BIRDS RECOVERED FROM BANKS PENINSULA BEACHES, NEW ZEALAND, FEBRUARY 1971 TO FEBRUARY 1972

J.F. CASTLE

Department of Zoology, University of Canterbury, Christchurch, New Zealand.

ABSTRACT

Regular beach patrols between February 1971 and February 1972 recovered 446 dead birds from beaches around Banks Peninsula, New Zealand. Of the twenty five species found, penguins, petrels, shags and gulls were the most abundant. The rarest specimen was an antarctic fulmar *Fulmarus glacialoides*.

A checklist of species is included with notes on the numbers and locality where found, local populations, and status in the study area.

INTRODUCTION

From published and unpublished records of the Ornithological Society of New Zealand 6,960 oceanic birds were recovered from 1939 to 1960 (Bull and Boeson 1961), indicating the necessity for a standard method of recording these recoveries.

The Beach Patrol Scheme was initiated in 1951 by the Ornithological Society in an attempt to encourage surveys of New Zealand beaches (*Notornis 4:* 142). This scheme flourished for a few years and was revised in 1960 (*Notornis 8:* 268).

A special card was devised on which to record locality, numbers of all species found and their condition, weather previous to the survey and other relevant information, e.g., presence of leg bands.

Providing surveys are regular, such a scheme:

1. provides an opportunity to compile a species frequency of occurrence in New Zealand,
2. ensures that specimens of particular scientific interest and fresh material are collected for museums,
3. increases the chance of recovering banded birds (many species of oceanic birds are banded in the southern oceans),

and 4. provides information on trends in population distribution and bird movements.

For the Beach Patrol Scheme the New Zealand coastline is divided into fifteen zones. The east coast of the South Island is divided into Canterbury North (Cape Campbell to Putakoto Head), Canterbury South (Putakoto Head to the Waitaki River), Otago, and Southland (Imber and Boeson 1969).

The survey localities of this report occur on Banks Peninsula, which is at the junction of the two Canterbury Beach Patrol zones. For this report Banks Peninsula is not divided.

METHODS

In recent years specimen returns for both Canterbury zones have been small. To partly rectify this, regular surveys were carried out in the vicinity of Banks Peninsula from 26 February 1971 to 21 February 1972. These were carried out at least once a week, and during winter months they were more frequent (particularly after storms). Weekly surveys were thought to be adequate during summer months when mortality is lower. No surveys were carried out during May and October 1971.

Material was identified in the field or checked with study skins and skeletal material held at the Canterbury Museum, Christchurch. All specimens were removed from the beach to avoid duplication of records on subsequent surveys or in Beach Patrols of others.

SURVEY LOCALITIES

TABLE 1. THE BEACHES SURVEYED AND THEIR CODE AS USED IN THE SPECIES LIST, APPROXIMATE DISTANCE COVERED AND NUMBER OF SURVEYS AT EACH BEACH.

CODE	SURVEY LOCALITY (Fig.1)	DISTANCE	NO. SURVEYS
SNB	South New Brighton (Southshore).	3.2 km	27
CB	Clifton Bay, Sumner.	0.8 km	9
TM	Taylors Mistake	0.8 km	2
KS	Kaitorete Spit, Lake Ellesmere.	4.8 km	2
WB	Waimairi Beach, North New Brighton.	0.8 km	2
SB	Scarborough Beach	0.4 km	1
OB	Okains Bay	0.8 km	1

Survey localities were chosen arbitrarily, although one beach, South New Brighton, (approx. 3.2 km north from the tip of New Brighton Spit) was chosen as the main survey area because of:

1. good accessibility to Christchurch,
2. a narrow intertidal area, making it easy for one or two persons to cover the whole strand zone,
3. a sandy substrate, on which specimens are easily spotted and not damaged (sand does cover specimens, particularly during periods of rough seas but most of such material was eventually recovered),
4. a reasonably unpopulated beach, though unacompanied dogs have been observed disturbing corpses and they possibly remove some,

and 5. good positioning for the accumulation of birds which die off Banks Peninsula and are brought shoreward by local sea currents.

The Southland current, which sweeps eastwards through Foveaux Strait then northwards to Banks Peninsula, flows round the peninsula into Pegasus Bay. Local wind and current drift also is shoreward in this region (drift cards dropped up to 3.2 km offshore, drifted due west to be recovered in the southern part of Pegasus Bay) (Brodie 1960).

Clifton Bay has a sandy beach on which birds are deposited by local currents influenced by the Avon and Heathcote estuary outlet. Other sandy beaches (Taylors Mistake, Scarborough Beach, Waimairi Beach, and Okains Bay) were infrequently visited.

Kaitorete Spit, south of Banks Peninsula is a 26 km-long shingle spit, which closes Lake Ellesmere off from the sea and is in direct line with the Southland current and southerly gales. Avian material, however, is quickly disintegrated by the shifting substrate.

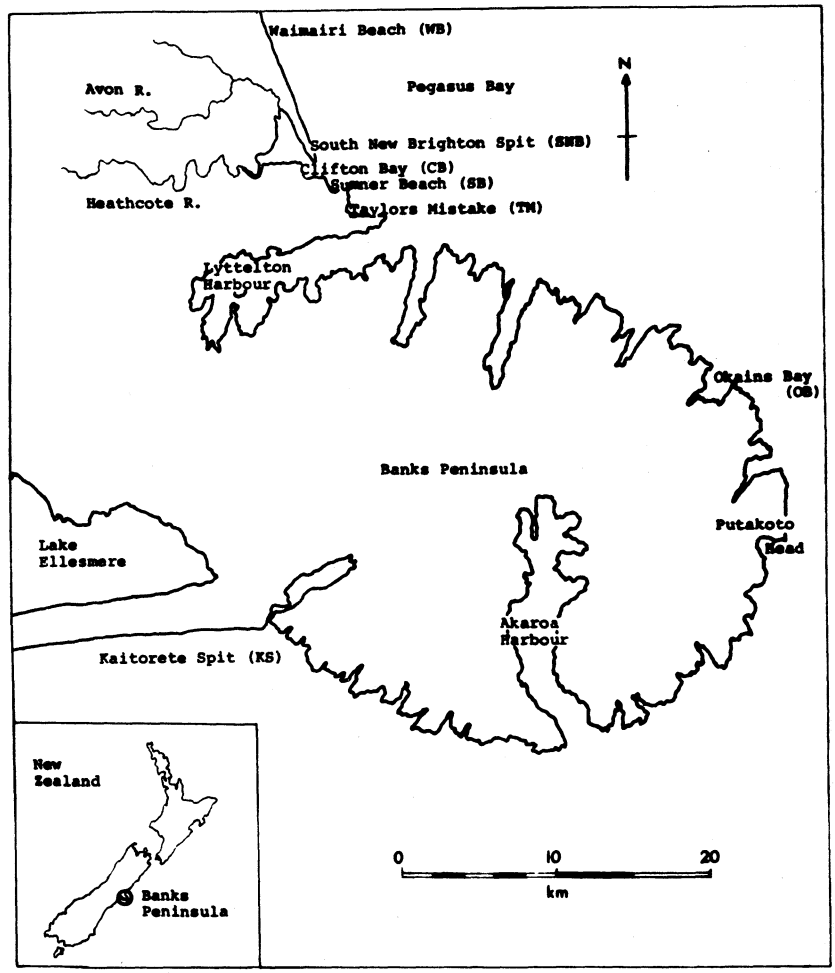

Fig. 1. Banks Peninsula showing survey localities. Each beach in the survey is followed by its code in parentheses.

South New Brighton beach, Clifton Bay and Kaitorete Spit are well located for the accumulation of specimens and most surveys took place along these beaches where most of the records for this report occurred.

RESULTS

In the ten months during which surveys were carried out, total bird recoveries for the seven beaches surveyed numbered 446.

The seventeen oceanic species recovered comprised mainly penguins, petrels and prions. Albatross and mollymawk records were mainly represented by unidentifiable material. Four coastal species comprising three gulls and one shag, and two species of duck, a wader and a passerine were recorded. Three domestic species were also recorded.

The total distance covered by all surveys was 117 km giving an overall bird recovery density of 3.8 birds per km. The most recent overall bird density for a Canterbury zone was 4.0 birds per km for North Canterbury (Imber 1971). The high local density is probably explained by such factors as sea current drift, proximity to breeding colonies, and regularity of surveys.

Table 2 shows the number of birds collected at the survey localities with totals for each species and for each locality. Since South New Brighton beach was surveyed most often, just over two thirds of the total material recovered occurred along this stretch of coastline.

Table 3 shows the number of bird recoveries per month, the winter months accounting for over half the total specimens recovered. The absolute number of recoveries may not be comparable between areas as survey number and duration were not constant. Since areas were surveyed more frequently after winter bad weather than during other seasons, it is difficult to determine whether increases in bird recoveries reflect higher mortality rates or merely an observational bias.

Table 4 shows occurrence per 5 km surveyed per month, of the ten species for which there were ten or more recoveries. Monthly mortality shows an increase towards the end of 1971 continuing into January 1972. Mortality in sea birds, particularly among shearwaters, occurs among first-year non-breeders when they are affected by fluctuations in food supply, or encounter adverse weather conditions at the end of an arduous migration.

Table 5 shows bird recoveries for the Canterbury coast from 1960 to 1969 (Boeson 1964, 1965, Bull and Boeson 1961b, 1962, Imber and Boeson 1969, Imber and Crockett 1970, Imber 1971), for comparison with present recoveries. Results for 1965 to 1967 are unavailable. Birds other than sea birds are included under 'Miscellaneous'. Shags and gulls are included in this group from 1960 to 1964. Fifteen species previously recorded were not encountered. Five species from the present report, however, are not included in previous Beach Patrol Reports for Canterbury beaches.

TABLE 2. NUMBERS OF EACH SPECIES FOUND AT EACH BEACH SURVEYED

	Survey Locality Code							
	SNB	CB	TM	KS	WB	SB	OB	Total
Eudyptula minor	1	.	.	.	.	.	.	1
Eudyptula albosignata	11	3	1	2	1	.	.	18
Diomedea sp. *	2	.	.	1	.	.	.	3
Phoebia palpebrata	3	.	.	1	.	.	1	5
Macrinectes giganteus	4	.	.	1	.	.	.	5
Fulmarus glacialoides	1	.	.	.	.	.	.	1
Daption capensis	2	.	.	.	.	.	.	2
Pachyptila sp. *	2	1	.	.	.	.	.	3
Pachyptila salvini	1	.	.	.	.	.	.	1
Pachyptila turtur	6	.	.	1	.	.	.	7
Pachyptila crassirostris	.	.	.	2	.	.	.	2
Puffinus sp. *	3	.	1	.	.	.	.	4
Puffinus griseus	29	2	.	5	5	.	.	41
Puffinus tenuirostris	20	3	1	3	.	.	.	27
Puffinus gavia	10	1	.	.	2	.	.	13
Puffinus huttoni	1	.	.	.	.	.	.	1
Sula serrator	1	.	.	.	1	.	.	2
Stictocarbo punctatus	98	17	5	15	4	2	2	143
Anas platyrhynchus	1	.	.	.	.	.	.	1
Anas superciliosa	2	.	.	.	.	.	.	2
Haematopus finschi	2	.	.	.	1	.	.	3
Larus dominicanus	46	4	1	2	.	.	2	55
Larus scopulinus	48	12	1	1	2	.	1	65
Larus bulleri	10	2	.	.	.	.	.	12
Sterna striata	18	1	.	.	.	.	.	19
Columbia livia	4	1	.	1	.	.	.	6
Gymnorhina tibicen hypoleuca	1	.	.	.	.	.	.	1
Domestic species	3	.	.	.	.	.	.	3
TOTAL (28 kinds)								446

* Species not identified.

TABLE 3. NUMBERS OF EACH SPECIES FOUND EACH MONTH OF THE SURVEY PERIOD, FEBRUARY 1971 to FEBRUARY 1972

	F.	M.	A.	M.	J.	J.	A.	S.	O.	N.	D.	J.	F.	Total
Eudyptula minor	.	.	.	.	.	1	.	.	.	.	.	.	.	1
Eudyptula albosignata	3	1	2	.	2	2	.	.	.	2	1	3	2	18
Diomedea sp. *	.	.	.	.	.	3	.	.	.	.	.	.	.	3
Phoebia palpebrata	.	.	.	.	.	4	1	.	.	.	.	.	.	5
Macronectes giganteus	.	.	.	.	3	1	.	.	.	.	.	.	1	5
Fulmarus glacialoides	.	.	.	.	.	1	.	.	.	.	.	.	.	1
Daption capensis	.	.	.	.	1	.	1	.	.	.	.	.	.	2
Pachyptila sp. *	1	.	.	.	.	.	.	.	.	2	.	.	.	3
Pachyptila salvini	.	.	.	.	.	1	.	.	.	.	.	.	.	1
Pachyptila turtur	.	.	.	.	.	4	1	1	.	.	1	.	.	7
Pachyptila crassirostris	.	.	.	.	.	.	.	2	.	.	.	.	.	2
Puffinus sp. *	.	.	.	.	.	.	.	.	.	1	.	1	2	4
Puffinus griseus	1	3	3	.	7	6	1	.	.	4	8	2	6	41
Puffinus tenuirostris	1	.	2	.	1	2	.	2	.	8	3	2	6	27
Puffinus gavia	.	.	.	.	2	3	.	.	.	6	2	.	.	13
Puffinus huttoni	.	.	.	.	.	.	.	.	.	.	1	.	.	1
Sula serrator	.	1	.	.	1	.	.	.	.	.	.	.	.	2
Stictocarbo punctatus	3	3	12	.	19	54	16	10	.	6	4	6	10	143
Anas platyrhynchus	.	.	.	.	.	.	1	.	.	.	.	.	.	1
Anas superciliosa	.	.	.	.	1	1	.	.	.	.	.	.	.	2
Haematopus finschi	.	.	.	.	1	.	1	.	.	.	.	.	1	3
Larus dominicanus	2	.	6	.	9	14	10	5	.	3	1	1	4	55
Larus scopulinus	5	.	2	.	6	27	9	6	.	4	.	1	5	65
Larus bulleri	1	1	.	.	1	4	3	.	.	.	1	.	1	12
Sterna striata	.	.	.	.	.	8	6	3	.	1	.	1	.	19
Columbia livia	.	.	.	.	.	3	1	.	.	1	.	.	1	6
Gymnorhina tibicen hypoleuca	.	.	.	.	.	1	.	.	.	.	.	.	.	1
Domestic species	.	.	.	.	.	1	1	1	.	.	.	.	.	3
TOTAL (28 kinds)	17	9	27	.	54	141	52	30	.	38	22	17	39	446

* Species not identified.

TABLE 4. MONTHLY DISTRIBUTION OF THE MORE COMMON SPECIES RECOVERED PER km TRAVELLED

Month:	F.	M.	A.	M.	J.	J.	A.	S.	O.	N.	D.	J.	F.
Total km surveyed	6	6	8	.	15	30	17	14	.	6	3	2	8
Eudyptula albosignata	0.50	0.16	0.25	.	0.13	0.07	0	0	.	0.33	0.33	1.50	0.25
Puffinus griseus	0.16	0.50	0.37	.	0.41	0.20	0.06	0	.	0.67	2.7	1.0	0.75
Puffinus tenuirostris	0.16	0	0.25	.	0.07	0.07	0	0.15	.	1.33	1.0	1.0	0.75
Puffinus gavia	0	0	0	.	0.13	0.07	0	0	.	1.2	0.66	0	0
Stictocarbo punctatus	0.50	0.50	1.50	.	1.26	1.80	0.95	0.71	.	1.0	1.3	3.0	1.25
Larus dominicanus	0.33	0	0.75	.	0.60	0.46	0.60	0.35	.	0.50	0.33	0.50	0.50
Larus scopulinus	0.83	0	0.25	.	0.40	0.90	0.56	0.42	.	0.67	0	0.50	0.62
Larus bulleri	0.16	0.16	0	.	0.07	0.13	0.16	0	.	0	0.33	0	0.12
Sterna striata	0	0	0	.	0	0.27	0.33	0.22	.	0.17	0	0.5	0

TABLE 5. PREVIOUS RECOVERIES FOR NORTH AND SOUTH CANTERBURY COASTS, FROM PUBLISHED O.S.N.Z. BEACH PATROL REPORTS, COMPARED WITH PRESENT RECOVERIES

	1960		1961		1962		1963		1964		1968		1969		Totals for
	CN	CS	CN	CS	CN	CS	CN	CS	CN	CS	CN	CS	CN	CS	present survey
Megadyptes antipodes	.	.	.	.	3	2	1	2	.	.	.	.	.	.	.
Pygoscelis adeliae	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.
Eudyptula minor	.	.	4	.	6	.	3	.	1	.	.	.	3	1	1
Eudyptula albosignata	1	.	21	.	14	.	5	4	5	9	.	.	.	1	18
Diomedea sp. *	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3
Diomedea exulans	.	.	.	.	.	.	.	.	.	.	.	.	1	1	.
Diomedea epomorpha	.	.	.	.	.	.	.	.	.	.	.	.	3	.	.
Diomedea melanophris	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.
Diomedea cauta	.	.	2	.	4	.	.	.	1	.	.	.	.	.	.
Phoebia palpebrata	.	.	.	.	.	.	.	.	.	.	.	.	.	.	5
Macronectes giganteus	.	.	.	.	1	.	1	1	.	.	.	.	.	.	5
Fulmarus glacialoides	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
Daption capensis	.	.	1	.	.	.	.	1	.	.	.	1	.	.	2
Pachyptila sp. *	.	.	10	.	1	.	1	.	1	.	.	.	.	.	3
Pachyptila vittata	.	.	2	.	2	.	1	14	.	.	.	.	.	.	.
Pachyptila salvini	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
Pachyptila desolata	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.
Pachyptila turtur	.	.	20	.	2	12	2	.	.	.	.	.	1	.	7
Pachyptila crassirostris	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2
Procellaria cinerea	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.
Procellaria westlandica	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.
Procellaria aequinoctialis	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.
Puffinus sp. *	.	.	.	.	.	.	.	.	.	.	.	.	.	.	4
Puffinus bulleri	.	.	.	.	.	.	.	5	.	.	.	.	.	.	.
Puffinus griseus	.	.	12	100	95	14	59	13	5	1	.	.	20	2	41
Puffinus tenuirostris	.	.	1	.	10	.	.	.	.	.	.	6	.	1	27
Puffinus gavia	.	.	4	.	10	1	8	2	.	.	.	.	1	.	13
Puffinus huttoni	.	.	4	.	21	.	4	3	8	.	.	.	4	3	1
Pelecanoides urinatrix	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.
Sula serrator	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2
Phalacrocorax carbo	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.
Phalacrocorax melanoleucos	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.
Stictocarbo punctatus	.	.	.	.	.	.	.	.	6	.	.	5	.	.	143
Larus dominicanus	.	.	.	.	.	.	.	.	11	.	.	.	1	6	55
Larus scopulinus	.	.	.	.	.	.	.	.	4	.	.	.	1	.	65
Larus bulleri	.	.	.	.	.	.	.	.	1	.	.	1	.	2	12
Sterna striata	.	.	.	.	.	.	.	.	4	.	.	.	1	2	19
Miscellaneous (includes *Larus* spp. and *S.punctatus* for 1960-1964)	.	.	33	.	35	4	39	25	.	.	.	.	.	.	16

* Species not identified

CHECKLIST OF RECOVERIES IN THE PRESENT SURVEY

In the following checklist each species is listed under its family, with the number found at each survey, and data on local breeding areas and status.

Nomenclature follows O.S.N.Z., Inc. (1970). Localities follow the code in Table 1, with the number of individuals given in parentheses.

Spheniscidae (penguins)

1. *Eudyptula minor minor* (southern blue penguin)
   SNB (1) July 1971.
   Status: Infrequent visitor to the study area.

2. *Eudyptula albosignata* (white-flippered penguin)
   SNB (11) occurring throughout the survey period; two immature, November 1971.
   CB (3) one adult, April 1971; one immature, January 1972; one immature, February 1972.
   TM (1) immature, January 1972.
   KS (2) adults, July 1971.
   WB (1) adult, June 1971.
   Ten specimens that were collected from the end of February to the end of July 1971, were all adults. No individuals occurred between then and the beginning of November 1971. From then eight specimens were found, of which four were not fully-fledged juveniles. Two of these juveniles were fresh enough to be dissected, but no cause of death other than probable starvation, was found.
   Status: Breeds around Banks Peninsula and as far north as Motunau Island, North Canterbury; remains in the vicinity of the breeding ground throughout the year.

Diomedeidae (albatrosses and mollymawks)

3. *Diomedia* sp. (mollymawks)
   SNB (2) July 1971.
   KS (1) July 1971.
   The mollymawk material was insufficient for specific identification.

4. *Phoebetria palpebrata* (light-mantled sooty albatross)
   SNB (3) adults, July 1971.
   KS (1) adult, July 1971.
   OB (1) adult, August 1971.
   One recovery (SNB) was in excellent condition. It appeared to have died on the beach well above high water as the feathers were completely dry and the body was not waterlogged. The survey on this day followed a three day period of southerly gales; other fresh material also occurred after stormy weather.
   Status: A regular winter straggler to Banks Peninsula.

Procellariidae (petrels, shearwaters and fulmars)

5. *Macronectes giganteus* (giant petrel)
   SNB (4) three adults, June 1971; one adult, February 1972.
   KS (1) adult, July 1971.
   One specimen from (SNB) in June 1971 was possibly a subadult of the Antarctic subspecies which moves north during winter.
   Status: A common straggler throughout the year around Banks Peninsula, often following fishing boats.

6. *Fulmarus glasialoides* (antarctic fulmar)
SNB (1) July 1971.
This specimen, in excellent condition, is held in the Canterbury Museum, Christchurch.
Status: A rare winter straggler.

7. *Daption capensis* (cape pigeon)
SNB (2) June and August 1971.
The specimen collected June 1971 carried a worn leg band with only the date of banding (1955) decipherable.
Status: Moves north from Antarctic seas in winter to follow coldwater currents towards the tropics. Common winter straggler around Banks Peninsula.

8. *Pachyptila salvini* (lesser broad-billed prion)
SNB (1) July 1971
Status: Breeds in southern Indian Ocean ranging eastwards to Australia and New Zealand, where it is a winter straggler (sometimes in large numbers).

9. *Pachyptila turtur* (fairy prion)
SNB (6) four, July 1971; one, August 1971; one, December 1971.
KS (1) September 1971.
The one summer record (SNB) is possibly a fatality from a local population.
Status: Breeds from Poor Knights Islands, to the Chatham, Stewart, Snares, and Antipodes Islands, and possibly Macquarie Island. Locally breeds in large numbers on Motunau Island, North Canterbury, and on several small islets and headlands of Banks Peninsula. Ranges widely throughout New Zealand; most common in winter and spring.

10. *Pachyptila crassirostris* (fulmar prion)
SNB (2) September 1971.
Recovered after a period of stormy weather.
Status: Breeds subantarctic islands and the Chatham Islands, seldom ranging farther north than Cook Strait; recorded once from Australia (Learmonth 1957).

11. *Puffinus griseus* (sooty shearwater)
SNB (29) occurred regularly throughout the survey period.
CB (2) June 1971, January 1972.
KS (5) July 1971.
WB (5) June 1972.
Status: Breeds from Three Kings Islands to the Subantarctic, in large numbers about Stewart Island; locally on Banks Peninsula and Motunau Island, North Canterbury. *Puffinus griseus* is commonly washed ashore on Canterbury beaches (those at the beginning of winter probably southern birds on their northward migration, and those of early summer are returning for the breeding season, September to February (Richdale 1963). Mid-winter recoveries and eight fresh birds (SNB) December 1971 were probably from local populations.

12. *Puffinus tenuirostris* (short-tailed shearwater)
SNB (20) occurring mainly during autumn and summer, a few mid-winter recoveries.
CB (3) April and November 1971.
TM (1) January 1972.
KS (3) July and September 1971.
Status: Breeds only in Australian waters, particularly southeast Australia and Tasmania. A regular straggler to study area, mainly from summer to autumn.

13. *Puffinus gavia* (fluttering shearwater)
SNB (20) July and November 1971, February 1972.
CB (1) November 1971.
WB (2) June 1971.
Status: Breeds from Three Kings Islands to Cook Strait (where it occurs in large numbers) and also in Marlborough Sounds. Appears to be a stationary species remaining in the vicinity of the breeding area during winter. Ranges south to the study area.

14. *Puffinus huttoni* (Hutton's shearwater)
SNB (1) December 1971.
Status: Breeds only in the Seaward Kaikoura Range, north-east South Island (Harrow 1965). A stationary species common in Cook Strait throughout the year, ranging south to the study area.

Sulidae (gannets and boobies)

15. *Sula bassana* (Australian gannet)
SNB (1) March 1971.
WB (1) June 1971.
Status: Breeds from Three Kings Islands to Hawke's Bay in the North Island. Small colonies occur at the Nuggets and Little Solander Island off southern South Island. Adults range widely during winter; New Zealand banded birds are recovered on coasts of southern Australia. Often seen fishing off Banks Peninsula.

Phalacrocoracidae (cormorants or shags)

16. *Stictocarbo punctatus* (spotted shag)
SNB (98) occurred throughout the survey period; two immature, April 1971; three immature, December 1971; four immature, February 1972.
CB (17) occurred throughout the survey period; one immature, April 1971; one immature, February 1972.
TM (5) immature: one, April 1971, four, January 1972.
KS (15) adults, July and September 1971.
WB (4) adults, June and July 1971.
SN (2) immature, June 1971.
OB (2) adults, August 1971.
This was the most common species (a total of one hundred and forty-three birds recovered during the survey). There are large colonies in the vicinity of most of the survey areas, so the recoveries probably represent losses from local populations. Recoveries were found mainly after winter storms. Thirteen immature birds occurred from January to April.
Status: Breeds from Hauraki Gulf, Marlborough Sounds to Banks and Otago Peninsulas; more numerous in the South Island (particularly on Banks Peninsula).

Anatinae (ducks)

17. *Anas platyrhynchos* (mallard)
SNB (1) August 1971.
Status: Introduced from the northern hemisphere; now common in most parts of New Zealand. Locally breeds in large numbers on Lake Ellesmere, and Avon and Heathcote rivers in and around Christchurch.

18. *Anas superciliosa* (grey duck)
SNB (2) June and July 1971.
Status: Common throughout New Zealand; breeds in similar locations as the mallard with which it hybridises.

Haematopidae (oystercatchers)

19. *Haematopus ostralegus* (South Island pied oystercatcher)
WB (1) June 1971.
SNB (2) August 1971, February 1972.
Status: Large numbers congregate at the point of the Spit (South New Brighton beach) prior to moving inland to breed on inland riverbeds, lakes and pasture lands of the South Island.

Laridae (gulls)

20. *Larus dominicanus* (southern black-backed gull)
SNB (46) recovered during all months of survey; one immature, April 1971; two immature, August 1971; one immature, December 1971; three immature, February 1972.
CB (4) April and June 1971.
TM (1) January 1972.
KS (2) September 1971.
OB (2) August 1971.
Regular recoveries of this species occurred throughout the year, mainly SNB.
Status: Breeds throughout New Zealand in coastal districts and inland on the larger river systems, particularly those of the South Island. Locally breeds along Kaitorete Spit, Lake Ellesmere (Tunnicliffe 1973); Motunau Island, North Canterbury; Scarborough Head; Quail Island, Lyttelton Harbour (G.A. Tunnicliffe pers.comm.), and isolated places elswhere around Banks Peninsula.

21. *Larus novaehollandiae* (red-billed gull)
SNB (48) all months of survey; two immature, August 1971.
CB (12) eleven, July 1971; one immature, February 1972.
TM (1) January 1972.
KS (1) July 1971.
WB (2) June and July 1971.
OB (1) August 1971.
Regular recoveries of this species occurred throughout the year mostly during winter months.
Status: Breeds throughout New Zealand in coastal districts, from Three Kings Islands to Stewart, Snares, Auckland and Campbell Islands. Locally breeds in small numbers on Motunau Island, North Canterbury, and at Scarborough Head (G.A. Tunnicliffe pers. comm.). Recorded as breeding in the Lake Ellesmere area (Gurr and Kinskey 1965), but not substantiated by Tunnicliffe (1973).

22. *Larus bulleri* (black-billed gull)
SNB (9) February, March, July, August and December 1971.
CB (2) June and July 1971.
Recoveries mainly during winter.
Status: Breeds throughout New Zealand: in inland North Island, but mainly on shingle river beds of South Island. Locally recorded as breeding at Lake Ellesmere (Stead 1932), but not substantiated by Tunnicliffe (1973).

Sternidae (terns and noddies)

23. *Sterna striata* (white-fronted tern)
SNB (18) July, August, September and November 1971.
CB (1) January 1972.
Recoveries occurred mainly in the latter months of the year; mostly juveniles which congregate along South New Brighton beach towards the end of summer.

Status: Breeds only in New Zealand along coasts, offshore islands, and on South Island shingle river beds. Locally breeding at Scarborough Head and Kaitorete Spit, Lake Ellesmere (Clark and Dawson 1957).

Columbidae (pigeons and doves)

24. *Columbia livea* (rock pigeon)
SNB (4) July and August 1971, February 1972.
CB (1) November 1971.
KS (1) November 1971.
Status: Introduced from the Northern Hemisphere; common throughout New Zealand. Breeds in large numbers around Banks Peninsula.

Cracticidae (bell magpies)

25. *Gymnorhina tibicen hypoleuca* (white-backed magpie)
SNB (1) July 1971.
Status: Introduced from Australia, common in South Island. Breeds in large numbers about Banks Peninsula.

26. Three domestic species (chicken, duck and goose) occurred on South New Brighton beach during winter months.

ACKNOWLEDGMENTS

I wish to thank C.D. Paulin who introduced me to Beach Patrolling and who accompanied me on many of the surveys.

I am indebted to R.J. Scarlett (Osteologist), Canterbury Museum, Christchurch, for identification of some of the material and for allowing me access to the Museum collections, and to G.A. Tunnicliffe (Zoologist), Canterbury Museum, Christchurch, for encouragement during the survey period and preparation of this report.

LITERATURE CITED

BOESON, B.W. 1964. Sea birds found dead in New Zealand in 1962. *Notornis 10*(8): 404-411.

———— 1965. Sea birds found dead in New Zealand in 1963. *Notornis 12*(3): 169-175.

BRODIE, J.W. 1960. Coastal surface currents around New Zealand. *New Zealand Journal of Geology and Geophysics 3*(2): 235-252.

BULL, P.C. 1961. Beach Patrol Scheme. Interim report for the year 1960. *Notornis 9*(5): 181-182.

———— and BOESON, B.W. 1961a. Preliminary analysis of records of storm-killed sea birds from New Zealand 1939-1959. *Notornis 9*(6): 185-199.

———————————— 1961b. Sea birds found dead in New Zealand in 1960. *Notornis 9*(7): 225-230.

———————————— 1962. Sea birds found dead in New Zealand in 1961. *Notornis 10*(6): 265-277.

CLARK, W.C. and DAWSON, E.W. 1957. The trans-Tasman dispersal of the white-fronted tern (*Sterna striata* Gm.). *Notornis 7*(3): 65-69.

GURR, L. and KINSKY, F.C. 1965. The distribution of breeding colonies and status of the red-billed gull in New Zealand and its outlying islands. *Notornis 12*(4): 223-240.

HARROW, G. 1965. Preliminary report on discovery of nesting sites of Hutton's Shearwater. *Notornis 12*(2): 59-70.

IMBER, M.J. 1969. The Beach Patrol Scheme. *Notornis 16*(2): 140-144.

———— 1971. Sea birds found dead in New Zealand in 1969. *Notornis 18*(4): 305-307.

———— and BOESON, B.W. 1969. Sea birds found dead in New Zealand in 1964. *Notornis 16*(1): 50-56.

———— and CROCKETT, D.E. 1970. Sea birds found dead in New Zealand in 1968. *Notornis 17*(3): 223-230.

LEARMONTH, N.F. 1957. A Victorian record of *Pachyptila crassirostris*. *Emu 57*: 57-59.

O.S.N.Z., Inc. 1970. *Annotated checklist of the birds of New Zealand including the birds of the Ross Dependency*. The Checklist Committee (F.C. Kinsky, Convenor), Ornithological Society of New Zealand, Inc. A.H. and A.W. Reed, Wellington. 96pp.

RICHDALE, L.E. 1963. The biology of the Sooty Shearwater *Puffinus griseus*. *Proceedings of the Zoological Society London 141*: 1-117.

TUNNICLIFFE, G.A. 1973. The avifauna of the Lake Ellesmere area, Canterbury. *Mauri Ora 1*: 107-135.