

Motuora p.u.

REPORT TO THE SCIENTIFIC COMMITTEE OF THE HAURAKI GULF MARITIME

PARK BOARD ON A VISIT TO MOTUORA ISLAND, APRIL 1988

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1. INTRODUCTION

Recent surveys Members of the Ornithological Society of New Zealand (OSNZ) have recently visited Motuora Island on three occasions. During a brief visit on 23 August 1987, John Dowding, Tim Lovegrove and Graeme Taylor compiled preliminary bird and plant lists for the island. A second trip, by 10 members of OSNZ from 9 - 11 October 1987, resulted in a more comprehensive bird survey, notes on other fauna and many additions to the plant list. The results of these two surveys are contained in a report¹ to the Scientific Committee of the HGMPB.

This report describes the results obtained by a team of 12 members of OSNZ, during a third survey of Motuora from 29 April - 1 May 1988. It also summarises findings from the three visits; included are an annotated list of the 45 bird species recorded so far and a list of the plants (14 ferns and more than 125 higher plants) found to date.

The main objectives of the third visit were as follows:

- a) to repeat the ornithological survey at a different time of the year,
- b) to band Grey-faced Petrels (*Pterodroma macroptera*) as they returned to the island to pair and clean out burrows,
- c) to note other aspects of the island's fauna, particularly lizards,
- d) to add to the plant list being compiled for the island.

Itinerary and party The survey team arrived on the island at 1600h on 29 April. That evening Grey-faced Petrel colonies were visited and 15 birds were banded. On 30 April, all accessible areas of the island were surveyed twice; in the evening 25 more Grey-faced Petrels were banded. On 1 May many parts of the island were covered a third time before the party departed at 1500h. Members of the party were:

Simon Chamberlin
John Dowding
Brigid Glass
Kane Glass
Sandy Higgins
Gordon McKenzie

Elaine Murphy
Libby Price
Kirsty Price
Kerry Price
Nan Rothwell
Graeme Taylor

¹ Dowding, J. (1987). Report on an ornithological survey of Motuora Island, 9-11 October 1987. Unpublished report, 8 pp.

2. BIRDS OF MOTUORA

Survey method During the morning of 30 April all accessible areas of each quadrant (see Figure 1) were surveyed by a team of three observers. All species seen or heard on or around the island were recorded and an estimate of abundance made. In the afternoon the survey was repeated with a different team assigned to each quadrant.

Results from the August, October and April surveys have been combined in Table 1; this presents a list of all bird species detected so far, with brief notes on location and abundance.

Species of note One species, Paradise Shelduck (*Tadorna variegata*), was recorded during the April survey but not in August or October. Eight species were recorded in August or October that did not appear to be present in April. Two of these, Spotted Shag (*Stictocarbo punctatus*) and Rock Pigeon (*Columba livia*), may be classified as occasional vagrants and one, the Shining Cuckoo (*Chrysococcyx lucidus*), is a summer migrant. The other five species were Grey Duck (*Anas superciliosa*), Skylark (*Alauda arvensis*), Song Thrush (*Turdus merula*), Greenfinch (*Carduelis chloris*) and Redpoll (*C. flammea*); these may be seasonal visitors to the island. Many more Tuks (*Prothemadera novaeseelandiae*) were recorded in October than in April. Large numbers of Tuks commonly visit islands in the Gulf in spring to feed on flowering trees and shrubs, and Motuora appears to be no exception.

Grey-faced Petrels These are the only seabirds that are known to breed on Motuora at the present time; they were presumably more numerous (and other seabird species were probably present) when the island was still bush-clad. Because of its proximity to the mainland, the island provides an easily-accessible population of this species for study. The locations of groups of burrows ('colonies') found are shown in Figure 1; these colonies vary in size from about five to 25 burrows with a few isolated burrows on cliff-faces in other parts of the island. Most are located on the seaward side of the island. A count of occupied or recently-used burrows in October suggested that approximately 90-100 pairs may still attempt to nest on Motuora.

In October 1987, 14 Grey-faced Petrels (13 chicks & 1 adult) were banded (band numbers E-153201 - 214). During the April 1988 trip, 40 adult or sub-adult birds were banded and details are shown in Table 2. It is hoped that the monitoring of this population will continue, particularly if the stock are removed and the island is allowed to re-vegetate.

Between 1958 and 1964 Simon Chamberlin banded approximately 350 petrels on Motuora. All birds handled were therefore examined for existing bands but none was found. This was not unexpected - few Grey-faced Petrels would be alive after 25-30 years and any that were would probably have lost their bands.

3. LIZARDS

As only one species of lizard had been identified on the two previous trips, three pitfall traps were installed for the duration of this visit. These were located in different habitats, viz. one in bush, one in a kikuyu/boxthorn association and one among driftwood at the back of a sandy beach. Traps were checked three times daily and removed on our departure. Although the traps yielded a considerable variety of invertebrate fauna, no lizards were caught. The only positively-identified species from the three trips is therefore the Northern Brown Skink (*Leiopisma moco*), one of which was seen at Still Bay in August. Lizards thus seem to be scarce (or particularly elusive) considering that the island is free of most of their normal predators.

4. PLANTS

During the visit on 23 August 1987, 68 ferns and higher plants were positively or tentatively identified; a further 38 were added to this list in October. During the April visit particular attention was paid to the smaller herbaceous plants. The plant list for the island now stands at approximately 140 species with a few specimens yet to be identified. This list is shown in Table 3; most ferns and native trees and shrubs still to be found on the island are believed to be included. As the bush has been removed from much of the island, some species are represented by only one or a few specimens; these include mamaku (*Cyathea medullaris*), kohekohe (*Dysoxylum spectabile*) and puriri (*Vitex lucens*).

Motuora has been inhabited and farmed for many years and it is therefore not surprising that adventive species are numerous. Many of these occur mainly or only around the houses at Home Bay and were either deliberately planted or have escaped from the homestead gardens. Plants still confined to these gardens have not been included in Table 3.

Four adventive species are well-established and may present problems. Kikuyu grass (*Pennisetum clandestinum*) is rampant in most parts of the island and would have to be controlled if the stock were removed. Three other species are common, particularly on cliff-faces bare of bush; these are bone-seed (*Chrysanthemoides monilifera*), gorse (*Ulex europaeus*) and boxthorn (*Lycium ferocissimum*).

5. FUNGI

Although no attempt was made to search for fungi, the following four species were noted: Fly Agaric (*Amanita muscaria*), Field Mushroom (*Agaricus campestris*), Shaggy Ink Cap (*Coprinus comatus*) and Common Puffball (*Lycoperdon* sp.).

6. CONCLUSIONS

It was noted in October 1987 that stock were gaining access to cliff-top bush around the island, in spite of the fact that these areas are fenced off. During the most recent visit it was clear that this is a continuing problem. In particular, three sheep were found to be crossing the fence regularly at a number of points and their browsing is clearly delaying regeneration of vegetation.

Motuora has been farmed for many years and lies only 3.6km from the mainland. It is therefore somewhat surprising that the island has neither introduced predators (rodents, cats, mustelids, hedgehogs) nor browsing mammals (goats, possums, rabbits) except the remaining stock. The island's value as a refuge for endangered species of invertebrates, lizards and ground-nesting birds is thus obvious. It has already been suggested as a potential site for a colony of Shore Plover (*Thinornis novaeseelandiae*); it could also be developed as an open sanctuary on similar lines to Tiritiri Matangi Island, perhaps populated with a complementary range of species.

Public interest and involvement in the Maritime Park in general, and the Tiritiri project in particular, is increasing and it seems likely that a large pool of voluntary labour would be available should it be decided to re-vegetate all or part of Motuora at some time. Interest in the island, and in our surveys of it, are reflected in an article in the Rodney & Waitemata Times of 10 May 1988; a copy of this article is reprinted as an Appendix to this report.

Lease is on a year to year basis. (1991 -

7. ACKNOWLEDGEMENTS

I am grateful to the Hauraki Gulf Maritime Park Board and to Neil Watson and family for use of accommodation on Motuora. Thanks are also due to the members of OSNZ (Auckland Region) who participated in these surveys. Many people assisted with the identification of plants collected on the island, but particular thanks are due to Ewen Cameron of the Botany Department, University of Auckland, Tim Lovegrove and Graeme Taylor.

Table 1. Annotated list of the birds recorded on and around Motuora Island

S = recorded in Spring (October trip), A = recorded in Autumn (April trip).

- BLUE PENGUIN (*Eudyptula minor*) Common at sea around the island and breeding at many points on the island (S); roosting ashore at night (A).
- GREY-FACED PETREL (*Pterodroma macroptera*) Approximately 100 pairs breeding; chicks found in burrows in October, adults ashore in April.
- FLESH-FOOTED SHEARWATER (*Puffinus carneipes*) Common off the east coast in October, only one seen in April; one ashore dead in April (S, A).
- BULLER'S SHEARWATER (*P. bulleri*) Very common offshore to the east in October, a few seen in April; one ashore dead in April (S, A).
- AUSTRALASIAN GANNET (*Sula bassana serrator*) Numerous offshore at most times, particularly to the east; one ashore dead in April (S, A).
- BLACK SHAG (*Phalacrocorax carbo*) One or two birds seen often, either flying past the island or roosting, usually at the northern end (S, A).
- PIED SHAG (*P. varius*) A few seen around the coast at most times (S, A).
- LITTLE SHAG (*P. melanoleucos brevirostris*) Four or five, recognisable by their different plumages, seen along the shoreline at most times (S, A).
- SPOTTED SHAG (*Stictocarbo punctatus*) One sighting, on 10 October 1987, of a single bird roosting on the rock platform at the northern end.
- LESSER FRIGATEBIRD (*Fregata ariel*) A rare vagrant to New Zealand from the south-west Pacific; one found dead on the island by T.R. Harty on 28 January 1987 is an unusual addition to the species list for the island.
- WHITE-FACED HERON (*Ardea novaehollandiae*) One or two birds present at all times, usually on the rock platforms or near farm ponds (S, A).
- PARADISE SHELDUCK (*Tadorna variegata*) One pair seen frequenting farm ponds and pasture during the April trip; not recorded in October.
- GREY DUCK (*Anas superciliosa*) Two pairs were present in October, the one at Macrocarpa Bay having five ducklings. Not recorded in April.
- AUSTRALASIAN HARRIER (*Circus approximans*) One or two to be seen hawking over the island at most times, but probably not breeding. (S, A).
- BROWN QUAIL (*Synoicus ypsilophorus*) Common around the homestead; also seen regularly in scrub areas at other points on the island (S, A).

WILD TURKEY (*Meleagris gallopavo*) Probably 12 adults and at least 10 chicks were seen in October; seven birds recorded during the April trip.

PUKEKO (*Porphyrio porphyrio melanotus*) Common and widespread (S, A).

VARIABLE OYSTERCATCHER (*Haematopus unicolor*) Two or three pairs present at all times in October; only two birds seen on the April trip.

SOUTHERN BLACK-BACKED GULL (*Larus dominicanus*) Common at all times.

RED-BILLED GULL (*L. novaehollandiae scopulinus*) A few seen around the coastline on most days but probably not breeding on the island (S, A).

CASPIAN TERN (*Hydroprogne caspia*) Often one or two offshore. The few pairs which nested at the northern end probably no longer do so (S, A).

WHITE-FRONTED TERN (*Sterna striata*) Common offshore at all times, roosting ashore on the northern rock platform in April (S, A).

ROCK PIGEON (*Columba livia*) One over the island on 10 October 1987 (S).

SHINING CUCKOO (*Chrysococcyx lucidus*) Several heard and one seen during the October trip; all appeared to have departed by the end of April (S).

MOREPORK (*Ninox novaeseelandiae*) Heard regularly at night; flushed on several occasions by day from bush-clad areas around cliff-tops (S, A).

NZ KINGFISHER (*Halcyon sancta vagans*) Common around the coast at all times; seemed particularly vocal during the October visit (S, A).

SKYLARK (*Alda arvensis*) Not common; three recorded in October (S).

WELCOME SWALLOW (*Hirundo tahitica neoxena*) Common at all times (S, A).

NZ PIPIT (*Anthus novaeseelandiae*) Probably two pairs resident; usually to be found on pasture near the centre of the island (S, A).

HEDGESPARROW (*Prunella modularis*) Heard quite often but seldom seen. Not uncommon in scrub areas, particularly at the southern end (S, A).

GREY WARBLER (*Gerygone igata*) Common in areas of bush and scrub (S, A).

FANTAIL (*Rhipidura fuliginosa*) Common throughout at all times (S, A).

SONG THRUSH (*Turdus philomelos*) One or two pairs found in each quadrant during the October survey; rather surprisingly none recorded in April (S).

BLACKBIRD (*T. merula*) Quite common in most parts of the island (S, A).

- SILVEREYE (*Zosterops lateralis*) Common; seen and heard throughout, with flocks of 10 - 30 seen around bush and scrub areas in April (S, A).
- TUI (*Prothemadera novaeseelandiae*) Numerous in October, particularly around the homestead; many fewer recorded during the April trip (S, A).
- YELLOWHAMMER (*Emberiza citrinella*) A few at all times, mostly on the open pastures and bush fringes of the central areas of the island (S, A).
- CHAFFINCH (*Fringilla coelebs*) Common; seen and heard in all areas (S, A).
- GREENFINCH (*Carduelis chloris*) A few seen in October but not common (S).
- GOLDFINCH (*C. carduelis*) Common; individuals and small flocks (5 - 20) were recorded in each quadrant on all three visits (S, A).
- REDPOLL (*C. flammea*) A few noted feeding among mixed flocks of finches in August; none recorded during the October or April trips however.
- HOUSE SPARROW (*Passer domesticus*) Several small flocks scattered about the island, one of them commonly around the homestead (S, A).
- STARLING (*Sturnus vulgaris*) Small groups in many places; occasionally a larger flock of 40 - 50 seen, usually in the northern quadrant (S, A).
- INDIAN MYNA (*Acridotheres tristis*) Two or three pairs resident; usually to be found around the homestead or in the western quadrant (S, A).
- AUSTRALIAN MAGPIE (*Gymnorhina tibicen*) About a dozen birds, usually in the west and south quadrants; two juveniles seen in October were very weak fliers, suggesting that they were hatched on the island (S, A).

Table 2. Grey-faced Petrels banded on Motuora Island, April 29 & 30, 1988¹

Date	Band number	Colony	Date	Band number	Colony
29-04-88	E-153286	5	30-04-88	E-153301	2
	287	5		302	2
	288	5		303	2
	289	5		304	3
	290	5		305	3
	291	6		306	3
	292	6		307	3
	293	6		308	3
	294	4		E-153405	8
	295	4		406	8
	296	4		407	8
	E-153401	3		408	8
	402	3		409	5
	403	3		410	5
	404	3		411	5
30-04-88	E-153297	2		412	5
	298	2		413	4
	299	2		414	4
	300	2		415	4
				416	7
				417	7

¹ Banding by members of Auckland OSNZ Seabird Group, banding permit number 0325.

Table 3. List of the ferns and higher plants found on Motuora Island

FERNS

<i>Adiantum aethiopicum</i>	NZ maidenhair
<i>Adiantum cunninghamii</i>	common maidenhair
<i>Adiantum hispidulum</i>	rough maidenhair
<i>Asplenium flaccidum haurakiense</i>	shore spleenwort
<i>Asplenium oblongifolium</i>	shining spleenwort
<i>Blechnum 'capense'</i>	klokio, cape fern
<i>Cyathea medullaris</i>	black tree fern, mamaku
<i>Doodia media</i>	rasp fern
<i>Phymatosorus diversifolius</i>	hound's tongue
<i>Pneumatopteris pennigera</i>	gully fern
<i>Polystichum richardii</i>	shield fern, pikopiko
<i>Pteridium esculentum</i>	bracken
<i>Pteris tremula</i>	trembling brake
<i>Pyrrhosia serpens</i>	leather-leaf fern

GYMNOSPERMS

<i>Cupressus macrocarpa</i>	macrocarpa
<i>Pinus radiata</i>	radiata pine

ANGIOSPERMS (native)

<i>Acaena novaezelandiae</i>	bidibid
<i>Apium prostratum</i>	native celery
<i>Arthropodium cirratum</i>	rengarenga lily
<i>Astelia banksii</i>	
<i>Atriplex prostrata</i>	orache
<i>Brachyglottis repanda</i>	rangiora
<i>Calystegia soldanella</i>	shore bindweed
<i>Carex flagellifera</i>	sedge
<i>Carmichaelia aligera</i>	tree broom
<i>Coprosma areolata</i>	
<i>Coprosma macrocarpa</i>	coastal karamu
<i>Coprosma macrocarpa x propinqua</i>	
<i>Coprosma macrocarpa x robusta</i>	
<i>Coprosma repens</i>	taupata
<i>Coprosma rhamnoides</i>	
<i>Coprosma robusta</i>	karamu
<i>Cordyline australis</i>	cabbage tree
<i>Coriaria arborea</i>	tutu
<i>Corynocarpus laevigatus</i>	karaka
<i>Dichondra repens</i>	Mercury Bay weed
<i>Disphyma australe</i>	native Ice-plant
<i>Dodonaea viscosa</i>	akeake
<i>Dysoxylum spectabile</i>	kohekohe
<i>Einadia triandra</i>	
<i>Entelia arborescens</i>	whau
<i>Geniostoma rupestre var</i>	hangehange
<i>Gnaphalium sphaericum</i>	cudweed

<i>Haloragis erecta</i>	
<i>Hebe macrocarpa</i>	
<i>Hebe stricta</i>	koromikō
<i>Hoheria populnea</i>	lacebark
<i>Juncus gregiflorus</i>	wiwi
<i>Leptocarpus similis</i>	wire rush
<i>Leptospermum scoparium</i>	manuka
<i>Lobelia anceps</i>	
<i>Macropiper excelsum</i>	kawakawa
<i>Meliccytus ramiflorus ramiflorus</i>	mahoe
<i>Metrosideros excelsa</i>	pohutukawa
<i>Muehlenbeckia complexa</i>	pohuehue
<i>Myoporum laetum</i>	ngalo
<i>Myrsine australis</i>	mapou
<i>Nertera</i> sp	
<i>Olearia furfuracea</i>	akepiro
<i>Oplismenus imbecillis</i>	bamboo grass
<i>Phormium tenax</i>	NZ flax
<i>Pimelea prostrata</i>	NZ daphne
<i>Pittosporum crassifolium</i>	karo
<i>Planchonella costata</i>	tawapou
<i>Poa anceps</i>	tussock
<i>Pseudognaphalium luteoalbum</i>	
<i>Pseudopanax lessonii</i>	houpara
<i>Rytidosperma</i> sp	
<i>Samolus repens</i>	
<i>Sarcocornia quinqueflora quinqueflora</i>	glasswort
<i>Scirpus cernuus</i>	
<i>Scirpus nodosus</i>	club rush
<i>Senecio hispidulus</i>	
<i>Senecio lautus lautus</i>	shore groundsel
<i>Solanum americanum</i>	
<i>Vitex lucens</i>	puriri

ANGIOSPERMS (adventive)

<i>Acacia ?menziesii</i>	wattle
<i>Allium triquetrum</i>	three-cornered garlic
<i>Anagallis arvensis</i>	scarlet pimpernel
<i>Arum ?maculatum</i>	
<i>Arundinaria ?japonica</i>	bamboo
<i>Asparagus scandens</i>	
<i>Cakile</i> sp	sea rocket
<i>Chrysanthemoides monilifera</i>	bone-seed
<i>Cirsium vulgare</i>	scotch thistle
<i>Conium maculatum</i>	hemlock
<i>Conyza albida</i>	fleabane
<i>Cortaderia selloana</i>	pampas
<i>Crepis capillaris</i>	hawksbeard
<i>Cyperus ?rotundus</i>	
<i>Cyperus eragrostis</i>	

<i>Dactylis glomerata</i>	cocksfoot
<i>Daucus carota</i>	wild carrot
<i>Erythrina</i> sp	coral tree
<i>Eucalyptus</i> sp	gum tree
<i>Galium aparine</i>	cleavers
<i>Geranium molle</i>	dovesfoot
<i>Geranium solandri</i>	
<i>Kniphofia uvaria</i>	red-hot poker
<i>Lantana</i> sp	
<i>Ligustrum ovalifolium</i>	privet
<i>Linum trigynum</i>	
<i>Lolium perenne</i>	perennial ryegrass
<i>Lotus</i> sp	birdsfoot-trefoil
<i>Lycium ferocissimum</i>	boxthorn
<i>Malva</i> sp?	mallow
<i>Medicago arabica</i>	spotted medick
<i>Medicago polymorpha</i>	fimbriate medick
<i>Melilotus indica</i>	King Island mellilot
<i>Modiola caroliniana</i>	
<i>Nasturtium officinale</i>	watercress
<i>Nerium oleander</i>	oleander
<i>Orobanche minor</i>	broomrape
<i>Paspalum dilatatum</i>	paspalum
<i>Pennisetum clandestinum</i>	kikuyu
<i>Physalis peruviana</i>	cape gooseberry
<i>Phytolacca octandra</i>	inkweed
<i>Picris echioides</i>	bristly oxtongue
<i>Picris</i> sp	
<i>Plantago lanceolata</i>	ribwort
<i>Plantago major</i>	broad-leaved plantain
<i>Prunella vulgaris</i>	selfheal
<i>Ranunculus repens</i>	creeping buttercup
<i>Robinia pseudacacia</i>	false acacia
<i>Rumex brownii</i>	swamp dock, hooked dock
<i>Salix cinerea</i>	sallow
<i>Salix fragilis</i>	crack willow
<i>Scabiosa</i> sp	scabious
<i>Senecio</i> sp?	
<i>Sonchus oleraceus</i>	puha, sow thistle
<i>Sporobolus africanus</i>	ratstail
<i>Tamarix ?anglica</i>	tamarisk
<i>Taraxacum officinale</i>	dandelion
<i>Trifolium repens</i>	white clover
<i>Ulex europaeus</i>	gorse
<i>Verbascum creticum</i>	cretan mullein
<i>Verbena littoralis</i>	
<i>Vicia hirsuta</i>	hairy vetch
<i>Vicia sativa</i>	common vetch
<i>Vinca major</i>	periwinkle
<i>Yucca</i> sp	yucca

Appendix 1. Threatened species suitable for consideration for Motuora Island.

Note: not all of the species listed above will be compatible (some are mutually exclusive, eg weka and reptiles etc) and the final choice of species for the island will need to take into consideration the department's transfer guidelines.

A. Regionally threatened or local species with restricted populations

Animal

- Brown teal
- Pycroft's petrel
- Buller's shearwater
- NI weka
- NI saddleback
- Parakeet sp.
- Fernbird
- NI robin
- Whitehead
- NI rifleman
- Tuatara
- Duvaucel's gecko
- Macgregor's skink
- Robust skink
- Whitaker's skink
- Placostylus sp.
- Paraphanta sp.
- Giant weta sp.

Plants

- *Streblus banksii*
- *Pisonia brunonianum*
- *Pomaderris* spp.
- *Hebe speciosa*
- *Carmichaelia williamsii*
- *Pratia physaloides*
- *Euphorbia glauca*
- *Ranunculus urvilleanus*
- *Celmisia adamsii*
- *Desmoschoenus spiralis*
- *Lepidium oleraceum*
- *Leptinella rotundata*
- *Asplenium pauperequitum*

B. National list

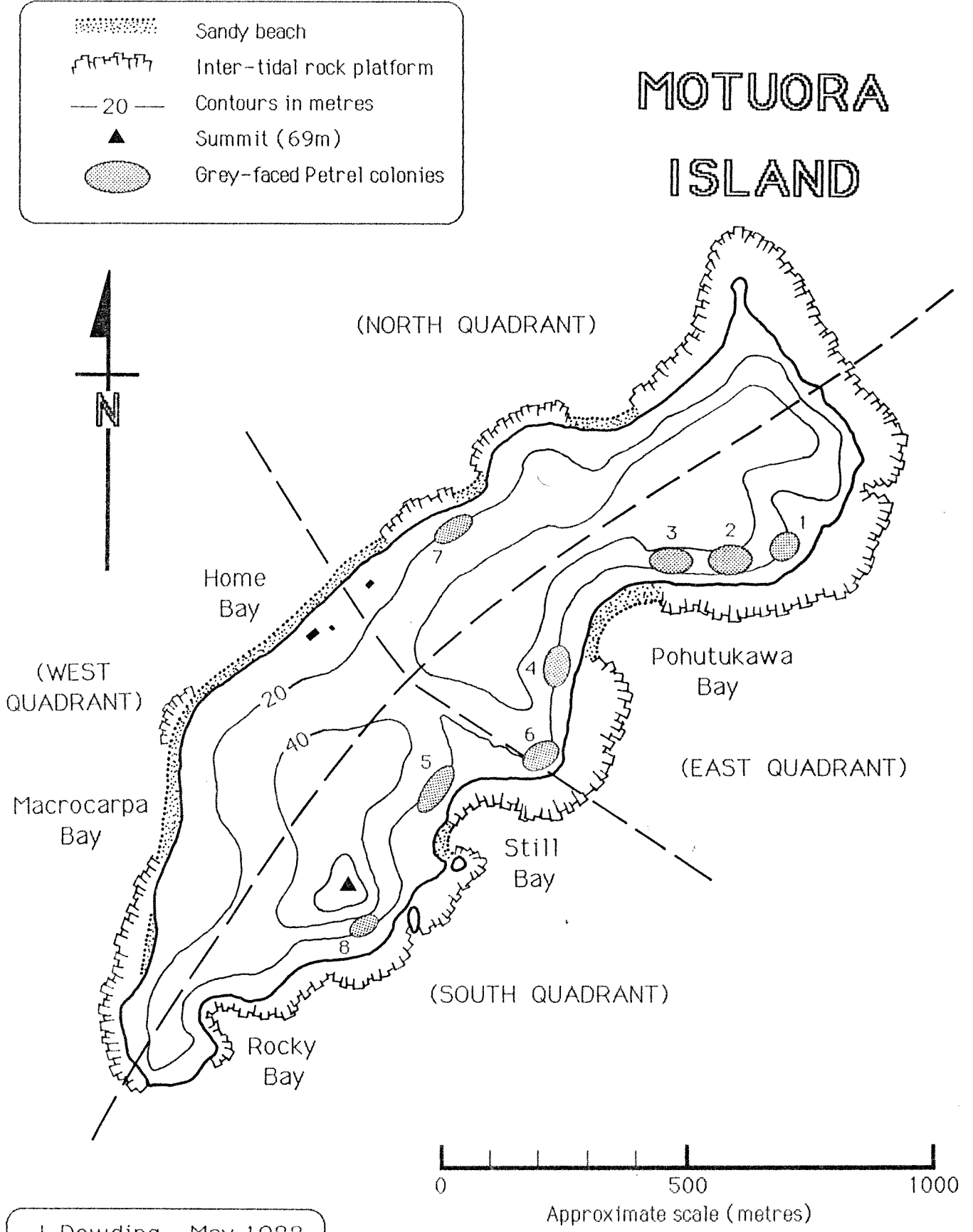
Animals

- NZ shore plover
- Takahe
- Black robin
- Subantarctic snipe
- Snares black tit

Plants

- *Clianthus puniceus*
- *Tecomanthe speciosa*
- *Hibiscus* sp.
- *Pittosporum pimelioides*
- *Calystegia marginata*
- *Mazus pumilio*
- *Theleophyton billardierei*

Figure 1. MAP OF MOTUORA ISLAND showing survey quadrants



J Dowding May 1988