

This 15km stretch of coast from Orui (2km north of Riversdale Beach) to Otahome is characterised by narrow sandy beaches or rock platforms backed immediately by extensively grazed hills (up to 100m high), broken only by the Whareama River in the middle of the site (1). The Whareama River is the largest river between Cape Palliser and Castle Point and has a tidal area of mudflats that extend 2-3km upstream (pers. obs.). Around the mouth of the Whareama River are several beach cottages.

Conservation Values:

Natural: a,c

Cultural: d,

Historic: b,d

Comment:

Natural: The Whareama River estuary provides good feeding habitat for wading birds such as rare Variable Oystercatchers (*Haematopus unicolor*), threatened Reef Herons (*Egretta sacra*), Banded Dotterels (*Charadrius bicinctus*), and also Pied Stilts (*Himantopus himantopus*) and a few Bar-tailed Godwits (*Limosa lapponica*) (pers. obs.). The Otahome Estuary, although still natural and less disturbed than the Whareama Estuary (1) does not appear to have high wildlife values (2).

Cultural: This area has spiritual values to Maori as evidenced by a burial site (Historic Places Trust Inventory).

Historical: No sites are listed on the HPT Inventory, but a burial site, a pa site and a karaka grove are present north of Waimimi Stream (1). Three ships have been wrecked trying to cross the Whareama Bar: the "Swift" (1861), the "Sarah Elizabeth" (1861) and the "Brothers" (1862) (3).

Site Importance:

International

National

Regional

Local

Unknown

Comment:

The Whareama River estuary is locally important as a wildlife habitat, but the numbers of birds using the site are not regionally important (pers. obs.).

Existing Threats: a,b

Type & Comment: The coast at this site is retreating quickly with sea erosion; at one site near Orui, the coast receded by 40m between 1970 and 1977 (4), and oblique aerial photographs (1) show active beach erosion along much of this site and high sediment loads in the sea near the shoreline.

Human Modification and Human Use: a,d,h,i

The land adjoining this site has been developed for farming and a few cottages, dot the coast, especially near the mouth of the Whareama River (1). The "Crystal Park" paua farm lies just south of this site. A small jetty projects into the Whareama River 400m from its mouth. This site is used for shore and water-based recreation (2) with small fishing boats entering the sea from the mouth of the Whareama River (Sites of Special Wildlife Interest). The beach south of Otahome is popular for surfcasting (2).

Existing Protection: c,h

Type & Comment:

A county reserve (25ha) south of Otahome (2) and a rahui area (Waimimiha Fishing Reserve) near Waimimi Stream (1) are the only protected areas on this stretch of coast.

Availability of Information:

Natural ① 2 3
Cultural 1 2 ③
Historic 1 ② 3
Threats ① 2 3
Human Mod. & Use ① 2 3

1. Well documented
2. Limited information (general)
3. Little information (if any)

Comment: The Wairarapa District Coastal Resource Inventory (1) has a good series of oblique aerial photographs which allow an assessment of the natural values, threats and human modification and use of this site.

Sources of Information:

Natural ① 2 ③ 4 5 ⑥ 7
Cultural ① 2 3 4 5 6 7
Historic ① 2 3 4 5 6 7
Threats ① 2 ③ 4 5 6 7
Human Mod. & Use ① 2 ③ 4 5 ⑥ 7

1. Derived info. from existing literature & databases
2. Derived info. as above & field check
3. Derived from existing maps & aerial photographs
4. Recent DOC survey including sampling & analysis
5. Recent DOC survey excluding sampling & analysis
6. Experience
7. Expert opinion

Comment:

1. McAlpine, G. 1989. Wairarapa District Coastal Resource Inventory. Department of Conservation, Wellington. (Unpublished collection of scientific papers, database information, letters, and a series of oblique aerial photographs of the Wairarapa coast).
2. Turner, G.A.; Carlin, W.F. 1975. Coastal Reserve Investigation and Proposals : Report on Masterton County. Department of Lands and Survey, Wellington. 35pp.
3. Ingram, C.W.N. 1977. New Zealand Shipwrecks, 1795-1975. A.H. & A.W. Reed, Wellington. 464pp.
4. Gibb, J.G. 1978. Rates of coastal erosion and accretion in New Zealand. NZJ. Marine and Freshwater Res. 12:429-456.

Recorded on Existing Databases:

Comment:

1. WERI - Yes, but not available
2. SSWI - No sites listed, but description of Whareama Estuary (1985)
3. PNA - No sites listed (1984)
4. Geopreservation - No sites listed (1989)
5. HPT County Inventories - No sites listed (1987)
6. Other - Amphibian and Reptile Distribution Scheme - no records (1988)
7. None

Other Considerations:

Accompanying Maps
and Photographs:

Site Name/s: Castlepoint

Site No: 09/0034

Recorders Name: Geoff McAlpine/Hugh Robertson

Conservancy: Wellington

Map/Grid Ref: NZMS 260 U26 27815 60282

Date: 4 May 1990

Brief Description of Site:

Castlepoint is located on the Wairarapa Coast, 50km east of Masterton. The reef and the Castle Rock (162m) are composed of very young limestone rocks (approximately two million years old) made up of broken barnacles and other fossils. (1). The whole area (36ha) is protected as a scenic reserve. There is a small (75 house and beach cottage) settlement there (2) and the area has the highest recreational use of any part of the Wairarapa coast with walking, climbing, surfcasting, fishing, diving, swimming and horse-riding being the main pursuits (3). Each year the "Castlepoint Horse Races" are held on the beach and this attracts very large (1000+) crowds (pers. obs.).

Conservation Values:

Natural: a,b,c,d,e,f,g,h

Cultural: a,b,c,d,e

Historic: a,b,c,d

Comment:

Natural: The unique geology of the Castlepoint site has been well studied, with abundant fossils in the limestone, comprising over 70 species (1). The marine benches are regarded as being of national importance (Geopreservation Inventory). The fragile vegetation remnants on Castle Rock and the lighthouse area are some of the last remaining relatively naturally vegetated coastal communities in the Wairarapa. Although not pristine, it is an important site considering the modified coast to the north and south. Additionally, the area contains a rare species of daisy Brachyglottis compacta (formerly Senecio compactus) endemic to Castlepoint (3). The reef area is a Site of Special Wildlife Interest (SSWI) rated as of "moderate value" because the site is of importance to Red-billed Gulls (Larus novaehollandiae), White-fronted Terns (Sterna striata) and Black-backed Gulls (Larus dominicanus) and possibly Reef Herons (Egretta sacra) for breeding. The common gecko (Hoplodactylus maculatus), green gecko (Naultinus elegans), common skink (Leioposisma nigriplantare) are at Castlepoint, and in 1977 a banded sea snake (Laticauda colubrina) was recorded there, and a green turtle (Chelonia mydas) was seen 3km offshore in 1975 (Amphibian and Reptile Distribution Scheme).

Cultural: Aesthetically, Castlepoint is the most prominent physical landscape feature on the Wairarapa Coast and it is painted, photographed and drawn extensively. Widely acclaimed for rugged scenic quality (3) it is also of considerable scientific and educational interest (1). Spiritual importance of this site to Maori is indicated by archaeological sites (including urupa) and dating back to pre-European times (3, Historic Places Trust Inventory).

Historic: Nine archaeological sites of Maori origin are identified in the HPT Inventory including 2 urupa, middens and ovens. William Colenso visited Castlepoint in 1843 and European settlement followed shortly afterwards (3). Castlepoint was of great importance to the early European settlers of the Wairarapa as a shipping port for bringing in goods and shipping out produce, especially wool. At least 2 ships have been wrecked near Castlepoint (4).

Site Importance:

International

National

Regional

Local

Unknown

Comment: Brachyglottis compacta is endemic to Castlepoint, and of national significance as a rare plant. The other vegetation is of at least regional importance as this site contains one of very few coastal Wairarapa vegetation remnants. Physically, it is regionally important as the only limestone of its age in the Wairarapa (1); and the marine benches are classified as being of national significance (Geopreservation Inventory). This site was ranked as having national significance for the importance, quality and degree of recreational use of the area (3).

Existing Threats: a,b,i

Type & Comment: The coastline at Castlepoint is retreating with sea erosion, with a shift of 4.6m between 1962 and 1977 (5). The lighthouse/reef area was having severe erosion problems caused by visitors, but a walking path and revegetation programme has lessened this threat. These erosion processes have led to a high sediment load in the near-shore waters (2). The area is subject to very high levels of recreational line fishing and drop potting from the reef plus diving and boat fishing (3). This has undoubtedly reduced the territorial fish species and seasonally depletes crayfish numbers. Commercial craypotting along the reef would also be affecting crayfish numbers. (pers. obs.). Fishing boats are launched off the beach from tractor-towed cradles (1) and affects the natural and aesthetic values of the beach (pers. obs.).

Human Modification and Human Use: a,h,i,k

Although the land nearby has been cleared for farming, a beach settlement is adjacent, and parts of the site are quite modified by erosion (human induced and accelerated by clearing and walking) along the reef and by clearing/grazing at Castlehill, regionally it is still relatively 'natural'. (3). A raised walkway crosses the length of the tombolo to provide access to the lighthouse at high tide (2). -Shore based recreation is surfcasting, line fishing, drop potting, dragnetting, motorbike riding, horse riding, birdwatching, swimming and walking/climbing (3). It is extensively used by amateur biologists and geologists and for educational visits from schools, universities and clubs (3). This is the most popular land based fishing area on Wairarapa Coast north of Palliser Bay (Pers. obs.).

Existing Protection: a,d

Type & Comment:

DOC: Castlepoint Scenic Reserve (36ha)

DOC stewardship areas : three, totalling 0.25ha

Protective zoning : No commercial seaweed harvesting is permitted within 0.5 nautical miles of Castle Point Basin (6).

Availability of Information:

Natural	①	2	-3
Cultural	①	2	3
Historic	①	2	3
Threats	①	2	3
Human Mod. & Use	①	2	3

1. Well documented
2. Limited information (general)
3. Little information (if any)

Comment: The area has been studied extensively by Victoria University and DSIR for its terrestrial biology (especially vegetation) and geology, and to a limited extent the subtidal biology too. The Wairarapa District Coastal Resource Inventory (2) includes a good series of oblique aerial photographs which allow an assessment of the natural values, threats and human modification and use of this site.

Sources of Information:

Natural	①	②	③	4	5	⑥	⑦
Cultural	①	2	3	4	5	6	7
Historic	①	2	3	4	5	6	7
Threats	①	②	③	4	5	⑥	7
Human Mod. & Use	①	②	③	4	5	⑥	⑦

1. Derived info. from existing literature & databases
2. Derived info. as above & field check
3. Derived from existing maps & aerial photographs
4. Recent DOC survey including sampling & analysis
5. Recent DOC survey excluding sampling & analysis
6. Experience
7. Expert opinion

Comment:

Sources:

1. Homer, L.; Moore, P. 1989. Reading the Rocks : a guide to the geological features of the Wairarapa Coast. Landscape Publications, Wellington. 64pp.
 2. McAlpine, G. 1989. Wairarapa District Coastal Resource Inventory. Department of Conservation, Wellington. (Unpublished collection of scientific papers, database information, letters, and a series of oblique aerial photographs of the Wairarapa coast).
 3. Turner, G.A.; Carlin W.F. 1975. Coastal Reserves Investigation and Proposals : Report on Masterton County. Department Lands and Survey, Wellington. 35pp.
 4. Ingram, C.W.N. 1977. New Zealand Shipwrecks, 1795-1975. A.H. & A.W. Reed, Wellington. 464 pp.
 5. Gibb, J.G. 1978. Rates of coastal erosion and accretion in New Zealand. NZJ. Marine and Freshwater Res. 12:429-456
 6. Ruth Marsh, Scientist, MAFFish, Napier in litt. (In ref. (2)).
 7. T. Harington, C.O. DOC, Masterton (pers. comm.)
 8. G. Brogden, Wairarapa Dive Club, Masterton. (pers. comm.).
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Recorded on Existing Databases: Comment:

1. WERI - No
 2. SSWI - importance ranked moderate (1985)
 3. PNA - No
 4. Geopreservation - Importance ranked national (1989)
 5. HPT County Inventories - 9 sites identified (1987)
 6. Other - Amphibian and Reptile Distribution Scheme - 5 species recorded (1988)
 7. None
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Other Considerations:

Castlepoint is a potential site for a marine reserve (Pers. obs.). The site is one of very few Wairarapa coastal areas easily accessible by road and it has a range of habitats from rocky exposed coast to sheltered sandy bays within limited area. Castlepoint is also important as a settlement site for crayfish in larvae (7). In the past, the rocky reef had large populations of crayfish and some finfish species (8).

Accompanying Maps
and Photographs:

Site Name/s: Whakataki-Mataikona

Site No: 09/0035

Recorders Name: Bruce Dix/Hugh Robertson

Conservancy: Wellington

Map/Grid Ref: NZMS 250 U26 27845 60370

Date: 15 May 1990

Brief Description of Site:

The 12km stretch of the Wairarapa Coast between the Whakataki River and the Mataikona River has a very narrow (up to 100m wide) coastal platform flanked by a wide shore platform for most of its length (1). The shore platforms at Whakataki display, at low tide, a series of parallel grooves, extending for hundreds of metres. These are due to alternating beds of mudstone and siltstone (of some 20 million years old) being tilted and eroded. The tilt is measured as some 60 degrees to the west (2). Unlike the rest of the Wairarapa coast, the coastal platform is backed by hills (up to 472m) that have a good cover of native vegetation on the upper seaward-facing slopes but extensive grazing and Pinus radiata plantations on the lower slopes. The Mataikona River mouth is sometimes blocked by a sandbar and water backs up in the estuary (pers. obs.). A 200m high face of wind-eroding sand is a very prominent feature just north of Mataikona estuary. Small beach settlements are at Waipori's Mark (9 houses), Mt Percy (6 houses), and at Mataikona River (23 houses) (1).

Conservation Values:

Natural: b,c,e

Cultural: a,c,d,e

Historic: b,d

Comment:

Natural: The geological feature of the "tongue and groove" effect on the shore platform at Whakataki has been described as one of the more remarkable features of the Wairarapa coast (2). The coast and estuaries of the Whakataki and Mataikona Rivers provide feeding and breeding sites for rare Variable Oystercatchers (Haematopus unicolor) and threatened Banded Dotterel (Charadrius bicinctus), and for other waders, shags, terns and gulls (pers. obs.).

Cultural: This site has traditionally been used by Maori and would have spiritual significance as evidenced by 3 pa, urupa and a monument at Waipori's Mark (Historic Places Trust Inventory). This monument is a stone cairn, erected in 1842 to mark a treaty signed in 1839 to end hostilities between Ngati Awa and Wairarapa Maoris (3). The geological formations are of scenic and educational interest (2).

Historic: 14 archaeological sites of Maori origin have been recorded on this stretch of coast (HPT Inventory), including 3 pa sites, 1 urupa, terraces, middens, ovens and karaka grove and a monument (Waipori's Mark). The middens researched in detail have been of shell only (ie no fish or birds) and pawa (Haliotis iris) predominates (3). Two ships have been lost near Mataikona, the "Sovereign" (1894) and the fishing boat "Crusader" (1970) (4).

Site Importance:

International

National

Regional

Local

Unknown

Comment: Although not listed on the Geopreservation Inventory, the "tongue and groove" erosion effects on the shore platform have been described as a remarkable and unusual feature of the Wairarapa Coast (2). This is also a traditionally important site for Maori (3).

Existing Threats: a,b

Type & Comment:

This section of the coast is retreating from sea and wind erosion as evidenced by eroding sanddunes, sediment-laden sea and drifting sand on a 50ha face of a 200m hill just north of Mataikona River (1).

Human Modification and Human Use: a,d,h,i

The land behind the coast has been cleared for farming, but some of the higher slopes are regenerating in native shrubs (1) and several areas between Whakataki River and Mt Percy have been planted in Pinus radiata. A road traverses the whole 12km section close to the coastline and a cutting has been made through a bluff just south of Mt Percy (1). A narrow surfboat lane has been cut in the rocks just south of Mataikona beach settlement (1). The main recreational activities are walking, picnicking and fishing (5).

Existing Protection: a,c

Type & Comment:

DOC : Recreation Reserve (0.5ha) at Mataikona Beach.
Local : Recreation Reserve (18ha) at Mataikona.

Availability of Information:

Natural	①	2	3	1. Well documented
Cultural	①	2	3	2. Limited information (general)
Historic	①	2	3	3. Little information (if any)
Threats	①	②	3	
Human Mod. & Use	①	2	3	

Comment: The Wairarapa District Coastal Resource Inventory (1) contains a good series of oblique aerial photographs which allow an assessment of natural values, threats and human modification and use of this site.

Sources of Information:

Natural	①	②	③	4	5	⑥	7	1. Derived info. from existing literature & databases
Cultural	①	2	3	4	5	6	7	2. Derived info. as above & field check
Historic	①	2	3	4	5	6	7	3. Derived from existing maps & aerial photographs
Threats	①	2	③	4	5	6	7	4. Recent DOC survey including sampling & analysis
Human Mod. & Use	①	②	③	4	5	⑥	7	5. Recent DOC survey excluding sampling & analysis
								6. Experience
								7. Expert opinion

Comment:

Sources:

1. McAlpine, G. 1989. Wairarapa District Coastal Resource Inventory. Department of Conservation, Wellington. (Unpublished collection of scientific papers, database information, letters, and a series of oblique aerial photographs of the Wairarapa coast).
 2. Homer, L.; Moore, P. 1989. Reading the rocks - a guide to geological features of the Wairarapa coast. Landscape Publications, Wellington. 64pp.
 3. Davis, S. (1957). Evidence of Maori occupation in the Castlepoint area. J Polynesian Soc. 66: 199-203.
 4. Ingram, C.W.N. 1977. New Zealand Shipwrecks, 1795-1975. A.H. & A.W. Reed, Wellington. 464pp.
 5. Turner, G.A.; Carlin, W.F. 1975. Coastal Reserve Investigation and Proposals : Report on Masterton County. Department of Lands and Survey, Wellington. 35pp.
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Recorded on Existing Databases:

Comment:

1. WERI
 2. SSWI - site not ranked (1985)
 3. PNA - No sites listed (1984)
 4. Geopreservation - no sites recorded (1989)
 5. HPT County Inventories - 14 sites recorded (1987)
 6. Other - Amphibian and Reptile Distribution Scheme - no records (1988)
 7. None
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Other Considerations:

Accompanying Maps
and Photographs:

Site Name/s: Owahanga River

Site No: 09/0036

Recorders Name: Bruce Dix/Hugh Robertson

Conservancy: Wellington

Map/Grid Ref: NZMS 260 U25 27930 60530

Date: 15 May 1990

Brief Description of Site:

The Owahanga River is the largest river on the Wairarapa Coast between Cape Palliser and Cape Turnagain. The 400ha area of estuary and nearby beach and shoreline provides varied habitat with tidal mudflats extending at least 4km upstream, sandy shore immediately north of the river mouth, and rough boulder strewn shore platforms exposed at low tide to the north and south of the estuary (1).

Conservation Values:

Natural: b,c,f

Cultural:

Historic: b

Comment:

Natural: The Owahanga Estuary and nearby shore provides good feeding habitat for rare Variable Oystercatchers (*Haematopus unicolor*), threatened Banded Dotterel (*Charadrius bicinctus*) and threatened Reef Heron (*Egretta sacra*) and for more common waders, shags, gulls and terns and for this reason the site was ranked "moderate" in the Sites of Special Wildlife Interest register (SSWI). The site is representative, in having the biggest tidal flats of any river between Cape Palliser and Cape Turnagain (1).

Cultural: No information.

Historic: Three archaeological sites (2 pa and a midden) of Maori origin have been identified at this site (HPT Inventory, 2).

Site Importance:

International

National

Regional

Local

Unknown

Comment:

This site has the largest river and tidal flats on the east coast of the Wairarapa between Cape Palliser and Cape Turnagain, and received a moderate ranking in the SSWI survey.

Existing Threats: a,b

Type & Comment:

Land clearance in the catchment of the Owahanga River has led to erosion and a high sediment load in the river and nearby sea (1).

Human Modification and Human Use: a,h,i

The surrounding countryside has been cleared for farming. A road runs parallel to the river but does not run right to the river mouth (stopping about 1.5km short), and so this estuary is less accessible to people than most estuaries along the Wairarapa Coast. Main recreational activities are swimming and boating in the river, fishing and picnicking (2).

Existing Protection: d

Type & Comment:

Protecting Zoning: No commercial seaweed harvesting is permitted within 2 nautical miles of the Owahanga Estuary (3).

Availability of Information:

Natural	①	2	3
Cultural	1	2	③
Historic	1	②	3
Threats	1	②	3
Human Mod. & Use	①	2	3

1. Well documented
2. Limited information (general)
3. Little information (if any)

Comment:

The Wairarapa District Coastal Resource Inventory (1) contains a good series of oblique aerial photographs which allow an assessment of natural values, threats and human modification and use of this site.

Sources of Information:

Natural	①	2	③	4	5	⑥	7
Cultural	1	2	3	4	5	6	7
Historic	①	2	3	4	5	6	7
Threats	1	2	③	4	5	6	7
Human Mod. & Use	①	2	③	4	5	⑥	7

1. Derived info. from existing literature & databases
2. Derived info. as above & field check
3. Derived from existing maps & aerial photographs
4. Recent DOC survey including sampling & analysis
5. Recent DOC survey excluding sampling & analysis
6. Experience
7. Expert opinion

Comment:

Sources:

1. McAlpine, G. 1989. Wairarapa District Coastal Resource Inventory. Department of Conservation, Wellington. (Unpublished collection of scientific papers, database information, letters, and a series of oblique aerial photographs of the Wairarapa coast).
2. Turner, G.A.; Carlin, W.A.; Kimber, W.A.; Dobbie, B.J. 1983. Coastal Reserves Investigation and Proposals : Report on Dannevirke County. Department of Lands and Survey, Wellington. 30pp.
3. Ruth Marsh, Scientist, MAFFish, Napier. in litt. (In ref. (1)).

Recorded on Existing Databases:

Comment:

1. WERI - Described as locally important, (1985)
2. SSWI - Moderate ranking (1985)
3. PNA - No sites listed (1984)
4. Geopreservation - no sites recorded (1989)
5. HPT County Inventories - 2 sites recorded (1987)
6. Other - Amphibian and Reptile Distribution Scheme - no records (1988)
7. None

Other Considerations:

Accompanying Maps
and Photographs:

Site Name/s: Akitio River

Site No: 09/0037

Recorders Name: Bruce Dix/Hugh Robertson

Conservancy: Wellington

Map/Grid Ref: NZMS 260 U25 27993 60612

Date: 15 May 1990

Brief Description of Site:

Akitio River, near the northernmost limit of the Wellington Conservancy on the East Coast, has an estuary behind a 600m long sandspit (15ha) projecting south from a Pinus radiata covered spur (1). Nearby, 1km to the south, along a sandy beach is Akitio Beach settlement (40 houses or baches, a camping ground, and a primary school), and a very large (20ha) shore platform, exposed at low tide (1).

Conservation Values:

Natural: c,f

Cultural: d,

Historic: b,d

Comment:

The Akitio River is one of the largest rivers on the Wairarapa east coast and the river is continuously open to the sea, but the tidal portion of the estuary is quite small (only about 1.5km with mudflats useable by wading birds (pers. obs.)). The northern spit (15ha) is quite isolated and rare Variable Oystercatchers (Haematopus unicolor) and threatened Banded Dotterel (Charadrius bicinctus) breed there in small numbers (pers. obs.).

Cultural: A maori burial ground near the estuary suggests spiritual values for the site (1).

Historic: An urupa is near the estuary, but it is not listed in the Historic Places Trust Inventory (1). Two ships have been wrecked at Akitio when coastal trading vessels entered the estuary - the "Katherine Johnstone" (1856) and the "Akitio" (1906). The large (1020 tons) fully-rigged iron ship "Pleiades" was beached at Akitio in 1899. (2).

Site Importance:

International

National

Regional

Local

Unknown

Comment: Presence of breeding threatened species important, but overall conservation values are lower than nearby Owahanga River estuary because this site is smaller and has greater human modification and use (pers. obs.)

Existing Threats: a,b,f,g

Type & Comment:

Land clearance in the catchment of the Akitio River has led to erosion and a high sediment load in the river (1). Sea erosion has eaten into the spur at the base of the northern spit, and into the bank immediately south of the estuary (1,3 pers. obs.). About every 5-7 years gravel is extracted 50-100m south of the Akitio River mouth (3). Shore stabilisation work has taken place along the southern side of the estuary and the coast towards Akitio township, some of which was to protect the urupa (3, pers. obs.). Fishing boats are launched off the Akitio beach from tractor-towed cradles (1) and this damages the natural and aesthetic values of the beach.

Human Modification and Human Use: a,d,h,i

The surrounding land has been cleared for farming, and Pinus radiata has been planted on the spur that forms the base of the northern sandspit, on hillsides behind the estuary, and behind Akitio township. The township has about 40 houses and baches, a primary school and a camping ground. Other houses, including several old homesteads, are situated along the banks of the estuary. A road runs along the southern coast, follows the south bank of the river and crosses the river 1km upstream from its mouth. Fishing boats are launched from the beach near Akitio township on tractor-towed cradles. Main forms of recreation are walking, swimming, picnicking, fishing, boating and camping (4).

Existing Protection: c,i

Type & Comment:

Local: Recreation Reserve (0.6ha), Esplanade Reserve (1km=2ha), Plantation Reserve (5ha).
Other: Maori Cemetery reserve (c. 0.1ha).

Availability of Information:

Natural	①	2	3
Cultural	1	②	3
Historic	①	2	3
Threats	①	2	3
Human Mod. & Use	①	2	3

1. Well documented
2. Limited information (general)
3. Little information (if any)

Comment:

The Wairarapa District Coastal Resource Inventory (1) contains a good series of oblique aerial photographs which allow an assessment of the natural values, threats and human modification and use of this site.

Sources of Information:

Natural	①	②	③	4	5	⑥	7
Cultural	①	2	③	4	5	6	7
Historic	①	2	③	4	5	6	7
Threats	①	2	③	4	5	⑥	⑦
Human Mod. & Use	①	②	③	4	5	⑥	7

1. Derived info. from existing literature & databases
2. Derived info. as above & field check
3. Derived from existing maps & aerial photographs
4. Recent DOC survey including sampling & analysis
5. Recent DOC survey excluding sampling & analysis
6. Experience
7. Expert opinion

Comment:

1. McAlpine, G. 1989. Wairarapa District Coastal Resource Inventory. Department of Conservation, Wellington. (Unpublished collection of scientific papers, database information, letters, and a series of oblique aerial photographs of the Wairarapa coast).
2. Ingram, C.W.N. 1977. New Zealand Shipwrecks, 1795-1975. A.H. & A.W. Reed, Wellington. 464 pp.
3. Smith, R.W. 1987. District Engineer, Dannevirke District Council. in litt. (In ref. (1)).
4. Turner, G.A.; Carlin, W.F.; Kimber, W.A.; Dobbie, B.J. 1983. Coastal Reserves Investigation and Proposals : Report on Dannevirke County. Department of Lands and Survey, Wellington. 30pp.

Recorded on Existing Databases:

Comment:

1. WERI - Insufficient information (1982)
2. SSWI - Not recorded (1985)
3. PNA - No sites listed (1984)
4. Geopreservation - No sites recorded (1989)
5. HPT County Inventories - No sites recorded (1987)
6. Other - Amphibian and Reptile Distribution Scheme - no records (1988)
7. None

Other Considerations:

Accompanying Maps
and Photographs:
