

**WILDLIFE AND WILDLIFE
HABITATS IN THE
EAST CAPE REGION**

G. RASCH
Under contract to the Department of Conservation
1989

REGIONAL REPORT SERIES NUMBER 12

DEPARTMENT OF CONSERVATION
BOX 1146
ROTORUA

ISSN 0113 - 3799

TABLE OF CONTENTS

	PAGE
1. INTRODUCTION	
1.1 Wildlife in New Zealand	1
1.2 Description of the Study Area	2
1.3 Topography and Geology	2
1.4 Ecological Regions and Districts	4
1.5 Vegetation	6
1.6 Human Settlement and Influence	6
1.7 Wildlife	7
2. METHODS AND RESULTS	
2.1 Methods	9
2.2 Results	10
2.3 Presentation	12
3. FORESTS IN THE EAST CAPE REGION	
3.1 Type and Extent	13
3.2 Significant Forests in the East Cape Region	13
3.3 Schedule of Forest Sites	18
4. SCRUB AND SHRUBLANDS IN THE EAST CAPE REGION	
4.1 Type and Extent	68
4.2 Schedule of Scrub and Shrublands Sites	69
5. FRESHWATER WETLANDS AND LAKES IN THE EAST CAPE REGION	
5.1 Type and Extent	85
5.2 Significant Freshwater Wetlands and Lakes in the East Cape Region	85
5.3 Schedule of Freshwater Wetlands and Lakes	89
6. COASTAL SITES IN THE EAST CAPE REGION	
6.1 Type and Extent	103
6.2 Significant Coastal Sites in the East Cape Region	103
6.3 Schedule of Coastal Sites	105

	PAGE
7. WILDLIFE IN THE EAST CAPE REGION	
7.1 Introduction	115
7.2 Mammals	115
7.3 Birds	116
7.4 Reptiles and Amphibians	123
7.5 Freshwater Fish	125
7.6 Invertebrates	126
8. RECOMMENDATIONS	127
ACKNOWLEDGEMENTS	128
LITERATURE CITED	129
APPENDICES	
1. Criteria for Ranking Sites of Special Wildlife Interest	135
2. Endangered and Threatened Species	137
3. WERI Wetlands Not Surveyed	138
4. Scientific Names of Species in Text	139
5. Distribution Maps of Fauna	144
6. Checklist of Birds in the East Cape Region	156
INDICES	
1. Alphabetical List of SSWI	160
2. Numerical List of SSWI	165
3. Ecological District List of SSWI	170
LIST OF TABLES	
1. Number of SSWI by Type and District	11
2. Total Area of SSWI by Type and District	11
3. Average Area of SSWI by Type and District	11
4. Ranking of SSWI	11
5. Lizard Records in the East Cape Region	124
LIST OF MAPS	
1. The Study Area	3
2. Ecological Regions and Districts on East Cape	5
3. Sites of Special Wildlife Interest in the East Cape Region	Inside Back Cover

Front Cover: The North Island Weka, once found throughout the North Island, is now limited to the East Cape region, except for a few small populations established artificially. It is found in a variety of forest, scrub and shrubland habitats. (Artwork by Cathy Jones, Hamilton.)

CHAPTER 1. INTRODUCTION

1.1 Wildlife in New Zealand

New Zealand's unique wildlife is the product of a long period of isolation. Separated 80 million years ago from the large continental mass of Gondwanaland, the land which became the New Zealand islands drifted away without any mammals, although two species of bats established themselves naturally (Moynihan 1986). This absence of this highly competitive class of animals had a profound effect on the evolution of endemic birds, reptiles, amphibians, and invertebrates. Many primitive animals, such as the tuatara and the *Leiopelma* frogs survived in New Zealand while their relatives became extinct elsewhere. In the absence of large predators, flightless birds were abundant (e.g. moa, kiwi, weka, kakapo and takahe). Flowers and foliage, usually the diet of browsing mammals, were standard fare for some birds. Overall, their behaviour was less timid and wary than species on the continents. It was a small, anomalous world, evolving in a different way from the rest of the globe.

Before the arrival of humans, New Zealand was covered primarily in forest (Froude *et al.* 1985), and much of its native wildlife depended on this habitat¹. The introduction of humans into this scenario was devastating. People cleared the forests for timber or to make way for pasture, crops, roads, houses, and towns. Wetlands were drained for farmland. Equally if not more damaging was the introduction of browsing and predatory mammals, released deliberately or accidentally. The native fauna had to cope with the loss of habitat and the effects of a class of animal they never had evolved with. Some of the native species were able to adjust to the changed environment (bellbirds and tui, for example), but other species (kokako, tuatara, and blue duck) were restricted to those areas which were least modified, or simply vanished altogether (huia, laughing owl, piopio).

By the early twentieth century the dramatic impact on the native wildlife and their habitat was largely over, but the effects are still felt today as habitat continues to be destroyed or altered. Many species are still declining. As with all things which become rare, unusual or in danger of being lost, the value of the remaining natural areas and wildlife has increased in recent decades. Efforts are being

1. 'Habitat' is defined to mean the features of the environment which an animal depends upon to live. Although habitat may be 'unnatural', for example gardens and orchards, unless otherwise stated, habitat as used here refers to the natural environment.

NAME	NUMBER	GRID REFERENCE	AREA (HA)	DESCRIPTION
Deer Pen Pond	500	N104/4341-4108	0.5	Raupo-sedge wetland with 80% open water. Surrounded by paddock. Grazed. A few waterfowl species present. Private.
Lake Rotoroa	508	N105/4449-4049	15	Raupo-willow wetland with 90% open water. Grazed. Waders and waterfowl present including bittern, dab-chick, and scaup. DOC/Private.
Mangaone Pond	510	N105/4468-4070	0.3	Shallow raupo-sedge wetland with manuka, bordered by kahikatea. Grazed. Spotless crane present. Pigeon in forest. Private.
Pohue Road Pond	529	N115/4552-3967	0.2	Rush-sedge-raupo wetland with little open water. Cabbage tree and manuka. Spotless crane present. Private.

CHAPTER 6 COASTAL SITES IN THE EAST CAPE REGION

6.1 Type and Extent

The East Cape coastline is very steep and irregular, and includes many headlands, coves, beaches, and terraces. Along the coastline from East Cape to Mahia, there is a series of wave platforms where waves have cut into the bottom of papa and limestone cliffs (Morton & Miller 1968). Rock stacks and small islands are of importance as roosting and nesting sites to terns, petrels, gannets and muttonbirds. Because of upland erosion, the deposition of silt at the mouths of rivers is increasing the size of most beaches (Gibb 1981).

Despite the many rivers in the area, coastal wetlands are limited in extent. Wetlands are either tidal estuaries or enclosed lagoons. Large areas of estuarine habitat are usually the result of the drowning of river mouths, arising from the increase in sea levels or the sinking of land. The East Cape is rising, and therefore rivers tend to have narrow, downcutting channels. Except for Ohiwa and Waiapu, river mouth estuaries range from 2 - 200 ha in area.

Vegetation in these areas includes pohutukawa forests, dune plant communities, eelgrass mudflats or sandflats, mangrove swamps, rush and sedge saltmarshes, saltmeadows and shrublands (Department of Conservation undated). Most plants are specially adapted to cope with the stresses of salinity and tidal changes in water levels.

Because of the low population of humans in the East Cape region, coastal sites are less modified by human habituation here than in many other parts of the North Island. Indirectly, however, poor land use has damaged the local environment by causing flooding and erosion, scouring the land and removing plant and animal food sources from river beds and mouths.

6.2 Significant Coastal Sites in the East Cape Region

Ohiwa Harbour (SSWI 2)

Situated on the boundary of the East Cape region, the Ohiwa harbour is more typical of the Bay of Plenty coastline in its form and recent geological history. The harbour is of the drowned river valley type, resulting from infilling after large scale falls and rises of sea level. The Ohope and Ohiwa spits formed 500-1000 years before present (BP) to enclose the harbour. Like many of the other Bay of Plenty harbours and estuaries, the river mouth has slowly migrated eastwards. The harbour itself is very shallow with large areas of mud and sand flats exposed at low tide, comprising 70% of the harbour area. Six islands (once forming headlands) are in the harbour: Uretara, Ohatana, Patawa, Hokianga, Tern and Motuotu. Twelve streams and one river (Nukuhou) flow into the harbour, providing a low input of fresh water (Daniel 1984). Vegetation communities include: rush and sedge saltmarshes, eelgrass

mudflats, and the southernmost mangrove community on the eastern coast of New Zealand.

Thirty-five species of birds have been seen along the harbour, including banded dotterel, North Island fernbird, New Zealand dotterel, Caspian tern, white heron, Australasian bittern and banded rail (all threatened or endangered species). Winter migrants include eastern bar-tailed godwits, tattler species, knot, turnstone, golden plover, far-eastern curlew, and whimbrel species (Ornithological Society records).

Although the harbour is close to a natural state, it has been modified on its periphery by burning and grazing. Pollution from dairy farming and residential areas enters the harbour in low levels. Reclamation has reduced habitat, and stopbanking and culverts alter the environment. Rubbish dumping, road construction, and invasion of exotics lower the quality of the wildlife habitat (Daniel 1984).

Wherowhero Estuary (SSWI 400) and Waipaoa River Mouth Lagoons (SSWI 399)

These estuaries are not as highly ranked as the previous harbour, but they are the best example of the typical estuary on the East Cape. The narrow Waipaoa widens near its mouth to form an estuary and lagoons near Gisborne city. The area is composed of rush and sedge wetland vegetation, and pasture dunes. Numerous exotic plants, like pampas, marram, and Spartina are invading and lowering the quality of the habitat. The quality of the area was severely affected by the effects of Cyclone Bola in 1988 (A. Bull, pers. comm.).

Thirty-four species of coastal waders and shorebirds are found on the estuary, including wrybills, Caspian tern, banded dotterel, New Zealand dotterel, golden plover, white heron and royal spoonbill. Other seasonal migrants include eastern bar-tailed godwit, little egret, Asiatic whimbrel, pectoral sandpiper, and red necked stint (based on Ornithological Society records).

OPOTIKI COUNTY- COASTAL AND ESTUARINE WETLANDS

(See page 18 for explanation of column headings)

OUTSTANDING

NAME	NUMBER	MAP REFERENCE	AREA (HA)	DESCRIPTION
Ohiwa Harbour, incl. Motuoto Island NR, Patawa I. Sci R Tern Island WMR Oropi Spit WR Uretara I SR	2	N69,78/4565-5185	2 600	Sand and mud flats, jointed rush saltmarsh, mangroves (southern limit), and pohutukawa forest in estuary. NZ dotterel and banded dotterel breeding area. Bittern, banded rail, reef heron, white heron, Caspian tern, spotless crane and fernbird present. Many waders including knots and godwits. Migrants. DOC/ Maori/Land of the Crown.

HIGH

NAME	NUMBER	MAP REFERENCE	AREA (HA)	DESCRIPTION
Waitewake River Mouth	76	N62/5397-5698	2	Spinifex on shingle and rush-sedge estuarine vegetation progressing to dune vegetation. NZ dotterel breeding, banded dotterel and other waders present. Land of the Crown.
Whangaparaoa River Bar	78	N62/5410-5702	30	Tidal estuary with small areas of mudflats, shingle bars, raupo and rushes. Wide range of waders, waterfowl and field birds including banded dotterel, NZ dotterel (both breeding) and bittern (reported). Land of the Crown.

MODERATE-HIGH

NAME	NUMBER	MAP REFERENCE	AREA (HA)	DESCRIPTION
Waiotahi Estuary, incl. Waiotahi Spit Scenic Reserve	7	N69,78/4624-5205	100	Extensive mudflat to dune progression with rush, ribbonwood and flax. Banded rail, reef heron, NZ dotterel, and fernbird present. Common coastal birds including shags and waders. DOC/Private/Land of the Crown.

NAME	NUMBER	MAP REFERENCE	AREA (HA)	DESCRIPTION
Waiaua River Mouth	39	N70/4815-5213	40	Raupo-rush tidal wetland. Dunes with mostly exotic vegetation. Small amount of estuarine wetland and mangrove vegetation. Diverse waterfowl and wader birds, including NZ dotterel, banded dotterel, Caspian tern, reef heron, white heron, and bittern (reported). NZ falcon present. Land of the Crown.
Raukokore River Delta Wetland	65	N62/5280-5600	20	Estuarine-freshwater wetland system with raupo-rush-sedge vegetation with flax, dune vegetation and pohutukawa. Banded dotterel breeding. Caspian tern present. Common waterfowl present. Land of the Crown/Maori.
Whangaparaoa Swamp	77	N62/5405-5685	80	Estuarine-influenced raupo-sedge wetland backing onto dunes with much exotic vegetation. Fernbird, spotless crane, and bittern present. Many field birds and some waders. Private.

MODERATE

NAME	NUMBER	MAP REFERENCE	AREA (HA)	DESCRIPTION
Tokaroa Rock	47	N70/4966-5316	1	Single rock outcrop, 20 m high. Breeding colony of white fronted terns and red billed gulls. Land of the Crown.
Motu River Mouth	52	N70/5015-5363	150	Largely gravel bed with exotic vegetation and a small amount of raupo. Banded dotterel and NZ dotterel breeding, reef heron present. Waders, waterfowl, and field birds present. Land of the Crown/Private.

NAME	NUMBER	MAP REFERENCE	AREA (HA)	DESCRIPTION
Awanui Pied Shag Colony	55	N62/5074-5443	0.25	Narrow band of pohutukawa on rocky coast. Breeding colony of several hundred pied shags. Land of the Crown.

POTENTIAL

NAME	NUMBER	MAP REFERENCE	AREA (HA)	DESCRIPTION
Haparapara River Mouth	54	N62/5077-5433	20	Rush-sedge wetland with some raupo and exotic grasses and weeds in braided river mouth. Banded dotterel present. Other wader and field birds present. Land of the Crown.

NAME	NUMBER	MAP REFERENCE	AREA (HA)	DESCRIPTION
Hicks Bay Estuary and Beach	105	N62/5696-5680	120	Estuarine wetland and freshwater rush-sedge wetland behind dunes. Dune vegetation includes Spinifex and marram grass. NZ dotterel, banded dotterel breeding. White heron reported. Waterfowl, waders and field birds present. Land of the Crown.
Karakatuwhero River Estuary	120	N63/5743-5630	30	Shingle river mouth with rushes in lagoon and dunes. Large number of nesting coastal birds, including banded dotterel. Land of the Crown.
Waiapu River	157	N72/5835-5425	1 400	Shingle flood plain at river mouth. Common coastal birds. Banded dotterel present. Land of the Crown.

MODERATE

NAME	NUMBER	MAP REFERENCE	AREA (HA)	DESCRIPTION
Awatere River Mouth	121	N63/5777-5616	10	River mouth delta and beach. Human residential impact. Coastal species including banded dotterel, shags, and gulls. Land of the Crown.
Orutua Coast	124	N63/5870-5607	150	Mudstone, dunes, pasture and rivermouth. Common coastal wader and waterfowl in low numbers. Land of the Crown.
East Island	130	N63/5967-5538	8	Steep-sided island with grass and coastal shrubland. Fluttering and sooty shearwaters nesting. Blue penguin present. DOC.

WAIAPU COUNTY- MODERATE, cont.

NAME	NUMBER	MAP REFERENCE	AREA (HA)	DESCRIPTION
Kurutau Trig Shag Colony	160	N72/5825-5357	1	Pied shag nesting colony in clump of pohutukawa trees. Little shags also present. Land of the Crown /Private.
Motuori Island	230	N89,90/5715-4868	30	Coastal broadleaved shrubland. Black-backed gulls nesting. Various shorebirds present. Weka present. Maori.

HIGH

NAME	NUMBER	MAP REFERENCE	AREA (HA)	DESCRIPTION
Mitre Rocks	276	N89,90/5719-4714	1	Steep rocks covered in boxthorn, grass, and bare rocks. Muttonbird burrows present. Land of the Crown.
Gannet Rock	278	N89,90/5723-4664	1	Bare soft sandstone rock with 200 or more gannet nests. Land of the Crown.
Wherowhero Estuary	400	N107/5315-4283	140	Salt meadow and mudflats, Spartina invading. High number of waders including wrybill, banded dotterel, royal spoonbill, and Caspian tern. Land of the Crown.
Waiparapara Stack	464	N107/5286-4082	0.1	Small rock stack with shrub/herb vegetation; Grey faced petrel breeding. Private.

-110-

MODERATE-HIGH

NAME	NUMBER	MAP REFERENCE	AREA (HA)	DESCRIPTION
Uawa River Estuary	275	N89,90/5680-4715	200	Spartina mudflats, rush-sedge estuarine wetland and dune vegetation. Gorse, boxthorn invasive. Diverse wader and field species including banded dotterel and reef heron. Land of the Crown.

COOK COUNTY- MODERATE-HIGH, cont.

NAME	NUMBER	MAP REFERENCE	AREA (HA)	DESCRIPTION
Pourewa Island	277	N89,90/5718-4705	65	Heavily modified mixed shrubland with many exotics. Grazed. Breeding populations of common seabirds, unused muttonbird burrows. Maori.
Waipaoa River Mouth Lagoon	399	N98/5319-4308	30	Pasture-dune area with extensive mudflats. Rushes. Eastern golden plover and wrybill present. Common seabird species. Land of the Crown/Private.

MODERATE

NAME	NUMBER	MAP REFERENCE	AREA (HA)	DESCRIPTION
Whangara Estuary	352	N98/5595-4474	10	Tidal estuary with dunes, mudflats and estuarine vegetation. Banded dotterel present. Other waders and waterfowl. Land of the Crown.
Orongo Lagoon	401	N107/5325-4256	12	Rush wetland with grasses. Some open water. Grazed. Waders and waterfowl present. Private.

-111-

POTENTIAL

NAME	NUMBER	MAP REFERENCE	AREA (HA)	DESCRIPTION
Sponge Bay Lagoon	402	N98/5427-4328	5	Coastal sandspit with rushes in lagoon. Resting place for migrant waders. Land of the Crown.

NAME	NUMBER	MAP REFERENCE	AREA (HA)	DESCRIPTION
Mahanga Stack	467	N117/5271-3976	0.2	Rock stack with coastal shrubs and flax on top. Grey faced petrel burrows, one of few colonies remaining on mainland. Land of the Crown.
Portland Island	478	N126,127/5235-3625	150	Island has been cleared and is in grass. Rock platform, stacks, and cliffs bordered by Spinifex sand dunes. Breeding area for black winged petrel and red-billed gulls. Banded dotterel and Caspian tern present. Common shorebirds present. Maori corporation.
Whakaki Lagoon	484	N116/4945-3922	280	Large rush-sedge wetland with mostly open water. Water quality lowered by artificial outlet. Large number of water and waterfowl birds including white heron, bittern, dabchick, spotless crane, grey teal, and shoveler. Paradise shelduck moulting site. Seasonal visitors include wrybill, golden plover, and sandpiper species. Maori.
Whakamaki Lagoon	489	N116/4805-3902	13	Coastal lagoon at Wairoa River mouth. Grazed. Numerous waterfowl and waders including wrybill, banded dotterel, bittern, fernbird and spotless crane. Wairoa County Council/DOC lease.

MODERATE HIGH

NAME	NUMBER	MAP REFERENCE	AREA (HA)	DESCRIPTION
Nuhaka River Mouth	479	N116/5133-3903	60	Narrow river mouth with rush wetland, sand flats and marram dunes. Banded dotterel breeding. Caspian tern, NZ shoveler present. DOC/Private.

Wairoa District- Moderate-High, cont.

NAME	NUMBER	MAP REFERENCE	AREA (HA)	DESCRIPTION
Patangata & Paka Lagoons	483	N116/4995-3913	4	Raupo-rush wetlands surrounded by introduced dune plants. Water and waterfowl present including banded dotterel, bittern and spotless crane. Maori.
Te Paeroa or Korito Lagoon	485	N116/4910-3920	70	Raupo wetland with 70% open water. Relatively unmodified. Dried up in 1985, embankment added to hold water. Bittern and spotless crane present. Waterfowl and waders including Canada geese (breeding). Maori.
Ohuia Lagoon	487	N116/4867-3910	25	Coastal lagoon with limited vegetation. Common waterfowl, Canada geese nesting. Maori.
Ngamotu Lagoon Wildlife Management Reserve	488	N116/4835-3908	101	Coastal lagoon with saltmarsh communities on sand and shingle. Banded dotterel, white heron and least golden plover present. Southern black backed gull colony. Other waterfowl and waders present. DOC.

MODERATE

NAME	NUMBER	MAP REFERENCE	AREA (HA)	DESCRIPTION
Wairau Lagoon	486	N116/4893-3915	11	One of a chain of coastal lagoons. Dries up annually. Good cover. Common waterfowl. Maori.
Mohaka Spit	535	N115/4602-3830	10	Rivermouth, sand and shingle beach and lagoon. One of few estuarine habitats along this coast. Good numbers of gulls and shags. Land of the Crown.

POTENTIAL

WAIROA DISTRICT

NAME	NUMBER	MAP REFERENCE	AREA (HA)	DESCRIPTION
Nuhaka Dune Slacks	481	N116/5109-3914	3	Water-filled dune depressions with some rushes and exotic vegetation. Grazed. A few waders and waterfowl. Least golden plover present. Private.
Blucks Pit Road Lagoon	482	N116/5083-3910	2	Small saline wetland with raupo-rush vegetation, surrounded by dunes with exotic vegetation. Rubbish dumped. Intermittent use by common waterfowl. Private.

CHAPTER 7 WILDLIFE IN THE EAST CAPE REGION

7.1 Introduction

This chapter provides a brief overview of the wildlife found on the East Cape. Scientific names are given in Appendix 4 and distribution maps are shown in Appendix 5.

7.2 Mammals

Native Mammals. New Zealand has only two native species of mammals, the long- and short-tailed bats. The ranges of the short-tailed and the long-tailed bat have declined markedly since European colonisation because of destruction of their forest habitat. It has been suggested that the short-tailed bat will decline to the point of endangerment in the near future (Daniel & Williams 1984). Cats may kill significant numbers. Knowledge of bat distribution is sketchy due to their nocturnal/crepuscular habits (Daniel & Williams 1984). They are also difficult to tell apart, so records usually do not indicate which species is present. Scattered records for the short-tailed bat come from Urewera, Te Araroa, and at East Cape. Most unidentified species records are probably long-tailed bats (Daniel & Williams 1984), in which case this species is distributed in Urewera, parts of the Raukumara range, and in a few other isolated areas (Appendix 5, Map 1).

Introduced Mammals. As in all parts of New Zealand, the introduction of mammals has had a profound effect on the endemic wildlife of the area.

Goats have been on the East Cape since 1840, when they were released at Opotiki. Further liberations took place at Oponae and Toatoa in the 1950s (Jane 1979). At present the bush is constantly invaded by escapees from farms. These animals are considered the most serious threat to forest quality in Urewera (Department of Conservation 1988) and Raukumara (New Zealand Forest Service 1982a). Control operations were begun in the Otara catchment (Urutawa State Forest) in 1959, because of downstream floods at Opotiki in 1964 and 1966, and to prevent their spread into the Urewera (Llewellyn 1984). The forest modification in the Otara was severe due to these animals (Jane 1979).

Red deer were liberated at Rukuri in 1916, at Waimana in 1917 and at Te Whaiti and Lake Waikaremoana in the period 1885-1923 (Department of Conservation 1988). The population peaked in the Urewera in the late 1950s and 1960s (Knowlton 1982). They spread up the Waioeka from Waikaremoana and peaked in the Otara catchment in the late 1970s (Llewellyn 1984). The Urewera animals were also the source of the Raukumara population which is still building up at present (New Zealand Forest Service 1982a). Numerous control efforts have taken place in the Urewera through recreational and commercial hunting, live animal recovery, and government hunting.