WILDLIFE SURVEY OF THE MOTUROA ISLANDS

By G. P. ADAMS
N.Z. Wildlife Service

SUMMARY

Bird species found on the islands of the Moturoa Group are listed and other natural features such as physiography and vegetation briefly described. The presence of other animals is mentioned and the history of the group outlined.

INTRODUCTION

From 7 to 16 September, 1968, two members of the Wildlife Service, Department of Internal Affairs, visited the Moturoa Islands primarily to determine their use by oceanic birds, and broadly to survey them as a habitat for other wildlife. The survey entailed the compilation of a bird list with notes on breeding, a brief botanical survey, and notes on other fauna.

PHYSIOGRAPHY

The Moturoa Group lies north of Cape Karikari at about 34°47'S, 173°22'E. The group comprises four small scrub-covered islands, two scrub-covered stacks partially attached to one island, two partly vegetated but independent stacks, and several smaller bare rocks (Fig. 1).

The main islands, from south to north, are: Whale, 25 acres, rising to 142' a.s.l.; Sugarloaf (also known as Pudding Island), 2-3 acres, 70' a.s.l.; Green, 13 acres, 120' a.s.l.; and Moturoa Island, 20 acres, 130' a.s.l.

All are similar insofar that each is a rocky dome surmounted by a layer of light clays and friable humus. Coastlines, in exposed places, are cliffs and in sheltered areas rocky platforms predominate.

Hillsides on all islands are moderately steep and eroding through petrel burrowing, especially on Moturoa, Green and Sugarloaf Islands. The slopes are divided by ridges and spurs into many differing aspects.

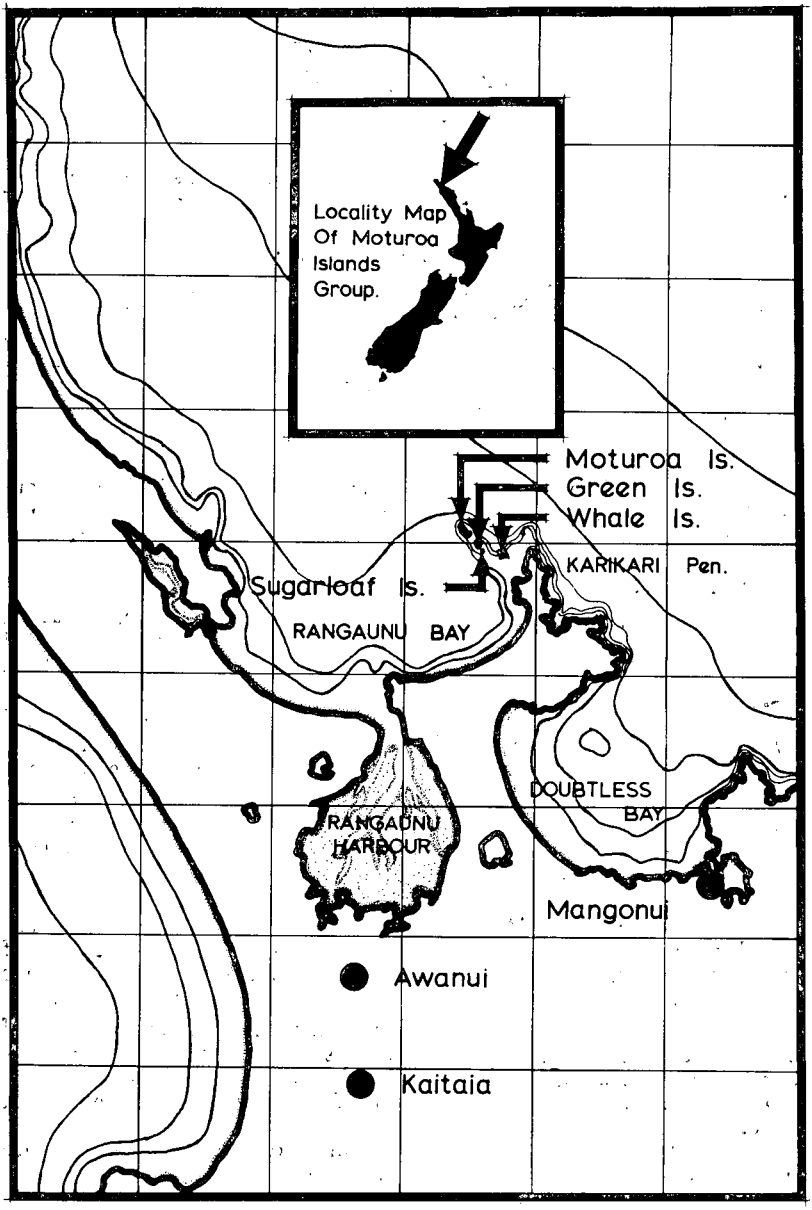
HISTORY

Fortunately, the Moturoa Group lies north of New Zealand's popular boating harbours, and has therefore escaped the attention of frequent visitors. The difficulty in landing on the three outer islands has no doubt helped to preserve them in their near-original state.

They are Maori-owned, and although there is no evidence of permanent occupation, the early owners have left their mark. A portion of Whale Island was, until recently, cultivated and cropped. Pigs were later turned out, the last of these being removed about 1966.

Early Maoris no doubt used the birds for food, and this practice has persisted until recently, as several 'birding' sticks made from fencing wire were found.

Whale Island seems to derive its name from the establishment there of an early whaling station. A large iron pot, as used in the whaling days, still remains. During the early 1900s soil was removed


Locality Map
Of Moturoa
Islands
Group.
Moturoa Is.
Green Is.
Whale Is.
KARIKARI Pen.
Sugarloaf Is.
RANGAUNU BAY
DOUBTLESS
BAY
RANGAUNU
HARBOUR
Mangonui
Awanui
Kaitaia

from the east side of Moturoa Island, and used as fertilizer. Fortunately this operation foundered. Considering all these phases of utilization it is remarkable that neither Polynesian nor European rats reached the islands.

VEGETATION

The plant communities on Moturoa, Green and Sugarloaf Islands are nearly identical and one description will suffice for all three. Whale Island has been modified by several means and, as a consequence, supports a very different vegetation. It appears to have been burnt within recent years and the plant cover is that of early plant succession; grasses, rushes, flax, toitoi, bracken and cabbage trees dominate the hillsides with scattered mingimingi and *Cassinia* on drier slopes. In damper coastal regions are dense thickets of taupata and *Hymenanthera;* and a narrow coastal belt of *Senecio lautus,* ice plant *(Disphyma); Salicornia,* renga lily and *Cotula* almost encircles the island. One medium-sized and two seedling pohutukawas grow on the north side. *Muehlenbeckia* occurs in tangles everywhere, but particularly on spurs. Two semi-attached rock stacks are similarly covered.

The three unmodified islands are almost entirely covered with dense taupata/*Hymenanthera* scrub about 18 inches high around their margins. Height increases to a fairly even canopy of 6 - 8 feet with odd plants emerging to 10 - 12 feet. Although taupata dominates most areas, *Hymenanthera* entangled by *Muehlenbeckia* dominates the spurs. In the occasional clearing *Cyperus,* flax and inkweed are early colonizers. A belt of *Senecio,* renga lily, *Disphyma,* and some *Salicornia* and *Samolus repens* extends around the outer soil margins and on areas of coastal erosion.

On these three islands the soil loss appears to be counterbalanced, at least in part, by the high proportion of leaves knocked from trees, particularly taupata, by incoming birds. Whereas the vegetation of the three outer islands is typical petrel scrub, the plant cover of Whale Island is similar to that of the adjacent mainland; and, as regeneration proceeds, it may be expected to remain similar but with some reinstatement of ' petrel scrub.'

BIRDLIFE

The islands have a very poor resident avifauna, especially of native species, but this is to be expected. The nature of the vegetation limits the variety of land birds, and the rocky shorelines the shore birds. Pelagic birds, although not represented by many species, are an extremely important feature of the islands, particularly of the three unmodified ones.

The following is the list recorded during our visit (see Table I):—

Blue Penguin *Eudyptula minor*

Very numerous on the three unmodified islands where it occurs throughout. Although numbers are not so great on Whale Island, they will no doubt increase as plant regeneration proceeds. Breeding occurs.

TABLE 1 — Distribution of Bird Species Recorded — Moturoa Island Group, 7 - 16 September, 1968

Species	Whale	Sugarloaf	Green	Moturoa	Others - stacks, rocks
Northern Blue Penguin	x b	x b	x b	x b	
Fluttering Shearwater	x b	x b	x b	x b	x o *
N.I.Allied Shearwater	x b	x b	x b	x b	
Grey-faced Petrel	x b	x o	x o	x b	
White-faced Storm Petrel	x o	x o	x o	x o	
Northern Diving Petrel	x b	x b	x b	x b	x o *
Australian Gannet					i
Pied Shag					x
Blue Reef Heron				x	x
Australasian Harrier	x				
Australian Brown Quail	x o			x o	
Northern Oystercatcher	x				
Southern Black-backed Gull	x	x	x	x	x
Red-billed Gull	x	x	x	x	x
Caspian Tern					x
White-fronted Tern					x
Welcome Swallow	x o				
Blackbird				x	
New Zealand Pipit	x				
White-eye	x	x			
Greenfinch			x	x	
Goldfinch			x	x	
House Sparrow		x	x	x	
Starling	x		x	x	

x Recorded

b Breeding confirmed

o Breeding probably occurs

* Burrows on small stacks, probably of breeding colonies

i Since reported but requires confirmation

Fluttering Shearwater *Puffinus gavia*

Extremely abundant on Moturoa, Green and Sugarloaf Islands where burrowing was intense and occupied all soil areas. Numbers were low on Whale Island, except for slightly stronger colonies on the semi-attached stacks. Eggs were seen.

Allied Shearwater *Puffinus assimilis haurakiensis*

This species, although found on all islands, is scarce. Birds were scattered along ridges and spurs. Eggs were found but no young were seen.

Grey-faced Petrel *Pterodroma macroptera gouldi*

Moderate numbers of burrows occur on Whale Island, but only small numbers on the others. The bulk are found in flax and patches of *Cyperus*. [On the not-so-distant Cavalli Islands (Notornis 5: 112), these petrels have suffered heavily from burning and excessive mutton-birding. Ed.]

White-faced Storm Petrel *Pelagodroma marina maoriana*

This species was heard coming ashore onto Whale Island on 9 September — possibly the date of their first arrival. Birds had not been heard or seen on the two previous nights, nor was any evidence of their presence found. [At Mokohinau and the Alderman Islands, hundreds have been found coming ashore much earlier than this. Ed.] Active burrowing occurred on their first night ashore. On Whale Island this species was found on the southern face, where the grass *Stentaphrum secundatum* formed dense mats, and in areas of flax. On the other islands, the birds occupied higher ridges and spurs, usually among thickets of *Hymenanthera* and *Muehlenbeckia*. It is probable that this species is more numerous than observations indicate.

Diving Petrel *Pelecanoides urinatrix*

Burrows are extremely abundant over the three outer islands with fewer on Whale, although the adjacent rocky stacks hold good numbers. This species appears to be breeding in greater abundance on the outer margins of the islands. Eggs were seen.

Gannet *Sula serrator*

Several were seen flying offshore. It has since been reported that this species nests on a semi-bare rock off Cape Karikari, but this requires confirmation. [In mid-January 1971 Gannets were seen resting and alighting on a thickly white-washed rock off the northern end of Tokerau Beach and conveniently viewable from the De Surville memorial. Although three brown immature Gannets were seen in flight near the rock, conclusive evidence of breeding was not obtained. Ed.]

Pied Shag *Phalacrocorax varius*

Nine were counted on a bare rock off Moturoa Island. This species probably does not nest on the islands.

Blue Reef Heron *Egretta sacra*

One was seen frequenting Moturoa Island and nearby rocks.

Harrier *Circus approximans gouldi*

One Harrier was noted passing overhead each day whilst we were on Whale Island.

Australian Brown Quail *Synoicus ypsilophorus*

Five in a small covey were seen on Whale Island and two more on Moturoa Island.

Variable Oystercatcher *Haematopus unicolor reischeki*

One was seen on the shoreline of Whale Island and a pair occasionally flew past the island.

Southern Black-backed Gull *Larus dominicanus*

Small numbers around all islands.

Red-billed Gull *Larus novaehollandiae scopulinus*

Present in small numbers around all islands and rocks.

Caspian Tern *Hydroprogne caspia*

An occasional one was seen flying overhead.

White-fronted Tern *Sterna striata*

Forty-two were seen on a sea-swept rock close to Moturoa Island.

Welcome Swallow *Hirundo neoxena*

Four were observed on Whale Island. One pair was defending an area and attempting to nest in the remains of a hut.

Blackbird *Turdus merula*

One was seen on Moturoa Island.

Pipit *Anthus novaeseelandiae*

Two were seen on Whale Island.

White-eye *Zosterops lateralis*

A small number occurred on Whale and Sugarloaf Islands.

Greenfinch *Chloris chloris*

A few were observed on Green and Moturoa Islands.

Goldfinch *Carduelis carduelis britannica*

Small flocks were seen on Green and Moturoa Islands.

House Sparrow *Passer domesticus*

Two were recorded on Sugarloaf Island, with small numbers on Green and Moturoa Islands.

Starling *Sturnus vulgaris*

A roost containing several hundred was found on the semi-attached stack to the west of Whale Island. Other roosts were found on Green and Moturoa Islands which were used by several thousand birds. On clear evenings Starlings could be seen flying in, always from south-west.

GENERAL

It is possible that the larger species of *Procellariidae,* such as Sooty Shearwater *Puffinus griseus* and Flesh-footed Shearwater *P. carneipes* nest on these islands, but if they do they would probably be in small numbers only. From the large numbers of Penguins, Fluttering Shearwaters and Diving Petrels encountered, particularly on Sugarloaf, Green and Moturoa Islands, this group must rank among the more important for the breeding of these species in northern New Zealand.

No sign of rats was found, and the abundance and variety of skinks and geckos on all islands confirms their absence.

Although Tuataras had been reported from at least one of the islands, none was found, despite what appeared to be favourable habitat and weather.

DISCUSSION

Observations on all four islands show there was a tendency for petrels to occupy particular zones. This was particularly marked in some species. Grey-faced Petrels, although lightly scattered over a wide area of the islands, seemed to have a preference for dense sedge and patches of *Cyperus* and flax. White-faced Storm-petrels and Allied Shearwaters, although occupying the dense vegetation on the upper parts and ridges of the three unmodified islands, are perhaps attracted by dense vegetation rather than topography. This view is supported, in part, by the storm petrels' use of lower slopes in dense grasses on Whale Island.

The two most common species, Diving Petrel and Fluttering Shearwater, are generally common everywhere with a concentration around the marginal herbs and low, but compact, shrubs. However, in dense thickets entangled with *Muehlenbeckia* these species are almost absent, their place being taken by storm petrels and a few Allied Shearwaters.

The areas occupied by Diving Petrels and Fluttering Shearwaters are, in effect, the areas of climax vegetation. The *Coprosma/ Hymenanthera* association is the permanent inner cover and any modification, either natural or artificial, creates conditions whereby flax and *Cyperus* are often early colonisers. Grey-faced Petrels find this vegetation suitable, possibly because they obtain better access to the ground and thus exploit the area and prevent other species from using it. As plant succession proceeds, conditions become less attractive to them and other species begin moving in. The heavy entanglements of *Muehlenbeckia* may prevent larger bird species from using the ground beneath; thus, smaller birds such as White-faced Storm-petrels become the principal occupiers of such zones. The ridges and spurs where this occurs usually have less friable soil; and although soil content is sometimes greater, burrowing opportunities are fewer. As the *Muehlenbeckia* covers areas of high and low soil content it seems that the ability of a smaller bird to penetrate the tangles determines the use of such areas.

ACKNOWLEDGEMENTS

My thanks are due to Dr. G. R. Williams and Mr. D. V. Merton for critically reading the manuscript.