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# Seabirds found dead on New Zealand beaches in 1995

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**ABSTRACT**

During 1995, participants in the Beach Patrol Scheme patrolled 3498 km of the New Zealand coastline. There were 7625 dead seabirds of 55 species recovered by patrollers. In addition, beach patrollers found 156 birds of 28 non-seabird species. Unusual finds were the third specimen of a beach-wrecked Lesser Frigatebird (*Fregata ariel*) in New Zealand and five Kermadec Petrels (*Pterodroma neglecta*). Australasian Gannets (*Morus serrator*) wrecked in larger numbers than in any year since the start of the Beach Patrol Scheme. There were 648 birds recovered at an average rate of 22.2 birds per 100 km. A large wreck of Sooty Shearwaters (*Puffinus griseus*) occurred on Stewart Island in May 1995. Causes of seabird mortality are discussed in the paper.

KEYWORDS: Seabirds, mortality, *Fregata ariel, Morus serrator, Puffinus griseus*

## INTRODUCTION & METHODS

This paper records the results of the Ornithological Society of New Zealand's Beach Patrol Scheme for 1995. All sections of coast (Figure 1) were patrolled, except Canterbury South and Fiordland. In total, 554 beach patrol cards were received by 1 May 1997.

Kilometres 'travelled' are the total distances searched during patrols, whereas kilometres 'covered' are the lengths of coast patrolled monthly. Hence, if the same 1 km stretch of beach is patrolled twice in one month, 2 km have been travelled but only 1 km covered. For a detailed description of methods for beach patrolling and of the Beach Patrol Scheme see Powlesland & Imber (1988). The taxonomic nomenclature and sequence are as in Turbott (1990). Information from beach patrol cards are stored on the beach patrol database (a computer database programme designed by M. Powlesland). A database summary table is used to compare the number of birds found in previous years with the number found on 1995 beach patrols.

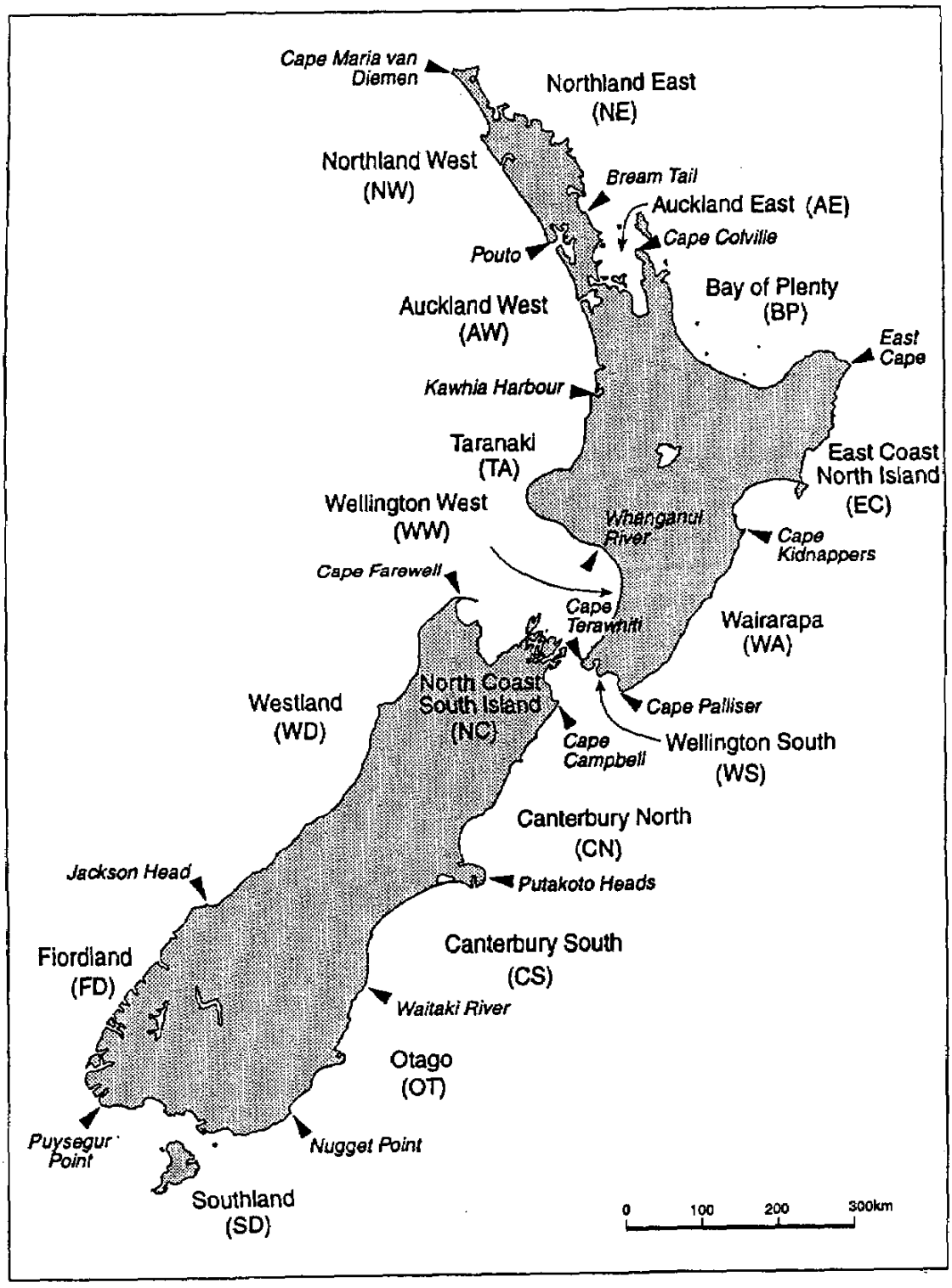


FIGURE 1 - The names, abbreviations and boundaries of the 18 sections of the New Zealand coastline in which beach patrols are grouped. Outlying Islands (OI) (e.g. Kermadec Islands, Chatham Islands) are not shown on the figure.

TABLE 1 - Numbers of dead seabirds recovered and length of shoreline patrolled (km) on the coasts of New Zealand in 1995.

| Coast | Code | | Month | | | | | | | | | | | | Total | | Birds/km |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | km | birds | of coast |
| Auckland East | AE | km | 0 | 8 | 0 | 5 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 2 | 19 | | |
| | | birds | 0 | 26 | 0 | 1 | 0 | 0 | 0 | 1 | 8 | 1 | 2 | 2 | | 41 | 2.16 |
| Auckland West | AW | km | 20 | 64 | 50 | 59 | 44 | 48 | 56 | 46 | 33 | 66 | 49 | 23 | 558 | | |
| | | birds | 33 | 29 | 37 | 52 | 13 | 48 | 349 | 209 | 92 | 149 | 124 | 87 | | 1222 | 2.19 |
| Bay of Plenty | BP | km | 7 | 3 | 2 | 8 | 7 | 10 | 0 | 2 | 0 | 25 | 28 | 41 | 133 | | |
| | | birds | 17 | 3 | 3 | 8 | 6 | 9 | 0 | 1 | 0 | 44 | 23 | 197 | | 311 | 2.34 |
| Canterbury North | CN | km | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 1 | 6 | 0 | 13 | | |
| | | birds | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 8 | 0 | | 11 | 0.85 |
| East Coast NI | EC | km | 10 | 16 | 14 | 15 | 12 | 12 | 5 | 18 | 11 | 22 | 4 | 2 | 141 | | |
| | | birds | 7 | 13 | 11 | 15 | 7 | 11 | 3 | 2 | 2 | 5 | 0 | 0 | | 76 | 0.54 |
| North Coast SI | NC | km | 0 | 3 | 0 | 0 | 4 | 0 | 0 | 1 | 0 | 3 | 6 | 2 | 19 | | |
| | | birds | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 3 | 1 | 4 | | 12 | 0.63 |
| Northland East | NE | km | 32 | 50 | 33 | 35 | 12 | 45 | 41 | 49 | 53 | 40 | 15 | 29 | 434 | | |
| | | birds | 276 | 143 | 11 | 37 | 10 | 53 | 23 | 162 | 40 | 51 | 9 | 114 | | 929 | 2.14 |
| Northland West | NW | km | 54 | 107 | 68 | 86 | 76 | 107 | 93 | 57 | 118 | 101 | 75 | 69 | 1011 | | |
| | | birds | 28 | 28 | 14 | 15 | 60 | 51 | 420 | 225 | 280 | 341 | 151 | 190 | | 1803 | 1.78 |
| Outlying Islands | OI | km | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 6 | 11 | | |
| | | birds | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 4 | | 9 | 0.82 |
| Otago | OT | km | 14 | 11 | 4 | 3 | 7 | 1 | 5 | 0 | 2 | 7 | 14 | 13 | 81 | | |
| | | birds | 7 | 11 | 7 | 6 | 9 | 0 | 0 | 0 | 1 | 8 | 10 | 16 | | 75 | 0.93 |
| Southland | SD | km | 6 | 6 | 11 | 6 | 23 | 6 | 6 | 6 | 9 | 13 | 22 | 7 | 121 | | |
| | | birds | 7 | 25 | 58 | 16 | 2135 | 6 | 26 | 13 | 34 | 30 | 58 | 45 | | 2453 | 20.27 |
| Taranaki | TA | km | 0 | 4 | 7 | 0 | 0 | 4 | 1 | 5 | 0 | 13 | 9 | 0 | 43 | | |
| | | birds | 0 | 13 | 11 | 0 | 0 | 6 | 1 | 9 | 0 | 68 | 48 | 0 | | 156 | 3.63 |
| Wairarapa | WA | km | 4 | 3 | 0 | 7 | 0 | 4 | 0 | 8 | 0 | 0 | 5 | 0 | 31 | | |
| | | birds | 5 | 2 | 0 | 7 | 0 | 0 | 0 | 2 | 0 | 0 | 3 | 0 | | 19 | 0.61 |
| Westland | WD | km | 0 | 18 | 2 | 2 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 24 | | |
| | | birds | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 1 | 0.04 |
| Wellington South | WS | km | 6 | 4 | 9 | 1 | 6 | 6 | 5 | 7 | 6 | 17 | 2 | 6 | 75 | | |
| | | birds | 8 | 11 | 68 | 1 | 3 | 9 | 11 | 12 | 1 | 7 | 0 | 3 | | 134 | 1.79 |
| Wellington West | WW | km | 10 | 8 | 6 | 23 | 14 | 16 | 38 | 10 | 36 | 15 | 20 | 16 | 212 | | |
| | | birds | 31 | 6 | 2 | 16 | 10 | 2 | 93 | 12 | 46 | 13 | 104 | 38 | | 373 | 1.76 |
| Total km travelled | | | 189 | 321 | 235 | 282 | 233 | 272 | 340 | 282 | 314 | 412 | 316 | 302 | 3498 | | |
| Total km covered | | | 163 | 305 | 206 | 250 | 205 | 260 | 251 | 210 | 275 | 329 | 256 | 216 | 2926 | | |
| Total seabirds recovered | | | 420 | 313 | 222 | 174 | 2254 | 195 | 926 | 649 | 505 | 726 | 541 | 700 | | 7625 | |
| Birds/km coast covered | | | 2.58 | 1.03 | 1.08 | 0.70 | 11.00 | 0.75 | 3.69 | 3.09 | 1.84 | 2.21 | 2.11 | 3.24 | | | 2.61 |

TABLE 2 - Coastal and monthly distribution of the seabird species rare in 1995 (<15 specimens).

| Species/subspecies | No. found | Coast(s) | Month(s) |
|---|---|---|---|
| *Diomedea* spp.** | 4 | AW,SD,TA,WW | May,Oct,Nov,Dec |
| *D. melanophrys* | 1 | NE | Oct |
| *D. exulans* | 3 | AW,NW(2) | Jun,Nov.Dec |
| *D. cauta* subspp.** | 4 | AW,CN,OT(2) | Feb,May,Jul,Oct |
| *D. cauta salvini* | 3 | NW(2),EC | Mar,Sep,Oct |
| *D. chrysostoma* | 5 | NW(5) | Jun(2), Aug(2),Dec |
| *Phoebetria palpebrata* | 14 | AW(6),NW(8) | Feb,Jun(3),Jul,Aug(4),Sep(2),Oct(3) |
| *Puffinus* spp.** | 8 | AW,NW(5),WW(2) | Jan,Sep,Dec(6) |
| *P. gavia/huttoni* | 4 | SD(2),WW(2) | Mar,Jun,Nov(2) |
| *Procellaria spp.*** | 1 | WW | Aug |
| *P. cinerea* | 1 | AW | Aug |
| *P. parkinsoni* | 3 | AW,NE,BP | Feb,Oct(2) |
| *P. westlandica* | 4 | NW(4) | Aug(2),Dec(2) |
| *P. aequinoctialis* | 1 | AW | Apr |
| *Thalassoica antarctica* | 8 | AW(2),NW(2),SD(4) | Aug(2),Sep(6) |
| *Fulmarus glacialoides* | 9 | AW(2),NW(4),SD(3) | Sep(4),Oct(3),Nov,Dec |
| *Pterodroma* spp.** | 1 | WW | Jul |
| *P. pycrofti* | 1 | NE | Jan |
| *P. nigripennis* | 3 | EC,WA(2) | Apr(3) |
| *P. neglecta* | 5 | AW,EC,OI(3) | May,Jul,Oct(3) |
| *P. mollis* | 1 | BP | Oct |
| *Oceanites nereis* | 1 | AW | Jun |
| *Megadyptes antipodes* | 6 | OT(2),SD(4) | Feb,Mar(3),Apr,Jun |
| *Phalacrocorax* spp.** | 1 | AW | Jul |
| *P. carbo* | 8 | EC(4),WW(4) | Feb,Apr(2),Jun,Jul,Aug,Sep,Oct |
| *P. sulcirostris* | 3 | AW,NW,WW | Apr,Jun,Nov |
| *P. melanoleucos* | 10 | AW(3),BP,EC,WS(5) | Jan(2),Feb,May,Jun,Jul,Aug,Oct,Nov,Dec |
| *Leucocarbo chalconotus* | 6 | OT(4),SD(2) | Feb(5),May |
| *Fregata ariel* | 1 | NE | Feb |
| *Stercorarius longicaudus* | 1 | AW | Mar |
| *Larus* spp.** | 2 | BP(2) | Jun(2) |
| *Sterna spp.*** | 1 | AW | Aug |
| *S. caspia* | 5 | AW(3),NE,WW | Apr,Jun(2),Jul(2) |
| Total | 129 | | |

** species or subspecies was not identified by the patroller

Each section of the New Zealand coastline is given an abbreviation (e.g. BP = Bay of Plenty) (see also Fig. 1). This year two new coastal sections have been formed by splitting the former Auckland West and Auckland East sections. The new coastal sections are Northland West (NW) and Northland East (NE). Northland West extends south from Cape Maria van Diemen to Pouto at the north entrance of Kaipara Harbour. The new Auckland West section includes all of Kaipara Harbour and south to Kawhia Harbour. Northland East extends from Cape Maria van Diemen east along the Northland coast to Bream Tail (just north of Mangawhai Estuary). It includes the Hen and Chickens and Poor Knights Island groups. The new Auckland East section extends south from Bream Tail to Cape Colville and includes Great Barrier, Little Barrier and Mokohinau Island groups.

## RESULTS AND DISCUSSION

### Recoveries in 1995

In 1995, the total length of coast travelled was 3498 km, along which 7625 seabirds were found by 193 members of the Ornithological Society of New Zealand and their friends. On average, 2.61 birds were recovered per kilometre of coast covered (Table 1). The total distance travelled was 87% of the average of 4007 km per year recorded over the past 25 years (1970-1994) while the number of seabirds found in 1995 was 81% of the annual average of 9382 birds for the same 25-year period. This period is used for comparison because the distance travelled annually was fairly constant, whereas from 1943 to 1970 the distance travelled increased (Powlesland 1990). This is the tenth year in succession that below average numbers of seabirds have been found on New Zealand beach patrols. Table 1 shows the kilometres covered, the number of seabirds per month, and in total, for the various sections of coast, plus the number of birds found per kilometre covered for each coastal section. Coastal and monthly totals for 'uncommon' species (15 or fewer specimens) are given in Table 2, while for 'common' species (more than 15 specimens) coastal totals are presented in Table 3 and monthly totals in Table 4.

### Unusual finds

A juvenile Lesser Frigatebird (*Fregata ariel*) was found on Waipu Cove Beach (NE) on 4 February. This is the third record for the Beach Patrol Scheme. The two previous recoveries were on Auckland West beaches in January 1971 and November 1983. There have been about 12 Lesser Frigatebirds recovered dead in New Zealand and about 12 sightings of live birds. The nearest breeding sites are on islands off Queensland, New Caledonia, Fiji, Tonga and Samoa (Heather & Robertson 1996).

Five Kermadec Petrels (*Pterodroma neglecta*) were found by patrollers in 1995. This is the highest annual total recorded in the Beach Patrol Scheme. The first bird was found on East Clive Beach (EC) on 4 May. This specimen was deposited in the bone collection at the Museum of New Zealand, Wellington. Another Kermadec Petrel was found on Muriwai Beach (AW) on 8 July. Three birds were picked up on Raoul Island beaches (OI) on 22 October, adjacent to their main breeding ground on the Meyer Islets (Marchant & Higgins 1990). Three Kermadec Petrels have been recorded previously in the Beach Patrol Scheme. These were found on Auckland West beaches in April 1981, March 1986 and September 1987.

A Soft-plumaged Petrel (*Pterodroma mollis*) was found on Papamoa Beach (BP) on 6 October. This is the sixth specimen recorded in the Beach Patrol Scheme. The first Soft-plumaged Petrel recorded on a New Zealand beach was also found in the Bay of Plenty in November 1971 and another was found there in November 1984. These records suggest that Soft-plumaged Petrels frequently occur off the Bay of Plenty coast in spring. The nearest known breeding colony is on Antipodes Island (Turbott 1990).

A Grey-backed Storm Petrel (*Oceanites nereis*) was picked up on Muriwai Beach (AW) on 11 June. There have been 18 previous specimens recovered on beach patrols. The most recovered in any one year is two birds.

TABLE 3 - Coastal distribution of the seabird species commonly found in 1995 (>15 specimens).

| Species/subspecies | Coast | | | | | | | | | | | | | | | | Total no. of birds |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | AW | AE | NW | NE | BP | TA | WW | EC | WA | WS | NC | WD | CN | OT | SD | OI | |
| *Diomedea cauta steadi* | 6 | 0 | 7 | 1 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 26 |
| *D. bulleri* | 5 | 0 | 4 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 15 | 0 | 27 |
| *Puffinus carneipes* | 4 | 3 | 15 | 99 | 30 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 152 |
| *P. bulleri* | 42 | 1 | 104 | 102 | 0 | 13 | 18 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 284 |
| *P. griseus* | 115 | 0 | 195 | 14 | 12 | 21 | 26 | 1 | 3 | 0 | 2 | 0 | 0 | 12 | 2136 | 0 | 2537 |
| *P. tenuirostris* | 6 | 0 | 17 | 7 | 5 | 2 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | 0 | 82 |
| *P. gavia* | 45 | 2 | 48 | 111 | 40 | 11 | 7 | 5 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 274 |
| *P. huttoni* | 4 | 0 | 5 | 1 | 0 | 0 | 8 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 23 |
| *P. assimilis* | 1 | 0 | 16 | 3 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 |
| *Pelecanoides urinatrix* | 11 | 0 | 21 | 29 | 40 | 4 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 17 | 0 | 141 |
| *Lugensa brevirostris* | 16 | 0 | 21 | 3 | 1 | 9 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 53 |
| *Daption capense* | 23 | 0 | 9 | 1 | 2 | 1 | 4 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 44 |
| *Macronectes* spp.** | 4 | 0 | 16 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 1 | 28 |
| *Pachyptila* spp.** | 52 | 0 | 36 | 4 | 0 | 26 | 64 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 189 |
| *P. turtur* | 246 | 0 | 85 | 21 | 1 | 18 | 76 | 2 | 0 | 0 | 2 | 0 | 0 | 2 | 31 | 0 | 484 |
| *P. belcheri* | 112 | 0 | 34 | 1 | 0 | 1 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 157 |
| *P. desolata* | 6 | 0 | 7 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| *P. salvini* | 19 | 0 | 13 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 37 |
| *P. vittata* | 14 | 0 | 10 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 37 | 0 | 67 |
| *Halobaena caerulea* | 62 | 0 | 63 | 0 | 1 | 7 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 1 | 152 |
| *Pterodroma cookii* | 6 | 0 | 1 | 21 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| *P. inexpectata* | 4 | 0 | 8 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 0 | 54 |
| *P. macroptera* | 10 | 0 | 21 | 48 | 9 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 93 |
| *P. lessonii* | 49 | 0 | 87 | 3 | 10 | 7 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 161 |
| *Pelagodroma marina* | 1 | 0 | 9 | 2 | 6 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| *Eudyptula minor* | 38 | 4 | 593 | 318 | 86 | 4 | 14 | 2 | 2 | 2 | 1 | 0 | 3 | 7 | 17 | 2 | 1093 |
| *Morus serrator* | 224 | 10 | 268 | 76 | 20 | 17 | 15 | 8 | 1 | 4 | 2 | 0 | 1 | 1 | 1 | 0 | 648 |
| *Phalacrocorax varius* | 3 | 5 | 3 | 13 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| *Stictocarbo punctatus* | 2 | 16 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 2 | 1 | 0 | 15 | 23 | 0 | 63 |
| *Larus dominicanus* | 41 | 0 | 51 | 31 | 12 | 6 | 62 | 36 | 1 | 109 | 0 | 0 | 1 | 17 | 31 | 2 | 400 |
| *L. novaehollandiae* | 9 | 0 | 0 | 11 | 5 | 1 | 1 | 3 | 0 | 6 | 0 | 0 | 3 | 9 | 3 | 0 | 51 |
| *L. bulleri* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 16 |
| *Sterna striata* | 13 | 0 | 3 | 1 | 1 | 2 | 3 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 30 |
| Total | 1193 | 41 | 1770 | 924 | 306 | 155 | 360 | 68 | 17 | 129 | 12 | 1 | 10 | 67 | 2437 | 6 | 7496 |

** species not identified by the patroller

## Wrecks of seabirds

There was a significant wreck of Australasian Gannets (*Morus serrator*) in 1995. Patrollers recovered 648 birds at an average rate of 22.2 birds per 100 km of beach covered. These are the highest annual totals and highest recovery rates since the start of the Beach Patrol Scheme. The previous highest number found was 500 birds in 1985. Just over 50% of the Australasian Gannets wrecked in 1995 came ashore between August and October, mainly on Auckland West and Northland West beaches. The cause of this increased mortality was not determined. One possible factor was the long period of strong and severe west and south-west winds reported in July and August 1995. Another factor may have been the large die-off of pilchards (*Sardinops neopilchardus*) which occurred on Northland beaches from late July and continued around the New Zealand coast in August and September. Therefore, the wreck of Australasian Gannets may have been caused by a reduction in prey availability or through the same agents that caused the pilchard die-off.

A large wreck of Sooty Shearwaters (*Puffinus griseus*) was found on Mason Bay, Stewart Island (SD) in May. Five patrols were carried out on this beach from 7-15 May. On 7-8 May, 182 birds were picked up on 13 km of beach. On 10-11 May, 7.5 km of the same beach was patrolled and a further 543 Sooty Shearwaters were recovered. On 15 May, 8 km at the south end of Mason Bay was patrolled (the same section as covered on 7 May) and an additional 1,345 Sooty Shearwaters were found on the beach. The patrollers also saw live birds washing up on the beach on 7 and 15 May. All but one of the birds found on 15 May were fledglings. An unknown proportion of the wrecked shearwaters were considered to be debris from the muttonbird harvest on nearby islands as the remains included severed wings and heads bound together in wax. Thus the wreck appeared to be a combination of higher than usual mortality of fledglings and discards from the mutton-birding industry. The 1,345 Sooty Shearwaters and 21 other seabirds found on 15 May is probably one of the largest number of birds found on any single beach patrol in New Zealand.

A wreck of White-headed Petrels (*Pterodroma lessonii*) occurred in October 1995. Patrollers picked up 119 birds, mainly from Northland West and Auckland West beaches. The annual recovery rate of 5.53 birds per 100 km was the third highest for this species since the start of the Beach Patrol Scheme. Only the 8.00 birds per 100 km in 1975 and 5.58 birds per 100 km in 1985 exceeded the 1995 rate.

## Higher than normal recovery rates of seabirds in 1995

Seven species were recovered at annual rates much higher than normal in 1995. These were Sooty Shearwaters, Buller's Shearwaters (*Puffinus bulleri*), Mottled Petrels (*Pterodroma inexpectata*), Grey-faced Petrels (*Pterodroma macroptera gouldi*), Blue Petrels (*Halobaena caerulea*), Antarctic Petrels (*Thalassoica antarctica*) and Light-mantled Sooty Albatrosses (*Phoebetria palpebrata*).

From throughout New Zealand in 1995, 2537 Sooty Shearwaters were picked up on beaches. This is the third highest annual total since the start of the Beach Patrol Scheme. The highest tallies are 7017 in 1978 and 3665 in 1975.

TABLE 4 - Monthly distribution of the seabird species commonly found in 1995 (>15 specimens).

| Species/subspecies | Month | | | | | | | | | | | | Total no. of birds |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | |
| *Diomedea cauta steadi* | 1 | 0 | 2 | 1 | 0 | 5 | 3 | 2 | 4 | 3 | 4 | 1 | 26 |
| *D. bulleri* | 0 | 0 | 2 | 0 | 2 | 0 | 7 | 7 | 7 | 2 | 0 | 0 | 27 |
| *Puffinus carneipes* | 32 | 34 | 1 | 4 | 6 | 6 | 2 | 4 | 0 | 10 | 4 | 49 | 152 |
| *P. bulleri* | 61 | 21 | 10 | 5 | 7 | 27 | 5 | 0 | 2 | 42 | 52 | 52 | 284 |
| *P. griseus* | 18 | 16 | 17 | 7 | 2085 | 2 | 7 | 1 | 1 | 54 | 191 | 138 | 2537 |
| *P. tenuirostris* | 11 | 6 | 14 | 0 | 14 | 1 | 1 | 0 | 0 | 3 | 10 | 22 | 82 |
| *P. gavia* | 52 | 30 | 20 | 16 | 15 | 18 | 7 | 13 | 11 | 21 | 14 | 57 | 274 |
| *P. huttoni* | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 3 | 10 | 5 | 1 | 23 |
| *P. assimilis* | 0 | 0 | 0 | 0 | 0 | 3 | 6 | 2 | 5 | 4 | 1 | 15 | 36 |
| *Pelecanoides urinatrix* | 11 | 3 | 1 | 6 | 4 | 19 | 14 | 3 | 13 | 15 | 12 | 40 | 141 |
| *Lugensa brevirostris* | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 29 | 9 | 9 | 0 | 0 | 53 |
| *Daption capense* | 0 | 0 | 1 | 1 | 0 | 0 | 12 | 15 | 1 | 11 | 1 | 2 | 44 |
| *Macronectes* spp.** | 1 | 0 | 0 | 0 | 1 | 3 | 8 | 6 | 5 | 3 | 0 | 1 | 28 |
| *Pachyptila* spp.** | 8 | 5 | 1 | 1 | 4 | 7 | 34 | 28 | 10 | 40 | 43 | 8 | 189 |
| *P. turtur* | 22 | 14 | 1 | 3 | 10 | 8 | 205 | 71 | 45 | 38 | 40 | 27 | 484 |
| *P. belcheri* | 0 | 1 | 0 | 0 | 1 | 1 | 109 | 17 | 19 | 6 | 3 | 0 | 157 |
| *P. desolata* | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 1 | 1 | 2 | 1 | 0 | 16 |
| *P. salvini* | 0 | 0 | 1 | 0 | 0 | 1 | 11 | 18 | 3 | 3 | 0 | 0 | 37 |
| *P. vittata* | 1 | 1 | 2 | 0 | 0 | 2 | 10 | 5 | 5 | 15 | 13 | 13 | 67 |
| *Halobaena caerulea* | 0 | 0 | 0 | 0 | 0 | 7 | 11 | 24 | 59 | 46 | 5 | 0 | 152 |
| *Pterodroma cookii* | 6 | 10 | 1 | 6 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 2 | 29 |
| *P. inexpectata* | 2 | 3 | 9 | 3 | 25 | 1 | 0 | 0 | 0 | 1 | 7 | 3 | 54 |
| *P. macroptera* | 36 | 12 | 0 | 6 | 1 | 2 | 3 | 7 | 2 | 15 | 1 | 8 | 93 |
| *P. lessoni* | 0 | 0 | 0 | 0 | 0 | 3 | 5 | 7 | 19 | 119 | 4 | 4 | 161 |
| *Pelagodroma marina* | 1 | 2 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 6 | 4 | 3 | 20 |
| *Eudyptula minor* | 50 | 40 | 7 | 13 | 15 | 9 | 357 | 246 | 89 | 91 | 19 | 157 | 1093 |
| *Morus serrator* | 44 | 24 | 15 | 43 | 13 | 22 | 32 | 92 | 150 | 103 | 58 | 52 | 648 |
| *Phalacrocorax varius* | 2 | 6 | 3 | 0 | 2 | 0 | 0 | 5 | 5 | 2 | 1 | 3 | 29 |
| *Stictocarbo punctatus* | 0 | 18 | 5 | 7 | 5 | 1 | 4 | 6 | 1 | 8 | 3 | 5 | 63 |
| *Larus dominicanus* | 35 | 45 | 91 | 37 | 31 | 21 | 41 | 20 | 13 | 20 | 30 | 16 | 400 |
| *L. novaehollandiae* | 11 | 3 | 8 | 0 | 2 | 3 | 3 | 3 | 3 | 6 | 3 | 6 | 51 |
| *L. bulleri* | 2 | 1 | 2 | 3 | 2 | 1 | 3 | 0 | 2 | 0 | 0 | 0 | 16 |
| *Sterna striata* | 8 | 6 | 0 | 3 | 3 | 3 | 0 | 0 | 2 | 0 | 3 | 2 | 30 |
| Total | 416 | 301 | 216 | 165 | 2249 | 179 | 916 | 635 | 490 | 708 | 534 | 687 | 7496 |

** species not identified by the patroller

Buller's Shearwaters were found at an average rate of 9.8 per 100 km of beach covered. This is the second highest recovery rate since the start of the Beach Patrol Scheme. There were 284 birds found, the fifth highest annual total for this species. The highest number of Buller's Shearwaters found in any year was 492 in 1978.

An unusually large number of Mottled Petrels were found in 1995. The 54 birds found is the third highest annual total, exceeded only by the 68 recovered in 1982 and 59 in 1978. The average recovery rate in 1995 of 1.85 birds per 100 km of beach covered was the second highest rate after the 2.03 birds per 100 km of beach covered found in 1982.

Grey-faced Petrels washed ashore in larger numbers than usual in 1995. The 93 birds found is the fifth highest annual total. The species came ashore at an average rate of 3.19 birds per 100 km patrolled. This is the fourth highest annual rate since the start of the Beach Patrol Scheme. The highest number of Grey-faced Petrels found in any year was 168 in 1989, which also had the highest annual rate of 4.46 birds per 100 km of beach covered.

There were 152 Blue Petrels found on beaches in 1995 at an average rate of 5.22 birds per 100 km covered. This is the fifth highest number found and also the fifth highest recovery rate. Birds were found as far north as the Kermadec Islands (Clifford & Lawrie 1997). The highest annual total and recovery rate of Blue Petrels on New Zealand beaches was the 881 birds found in 1984 at an average rate of 18.87 birds per 100 km of beach covered.

Eight Antarctic Petrels were found in 1995 at an average rate of 0.27 birds per 100 km of beach covered. This is the fourth equal highest number found and the third highest annual recovery rate after 1978 and 1991. The largest number found in any year was 77 birds reported in 1978.

Fourteen Light-mantled Sooty Albatrosses were found in 1995 at an average rate of 0.48 birds per 100 km of beach covered. This was the highest annual recovery rate since 1975 and the fourth highest annual rate since the start of the Beach Patrol Scheme. The highest annual recovery rate was 1.03 birds per 100 km of beach in 1975. That year also had the highest annual total of 36 Light-mantled Sooty Albatrosses.

## Lower than normal recovery rates of seabirds in 1995

Five species were recovered at rates much lower than normal in 1995. These were the Short-tailed Shearwater (*Puffinus tenuirostris*), Hutton's Shearwater (*Puffinus huttoni*), Common Diving Petrel (*Pelecanoides urinatrix*), Black Petrel (*Procellaria parkinsoni*) and Red-billed Gull (*Larus novaehollandiae scopulinus*).

There were 82 Short-tailed Shearwaters found on beaches in 1995. These were found at an average rate of 2.81 birds per 100 km of beach covered. This is the lowest number found since 1980 (when only 53 were picked up by patrollers) and the third lowest annual recovery rate since 1967. Other years when low numbers were recovered by patrollers were 1980 and 1990. The average annual recovery rate is normally 7 birds per 100 km.

Beach patrollers identified 23 Hutton's Shearwaters in 1995. This is the lowest number found since 1980 when only 20 were recovered. Normally between 30 and 70 are recovered on beaches each year.

Only 141 Common Diving Petrels were picked up in 1995. This is the lowest annual total since 1980 when only 69 birds were found. Usually between 200 and 1000 Common Diving Petrels are picked up each year.

Only three Black Petrels were found in 1995. This is the lowest number found on beaches since 1976. Normally between five and 20 Black Petrels are found by patrollers each year. The lack of Black Petrels found in 1995 may have resulted from less beach patrolling effort on Auckland East beaches. The species is regularly washed ashore on this section of the coast in summer and autumn.

Very few Red-billed Gulls were washed ashore on beaches in 1995. Only 51 birds were found by beach patrollers at an average recovery rate of 1.75 birds per 100 km of beach covered. This is the lowest number found since 1968 and the lowest annual recovery rate since 1960.

### Band recoveries

There were 11 banded seabirds noted on beach patrol cards. Six were Southern Black-backed Gulls (*Larus dominicanus*), all of which were picked up by R. Cotter on Somes Island in Wellington Harbour (WS) in January and March 1995. Four of these birds had been banded as chicks by R. Cossee on Somes Island in December 1994. The other two were adults that had been banded as chicks by R. Cossee on Somes Island in December 1990 and December 1991.

Two banded Australasian Gannets were reported by beach patrollers. One bird was found by South Auckland OSNZ members on Kariotahi Beach (AW) in October 1995. It had been banded as an adult by I. Nicholson at the Muriwai colony (AW) in November 1982. The other bird was located by R. Cotter south of Titahi Bay (WW) in July 1995. It had been banded as a chick by V. Davis at White Island (BP) in February 1995.

Two banded Red-billed Gulls were found by B. Elliot on Kaikoura Peninsula beaches (CN) in November 1995. Both had been banded as chicks by J. Mills at the Kaikoura Peninsula colony in November 1982 and November 1984.

A banded Grey-faced Petrel was found freshly beachcast with a broken wing on O'Neills Beach, Te Henga (AW) in April 1995 by A. Tennyson. This bird had been banded as an adult by G. Taylor on Kauwahaia Island, Te Henga in May 1993 and was last recaptured ashore on the island in April 1994 (pers. obs.).

### Causes of mortality

Presumably most birds wash ashore after dying of starvation, injury or fatigue caused by a series of prolonged strong onshore winds. Occasionally, observers reported seabird mortality that apparently was caused by human activity.

Seven dead seabirds were found by patrollers that had been caught on fishing lines. Four were Australasian Gannets including two birds found on Ocean Beach

(NE) in September that were joined together with fishing lines and hooks; another found in October at Kaiaua (AE) after it had swallowed a fish hook and had fishing line wrapped around its body, and a bird found at Petone Beach (WS) in October caught by a fishing line.

Two Fluttering Shearwaters (*Puffinus gavia*) were found on Petone Beach (WS) in July and October that had been caught on fishing lines. One of these birds was snared by a fishing line with several hooks and a sinker, typical of those used by recreational fishers in Wellington Harbour. Fluttering shearwaters occasionally get caught by fishers when the birds flock in Wellington Harbour during the winter. Birds at Wellington wharves have been seen to dive after baited hooks and get caught (J. Molloy pers. comm.). In April, one Southern Black-backed Gull was picked up on Dargaville Beach (NW) with fishing line and a sinker tangled around its body.

Other causes of mortality include poisoning and shooting of seabirds. Two Southern Black-backed Gulls washed up on Mt Maunganui Beach (BP) in November were considered to be victims of a Department of Conservation poisoning campaign on nearby Matakana Island. [These gulls have a detrimental impact on the breeding success of the endemic New Zealand Dotterel (*Charadrius obscurus*)]. Another two Southern Black-backed Gulls were found in fresh condition but wounded about the head on East Clive Beach (EC) in February. The cause of these injuries was unknown. Perhaps they were the result of fights between gulls. A further three Southern Black-backed Gulls were found on Oreti Beach (SD) in July that had been apparently shot. This species is unprotected in New Zealand.

Only one oiled seabird was reported in 1995; a Blue Penguin (*Eudyptula minor*) found on Pekapeka Beach (WW) in July. A Grey-faced Petrel was found on Back Beach, New Plymouth (TA) in July with a blood-stained broken wing. This bird may have come from the nearby colony on Motuotamatea Island. Two South Island Pied Oystercatchers (*Haematopus ostralegus finschi)* were found dead on Oreti Beach (SD) in February and December 1995, apparently having been hit by a car.

**Miscellaneous birds**

A total of 156 birds other than seabirds were found on beaches in 1995. There were 28 species recorded including: 40 Australian Magpies (*Gymnorhina tibicen*), 23 Mallards (*Anas platyrhynchos*), 13 Grey Ducks (*Anas superciliosa*), 11 Black Swans (*Cygnus atratus*), 10 Blackbirds (*Turdus merula*), eight Paradise Shelducks (*Tadorna variegata*), seven Domestic Geese (*Anser* sp.), five Starlings (*Sturnus vulgaris*), four each of Australasian Pied Stilts (*Himantopus himantopus leucocephalus*) and Rock Pigeons (*Columba livia*), three each of South Island Pied Oystercatchers, Pukeko (*Porphyrio porphyrio melanotus*) and Song Thrushes (*Turdus philomelos*), two each of Cattle Egrets (*Bubulcus ibis*), Ring-necked Pheasants (*Phasianus colchicus*) and Royal Spoonbills (*Platalea regia*), and one each of Australasian Harrier (*Circus approximans*), Domestic Fowl (*Gallus domesticus*), Weka (*Gallirallus australis*), Spur-winged Plover (*Vanellus miles novaehollandiae*), Banded Dotterel (*Charadrius bicinctus*), New Zealand Pigeon (*Hemiphaga*

*novaeseelandiae*), Long-tailed Cuckoo (*Eudynamys taitensis*), New Zealand Kingfisher (*Halcyon sancta vagans*), Skylark (*Alauda arvensis*), Tui (*Prosthemadera novaeseelandiae*), House Sparrow (*Passer domesticus*) and Common Myna (*Acridotheres tristis*). In addition, there were two unidentified passerines and two unidentified ducks.

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