SEABIRDS FOUND DEAD ON NEW ZEALAND BEACHES IN 1981

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ABSTRACT

In 1981, 3654 kilometres of coast were patrolled by 182 members of the Ornithological Society of New Zealand and their friends, and 5627 dead seabirds were found. New records for the Beach Patrol Scheme were a Kermadec Petrel *(Pterodroma neglecta)* and a Long-tailed Skua *(Stercorarius longicaudus)*. Unusual finds were Yellow-nosed Mollymawk *(Diomedea chlororhynchus)*, Wedge-tailed Shearwater *(Puffinus pacificus)*, Wilson's Storm Petrel *(Oceanites oceanicus)*, Black-bellied Storm Petrel *(Fregetta tropica)* and Black-fronted Tern *(Sterna albostriata)*. A major wreck of Kerguelen Petrels *(Pterodroma brevirostris)* and Blue Petrels *(Halobaena caerulea)* occurred in spring along the western coast of the North Island.

INTRODUCTION

This paper records the results of the Ornithological Society of New Zealand's Beach Patrol Scheme for 1981. Patrols were carried out on all sections of coast except Fiordland. 569 Beach Patrol Cards and 42 Specimen Record Cards were submitted.

METHODS

The coastline of New Zealand is divided into 15 sections (Imber & Boeson 1969), with an additional grouping, "OI," for Outlying Islands that are 50 km or more from the mainland. Kilometres "travelled" are the total lengths of coast patrolled; kilometres "covered" are the lengths of coast patrolled monthly. Hence, if a kilometre of beach is patrolled twice in one month, two kilometres have been travelled but only one kilometre covered per month.

RESULTS AND DISCUSSION

In 1981 the total distance travelled was 3564 km, 5627 seabirds were found and the mean number of birds found per kilometre of coast covered monthly was 1.77 (Table 1). These values are below the averages for the previous ten years (1971-80). For this period the averages are 3705 km of coast travelled per year, 10 010 birds picked up per year and 3.25 birds per kilometre per month.

The monthly and coastal distributions of the less commonly found seabirds (1-14 birds in 1981) are given in Table 2 and of the more commonly found seabirds in Tables 3 and 4. Two species are

TABLE 1 — Numbers of dead seabirds recovered and kilometres covered on each coast in 1981

COAST	CODE		MONTH											TOTAL		BIRDS/KM
			JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	KM	BIRDS	/COAST
AUCKLAND WEST	AW	KM	92	104	110	131	129	98	111	187	120	105	128	100	1415		
		BIRDS	130	96	96	106	158	52	110	265	561	292	275	157		2298	1.62
TARANAKI	TA	KM	22	3	3	11	11	4	16	15	27	43	6	10	171		
		BIRDS	9	7	8	16	12	2	15	8	34	42	4	9		166	0.97
WELLINGTON WEST	WW	KM	10	1	1	21	5	1	7	3	81	29	16	19	194		
		BIRDS	9	5	1	17	8	2	4	0	268	69	39	52		474	2.44
AUCKLAND EAST	AE	KM	115	41	68	48	89	40	58	65	41	91	69	85	810		
		BIRDS	549	119	243	31	65	25	56	15	13	40	204	198		1558	1.92
BAY OF PLENTY	BP	KM	6	-	-	17	-	-	4	6	-	-	1	7	41		
		BIRDS	20	-	-	4	-	-	2	3	-	-	2	17		48	1.17
EAST COAST NI	EC	KM	-	-	-	-	14	7	4	-	3	-	8	2	38		
		BIRDS	-	-	-	-	4	5	0	-	1	-	35	8		53	1.39
WAIRARAPA	WA	KM	5	-	-	10	-	-	-	5	2	2	-	-	24		
		BIRDS	0	-	-	3	-	-	-	0	1	0	-	-		4	0.17
WELLINGTON SOUTH	WS	KM	11	16	12	33	18	3	17	-	30	-	10	-	150		
		BIRDS	2	20	1	21	43	1	27	-	19	-	0	-		134	0.89
NORTH COAST SI	NC	KM	-	-	-	-	-	-	-	1	-	3	25	-	29		
		BIRDS	-	-	-	-	-	-	-	4	-	5	15	-		24	0.83
WESTLAND	WD	KM	1	-	5	2	2	-	3	3	2	3	3	2	26		
		BIRDS	0	-	0	0	1	-	0	0	0	2	3	7		13	0.50
CANTERBURY NORTH	CN	KM	24	10	13	13	8	15	22	7	20	10	10	22	181		
		BIRDS	68	30	29	13	7	36	12	8	14	37	39	117		410	2.27
CANTERBURY SOUTH	CS	KM	5	6	8	7	6	9	7	7	6	6	7	6	80		
		BIRDS	14	3	22	23	64	39	19	4	5	5	10	5		213	2.66
OTAGO	OT	KM	1	1	-	16	6	-	-	-	1	3	1	3	32		
		BIRDS	9	0	-	23	65	-	-	-	0	1	5	0		103	3.22
SOUTHLAND	SD	KM	19	4	4	7	7	4	4	20	10	5	4	-	88		
		BIRDS	36	10	8	2	7	3	2	29	11	6	15	-		129	1.47
TOTAL KILOMETRES TRAVELLED			341	208	240	344	306	197	267	333	399	338	309	282	3564		
TOTAL KILOMETRES COVERED			311	186	224	316	295	181	253	319	343	306	288	257	3279		
TOTAL SEABIRDS RECOVERED			846	290	408	259	434	165	247	336	927	499	646	570		5627	
BIRDS/KM COVERED/MONTH			2.72	1.56	1.82	0.82	1.47	0.91	0.98	1.05	2.70	1.63	2.24	2.22			1.77

new records for the Beach Patrol Scheme. One Kermadec Petrel was picked up in April on Muriwai Beach (AW) (Table 2). Only two other beach-wrecked specimens of this petrel have been recorded in New Zealand, both also from Muriwai Beach (Oliver 1955). The Kermadec Petrel has a widespread breeding range in the subtropical Pacific from Lord Howe Island east to Juan Fernandez Island (Falla *et al.* 1979). In the New Zealand region it breeds on Macauley Island (B. D. Bell, pers. comm.) and the Herald Islets of the Kermadec Group, the latter having up to 5000 pairs (M. J. Imber, pers. comm.). This petrel formerly bred on Raoul Island but has been exterminated by feral cats *(Felis catus)* and Norway rats *(Rattus norvegicus)* (Merton 1970). Although Kermadec Petrels migrate into the northern Pacific, they are present about the Kermadecs year round (Oliver 1955) and are rarely reported at sea far from the breeding sites (Jenkins 1967). Presumably it takes exceptionally strong north-easterly winds to blow a bird as far as New Zealand.

The other species new to the Beach Patrol Scheme is the Long-tailed Skua, a specimen of which was found in October on East Beach (AE) (Table 2). This skua is a northern circumpolar breeder, which makes a transequatorial migration to winter in the southern hemisphere (Serventy *et al.* 1971). While most overwinter off the coasts of South America, very occasionally the species is sighted in the south-west Pacific. One specimen has been found on a New Zealand beach before; at Muriwai in January 1964 (Sibson 1967).

Three Yellow-nosed Mollymawks were found along the Auckland West coast, one each in April, June and November (Table 2). Only two other specimens of this species have been picked up by beach patrollers previously, both along the Auckland West coast, one each in May and August 1980 (Veitch 1982). For the previous records of this mollymawk in the New Zealand area, see Robertson (1975), Wilson (1976), and Sibson (1979, 1981).

Three Wedge-tailed Shearwaters were recovered at Waipu Cove (AE), one in January and two in February (Table 2). Previously, only one specimen of this shearwater had been found, in June 1972 from the Wellington West region.

A Wilson's Storm Petrel picked up on Oreti Beach (SD) in January (Table 2) is the seventh specimen of this species to be recorded for the Beach Patrol Scheme. Previous records are 1939-59, AE-BP, ?; 1963, WW, Nov; 1968, WW, Jan; 1969, SD, Apr; 1971, AE, Dec; and 1973, EC, Apr. A Black-bellied Storm Petrel, also found on Oreti Beach in January (Table 2), was the fifth for the scheme. The previous records are 1963, Campbell Island, Feb; 1968, WS, May; 1975, WW, Jun; and 1977, SD, Nov.

One Black-fronted Tern was found on Brighton Beach (OT) in April (Table 2). This is only the third Black-fronted Tern for the Beach Patrol Scheme, the others being in June 1976 (WS) and July 1978 (BP). It is interesting that so few of these terns have been

TABLE 2 — Seabirds of which 1 to 14 specimens were found dead in 1981

SPECIES OR SUBSPECIES	NUMBER FOUND	COAST(S)	MONTH(S)
Megadyptes antipodes	6	OT(5),SD.	APR,MAY,NOV(4).
Eudyptes spp*	2	WD(2).	OCT,NOV.
pachyrhynchus subspp*	2	NC,SD.	SEP,NOV.
Diomedea exulans	5	AW(3),AE,CN.	MAR,MAY,JUL,SEP,OCT.
epomophora	1	AE.	JAN.
melanophrys	6	AW(5),AE.	JAN,APR,MAY(3),AUG.
chlororhynchus	3	AW(3).	APR,JUN,NOV.
bulleri	7	AW(2),AE,OT(2),SD(2).	JAN,FEB,APR(2),JUL,SEP(2).
cauta subspp*	3	AW(2),CN.	JUN,JUL,NOV.
salvini	3	AW,CN(2)	JAN,MAR,OCT.
Phoebetria palpebrata	14	AW(13),WW.	FEB,MAY(2),JUL(2),AUG(4),SEP(4),NOV.
Thalassoica antarctica	1	WW.	SEP.
Pterodroma spp*	13	AW(11),AE(2).	MAY,JUL,AUG(3),SEP,OCT(2),DEC(5).
inexpectata	13	AW(9),AE(2),WS,SD.	JAN(4),FEB(2),APR,MAY(2);NOV(2),DEC(2).
neglecta	1	AW.	APR.
pycrofti	1	AW.	DEC.
nigripennis	13	AW(13).	APR,MAY,DEC(11).
Pachyptila salvini	10	AW(10).	JAN,MAY(5),JUL,AUG(2),SEP.
desolata	13	AW(12),TA.	JAN,APR,MAY(2),JUN,JUL(5),AUG(2),SEP.
Procellaria spp*	1	AW.	JAN.
cinerea	3	AW(3).	JAN,JUL,DEC.
westlandica	4	AW(3),WW.	MAY,AUG(3).
Puffinus spp*	5	AW(2),WW(2),AE.	FEB,MAR,OCT,NOV,DEC.
pacificus	3	AE(3).	JAN,FEB(2).
gavia/huttoni*	6	WW(2),CN(4).	SEP(2),OCT(4).
Oceanites oceanicus	1	SD.	JAN.
Fregetta tropica	1	SD.	JAN.
Phalacrocorax spp*	4	AW(2),WW,AE.	AUG(3),OCT.
carbo	12	AW(4),TA,AE(3),EC(3),WS.	JAN(4),MAY,JUN(2),AUG(2).
sulcirostris	4	AW(3),AE.	JAN,JUN,JUL,OCT.
Leucocarbo carunculatus chalconotus	2	OT,SD.	JAN,APR.
Stercorarius skua lonnbergi	1	AW.	JUN.
parasiticus	1	AE.	JAN.
longicaudus	1	AE.	OCT.
Larus spp*	2	AE,CN	FEB,SEP.
Sterna albostriata	1	OT.	APR.
Hydroprogne caspia	5	AW,WS,NC(2),CS.	FEB,SEP,NOV(2),DEC.
TOTAL	174		

*Species or subspecies could not be identified by the patroller.

picked up because the species, presumably numbering several thousands, frequents coastal regions of the North and South Islands from about January to August (Lalas 1979, Latham 1981).

An important feature of the 1981 Beach Patrol results is the wreck of Kerguelen Petrels and Blue Petrels. This occurred from late July until December, most being found in September (Tables 3 & 4; see Reed 1981). Strong to gale force southerly to south-westerly winds prevailed from late August to early September in the Tasman Sea and several depressions of 960-990 mb passed south of Campbell and Macquarie Islands.

Altogether 280 Kerguelen Petrels were found during 1981, compared with 490 for all previous years of the scheme (1939-1980). Before 1981, the highest annual total was in 1975, when 162 birds were picked up. Of the 468 birds of known date of recovery during 1939-1980 and the 280 in 1981, 93% were picked up from August to October inclusive (Figure 1). Of those found in 1981, 97.5% were picked up from North Island west coast beaches (AW, TA, WW). Likewise, of those found from 1939 to 1980, 96.1% were picked up from beaches in the same three regions. This is not the result of a bias in patroller effort between the western North Island beaches and elsewhere. In 1981 an average of 6.5 km of North Island west coast beaches was covered per Kerguelen Petrel found, compared with 214.1 km per bird for the rest of the country.

The Kerguelen Petrel breeds on Prince Edward (M. J. Imber, pers. comm.), Marion, Possession and East Islands in the Crozets, Gough Island, Inaccessible Island in the South Orkneys and perhaps also on some of the islands of Tristan da Cunha in the subantarctic waters of the Atlantic and Indian Oceans (Mougin 1975). This species ranges eastwards in autumn and may be quite numerous in the Tasman Sea during some winters (Falla *et al.* 1979). On Possession Island the laying period of the species is very restricted, lasting for only five days around 10 October (Mougin 1969), and so the petrels found on our beaches from August to October are probably non-breeders.

Almost as many Blue Petrels were found in 1981 (343) as were found from 1939 to 1980 (360). As for the Kerguelen Petrel, the highest annual total of Blue Petrels before 1981 was in 1975, when 89 birds were found. Most Blue Petrels were picked up during August, September and October (Figure 2); 72.2% of the 360 birds found during the period 1939-1980 and 93.6% of the 1981 specimens. The coastal regions in which most Blue Petrels were found are similar to those detailed for the Kerguelen Petrels. Of the Blue Petrels found in 1981, 98.5% were picked up along western North Island beaches (AW, TA, WW), compared with 89.3% of the 354 of known region of recovery found from 1939-1980. On average, one Blue Petrel was found for every 5.3 km covered of AW, TA and WW regions in 1981, but only one was found for every 300.0 km for the rest of the New Zealand coastline.

TABLE 3 — Coastal distribution of the seabirds more commonly found dead in 1981

SPECIES OR SUBSPECIES	COAST														TOTAL BIRDS
	AW	TA	WW	AE	BP	EC	WA	WS	NC	WD	CN	CS	OT	SD	
Eudyptula minor subspp*	272	21	19	357	6	1	-	14	-	-	8	3	-	9	710
Eudyptula minor albosignata	-	-	-	-	-	-	-	-	1	-	18	7	-	-	26
Diomedea spp*	5	2	2	1	-	-	-	1	-	-	1	-	-	9	21
chrysostoma	19	-	2	-	-	-	-	-	-	-	-	-	-	-	21
cauta cauta	12	1	2	2	-	-	-	-	-	-	1	-	-	-	18
Macronectes spp*	25	-	-	7	-	1	-	1	-	-	1	-	-	3	38
Fulmarus glacialoides	18	-	9	-	-	-	-	-	1	-	-	-	-	1	29
Daption capense	25	8	5	5	-	-	-	3	-	-	3	7	1	-	57
Pterodroma macroptera	20	-	-	95	1	-	-	1	-	-	2	-	-	-	119
lessonii	139	4	18	2	1	-	-	-	-	-	1	-	-	-	165
brevirostris	202	24	47	4	1	-	-	-	-	1	1	-	-	-	280
cookii	17	-	-	74	1	-	-	-	-	-	-	-	-	-	92
Halobaena caerulea	243	13	82	-	-	-	-	-	1	1	-	-	-	3	343
Pachyptila spp*	63	11	75	2	-	-	-	9	1	-	5	-	-	4	170
vittata	9	-	1	-	-	-	-	-	-	1	4	6	-	8	29
belcheri	28	1	1	-	-	-	-	-	-	-	-	-	-	9	39
turtur	204	8	95	79	3	-	-	11	5	1	18	1	-	4	429
Procellaria parkinsoni	-	-	-	17	5	-	-	-	-	-	-	-	-	-	22
Puffinus carneipes	6	-	-	151	-	1	-	-	-	-	2	-	-	-	160
bulleri	84	5	7	73	2	-	1	3	-	-	3	-	-	-	178
griseus	202	5	22	122	9	40	-	44	2	2	66	17	57	38	626
tenuirostris	45	4	7	40	1	-	-	-	1	5	-	10	-	5	118
gavia	139	10	16	178	8	2	1	5	2	-	3	6	-	-	370
huttoni	18	1	2	7	-	-	-	-	1	-	20	-	-	-	49
assimilis	2	-	-	23	2	-	-	1	-	-	1	-	-	-	29
Pelagodroma marina	5	-	-	5	2	-	-	-	-	-	-	6	-	-	18
Pelecanoides urinatrix	59	2	20	94	5	1	1	7	-	-	3	-	-	5	197
Sula bassana	119	6	1	79	1	2	-	-	-	-	1	-	-	1	210
Phalacrocorax varius	9	-	-	20	-	-	-	-	-	-	8	-	-	-	37
melanoleucos	10	2	-	5	-	-	-	-	-	-	1	-	1	-	19
Stictocarbo punctatus	-	-	-	2	-	-	-	1	1	-	64	104	3	1	176
Larus dominicanus	121	24	20	55	-	2	1	18	4	-	52	32	24	11	364
novaehollandiae	36	11	11	33	-	-	-	8	1	-	83	1	8	-	192
bulleri	-	-	1	-	-	-	-	3	-	-	12	6	-	7	29
Sterna striata	36	1	1	7	-	-	-	1	-	-	19	6	-	2	73
TOTALS	2192	164	466	1539	48	50	4	131	21	11	401	212	94	120	5453

* Species or subspecies could not be identified by the patroller.

TABLE 4 — Monthly distribution of the seabirds more commonly found dead in 1981

SPECIES OR SUBSPECIES	MONTH JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL BIRDS
Eudyptula minor subspp*	137	32	141	51	78	16	50	67	26	17	49	46	710
Eudyptula minor albosignata	2	1	3	3	1	3	1	1	2	2	3	4	26
Diomedea spp*	3	2	-	-	1	1	1	9	3	-	-	1	21
chrysostoma	-	-	-	-	1	-	-	7	10	1	2	-	21
cauta cauta	1	-	1	-	3	2	1	3	1	4	1	1	18
Macronectes spp*	5	-	-	1	1	3	8	14	-	2	2	2	38
Fulmarus glacialoides	-	-	-	-	-	-	-	-	15	9	3	2	29
Daption capense	2	1	2	1	-	5	7	6	14	10	6	3	57
Pterodroma macroptera	86	4	1	2	2	3	-	2	12	5	2	-	119
lessonii	2	1	-	5	6	5	3	5	63	63	5	7	165
brevirostris	-	-	-	1	-	-	2	20	191	49	13	4	280
cookii	16	4	17	3	-	-	-	1	-	7	34	10	92
Halobaena caerulea	-	-	-	-	-	1	-	9	252	60	14	7	343
Pachyptila spp*	9	11	3	4	11	3	7	14	43	31	21	13	170
vittata	6	1	-	-	5	-	3	7	1	1	2	3	29
belcheri	-	1	-	1	4	1	4	9	4	2	13	-	39
turtur	75	14	1	4	9	6	24	50	130	57	30	29	429
Procellaria parkinsoni	5	1	5	-	-	-	-	-	-	-	8	3	22
Puffinus carneipes	40	12	52	2	4	1	1	-	-	2	27	19	160
bulleri	62	27	13	7	7	3	3	-	3	16	21	16	178
griseus	59	18	24	15	136	8	6	18	3	22	180	137	626
tenuirostris	25	-	4	5	8	1	3	-	2	4	24	42	118
gavia	93	37	27	30	5	8	31	24	36	18	18	43	370
huttoni	5	4	2	1	-	1	-	-	3	2	14	17	49
assimilis	3	1	2	3	-	1	2	-	-	1	10	6	29
Pelagodroma marina	3	-	-	1	1	-	-	1	2	1	3	6	18
Pelecanoides urinatrix	35	2	4	3	13	17	24	15	23	13	31	17	197
Sula bassana	29	27	25	10	6	4	7	13	18	22	31	18	210
Phalacrocorax varius	7	5	7	2	2	1	1	1	1	1	5	4	37
melanoleucos	-	3	3	-	1	2	-	1	1	6	2	-	19
Stictocarbo punctatus	19	4	10	15	48	23	10	3	3	2	21	18	176
Larus dominicanus	46	46	36	43	35	27	23	13	31	16	24	24	364
novaehollandiae	28	13	14	23	14	8	6	1	11	22	10	42	192
bulleri	10	3	2	1	1	2	3	1	4	1	1	-	29
Sterna striata	11	6	6	11	11	2	2	1	1	6	2	4	73
TOTALS	824	281	405	248	414	158	233	316	909	485	632	548	5453

* Species or subspecies could not be identified by the patroller.

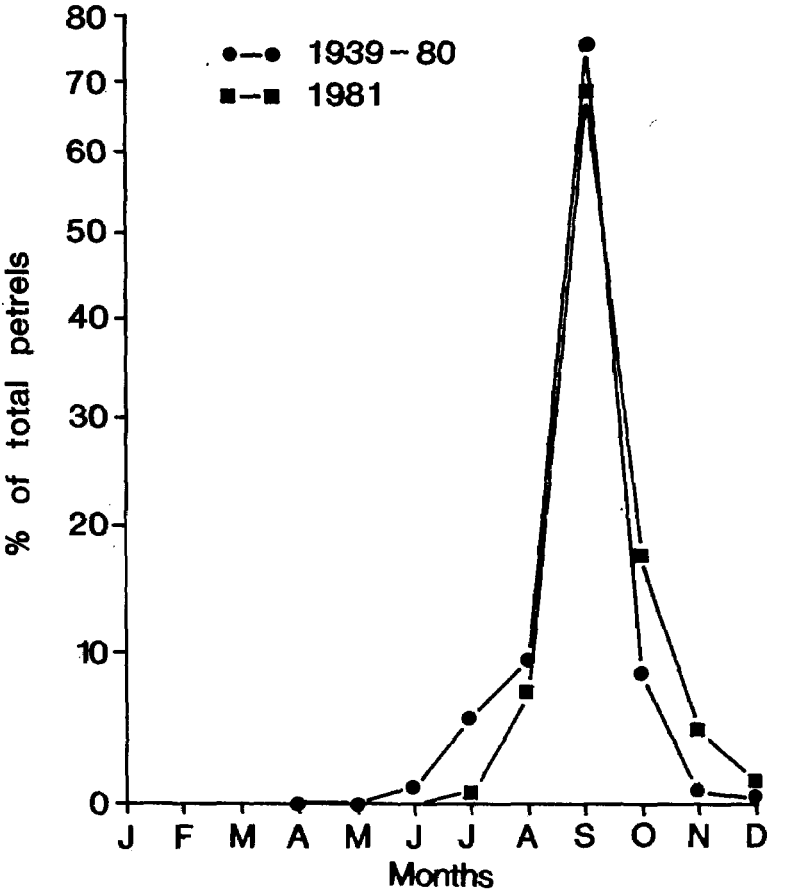

FIGURE 1 — Monthly distribution (% of total) of beach-wrecked Kerguelen Petrels during the period 1939-80 (n = 468) and in 1981 (n = 280)

The Blue Petrel is a bird of the subantarctic zone, probably with a circumpolar flight range (Dell 1952). It nests on Prince Edward, Marion and East Islands of the Crozets, Macquarie Island, Kerguelen Island, and Bird Island of the South Georgia group (M. J. Imber, pers. comm.). Most of the New Zealand and Australian specimens have been taken during September (Dell 1952; Figure 2), which suggests that during this month a considerable number of Blue Petrels are somewhere to the west of the two countries and within the influence of the prevailing south-westerly winds. Like the Kerguelen Petrels, the Blue Petrels found on our beaches in September are probably non-breeders.

Miscellaneous birds recovered, but not considered to be seabirds, totalled 185. There were 38 Magpies, 23 Mallards, 17 Black Swans, 16 Rock Pigeons, 15 Blackbirds, 10 Grey Ducks, eight Mynas, six each of Australasian Harriers and Starlings, five House Sparrows, four each of South Island Pied Oystercatchers and Tuis, three each of Pukekos and unidentified passerines, two each of Californian Quail, Pheasants, Pied Stilts, New Zealand Pigeons, Long-tailed Cuckoos, Skylarks and Greenfinches, and one each of White-faced Heron, Canada Goose, domestic goose, domestic fowl, Paradise Shelduck, Brown Teal, New Zealand Shoveler, Stewart Island Weka, Variable Oystercatcher, New Zealand Dotterel, Banded Dotterel, Eastern Bar-tailed Godwit, Turn-

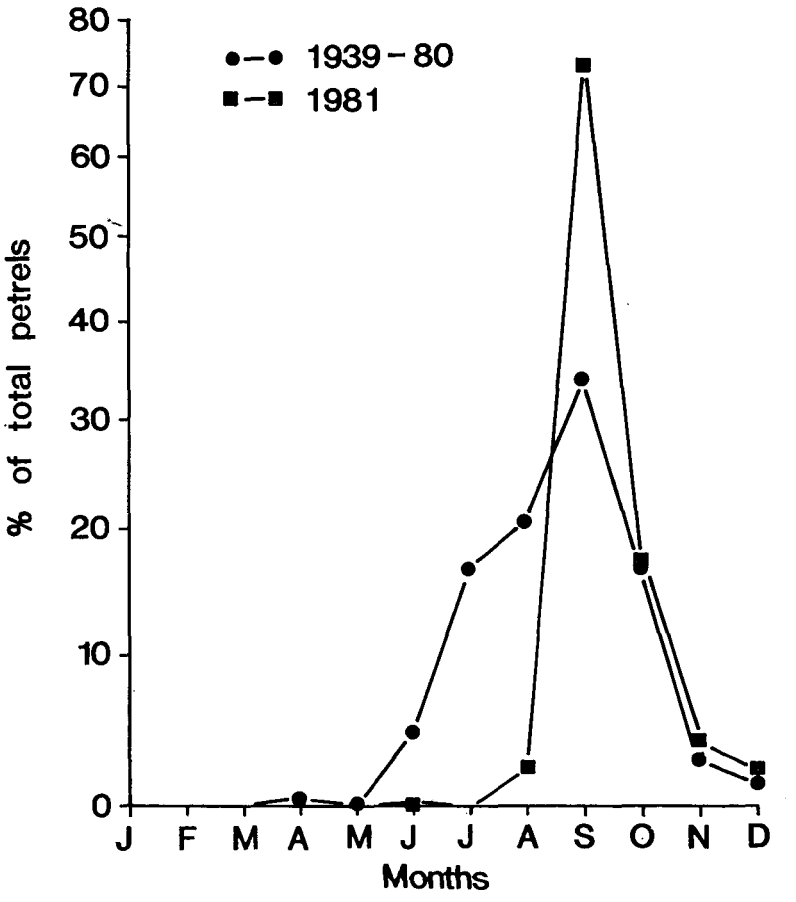

FIGURE 2 — Monthly distribution (% of total) of beach-wrecked Blue Petrels during the period 1939-80 (n = 360) and in 1981 (n = 343)

stone, North Island Kaka, Song Thrush, Yellowhammer, Goldfinch and Redpoll.

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SHORT NOTE

THE NESTING BEHAVIOUR OF A KIWI

A number of studies have focused on the nesting behaviour of birds, particularly gulls. Experiments by Tinbergen (1953) on egg recognition have shown that birds will brood surrogate objects and that some of these objects, especially larger ones, will act as hypernatural releasers of incubating behaviour.

A recent field trip to a coastal property in Northland yielded some unexpected results in that a party observed a North Island Brown Kiwi *(Apteryx australis mantelli)* apparently happily incubating a beer bottle.

The party consisted of staff from the Department of Lands and Survey and the Commission for the Environment and a private consultant. The purpose of the trip was to investigate a proposal for a marine park at Mimiwhangata, situated on the east coast about halfway between Whangarei and Cape Brett. The property at Mimiwhangata, which consists of an attractive assemblage of forested hills, farmlands, marsh areas, coastal margins and offshore islands, has been transformed into a farm park by the owners. The owners are Lion Breweries Ltd.

A previous ecological study of the farm park by Darby & Darby (1973) had given an indication that up to five pairs of kiwis are resident in the area. One of the highlights of the field trip was a hike to a hill-top viewing platform, perched high in a puriri tree. While marvelling at the view, a member of the party happened to glance down at an object in a relatively open area of the bush near the base of the tree. After a discussion about the identity of the object, someone clambered down the bank to identify it. Initially it was identified as a dead " kiwi," recognisable as a rather spread-out mound of feathers. Further careful examination revealed, however, that the kiwi was in fact very much alive but sleeping soundly. What also