

# Seabirds found dead on New Zealand beaches in 1996

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## ABSTRACT

During 1996, participants in the Beach Patrol Scheme patrolled 3071 km of the New Zealand coastline. There were 4649 dead seabirds of 58 species recovered by patrollers. In addition, beach patrollers found 165 birds of 32 non-seabird species. Unusual finds included one Chatham Island Mollymawk (*Diomedea cauta eremita*), one New Caledonian Petrel (*Pterodroma leucoptera caledonica*), two Channel-billed Cuckoos (*Scythrops novaehollandiae*) and two Spine-tailed Swifts (*Hirundapus caudacutus*). There was a moderate-sized wreck of Sooty Shearwaters (*Puffinus griseus*) on North Island west coast beaches in November. The highest annual totals of Pitt Island Shag (*Stictocarbo featherstoni*) and Chatham Island Shag (*Leucocarbo onslowi*) were recorded in 1996. The mean annual recovery rates of Buller's Mollymawks (*Diomedea bulleri*) and Black-billed Gull (*Larus bulleri*) were the highest recorded since the start of the Beach Patrol Scheme. Red-billed Gulls (*Larus novaehollandiae scopulinus*) had their lowest annual recovery rate in 1996. Causes of seabird mortality are discussed in the paper.

**KEY WORDS:** Seabirds, mortality, *Diomedea cauta eremita*, *Diomedea bulleri*, *Larus bulleri*

## INTRODUCTION & METHODS

This paper records the results of the Ornithological Society of New Zealand's Beach Patrol Scheme for 1996. All sections of coast were patrolled except Canterbury South and Fiordland. In total, 440 Beach Patrol cards were received by 31 December 1998.

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 has been travelled but only 1 km covered. Each section of the New Zealand coastline is given an abbreviation (e.g. BP = Bay of Plenty; see map in Taylor 1997). 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 1996 beach patrols.

## RESULTS AND DISCUSSION

### Recoveries in 1996

In 1996, the total length of coast travelled was 3071 km, along which 4649 seabirds were found by 162 members of the Ornithological Society of New Zealand (OSNZ) and their friends. On average, 1.70 birds were recovered per kilometre of coast covered (Table 1). The total distance travelled was 77% of the average of 4007 km per year recorded over the 25-year period (1970-1994) while the number of seabirds found in 1996 was 50% 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 eleventh year in succession that below average numbers of seabirds have been found on New Zealand beach patrols. However, the numbers are consistent with the totals recorded in the 1990s. 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.

Only six coastal sections had more than 100 km of beaches patrolled in 1996. These were: Northland West (975 km), Auckland West (552 km), Northland East (417 km), Outlying Islands (166 km), Wellington West (148 km) and Southland (128 km). Of the coastal sections where greater than 50 km of beaches were covered in 1996, Taranaki had the highest rate of recovery at 3.6 birds per km of coast. This was closely followed by 3.47 birds per km on Wellington West beaches. Most of the Taranaki seabirds came ashore in November and December whereas most of those on Wellington beaches were found in January, February and November. The lowest rate of seabird recoveries was on Otago beaches with 0.61 birds per km.

### Unusual finds

A Chatham Island Mollymawk (*Diomedea cauta eremita*) was found on Kaharoa Beach on Chatham Island (OI) on 4 July; this is the eighth record for the Beach Patrol Scheme. Birds have been reported previously from Auckland West (August 1964), Bay of Plenty (December 1971), Wellington West (December 1961, September 1971) and Chatham Island (January 1979) beaches. Chatham Island Mollymawks breed only on The Pyramid, a small rocky island in the Chatham Island group (Heather & Robertson 1996).

A New Caledonian Petrel (*Pterodroma leucoptera caledonica*) was picked up on Bream Bay Beach (NE) on 16 January. There have been 15 specimens recorded previously by the Beach Patrol Scheme with a maximum of two birds found in any year. Ten birds were picked up on Muriwai Beach (AW) in April 1942 before the Beach Patrol Scheme was initiated (Bull 1943, Imber & Jenkins 1981).

TABLE 1 - Numbers of dead seabirds recovered and kilometres covered on each coast in 1996

| Coast                  | Code |       | Jan  | Feb   | Mar  | Apr   | May  | Jun   | Jul  | Aug   | Sept | Oct   | Nov  | Dec   | Total |       | Birds/km<br>of coast |
|------------------------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|-------|-------|----------------------|
|                        |      |       | km   | birds | km   | birds | km   | birds | km   | birds | km   | birds | km   | birds | km    | birds |                      |
| Auckland East          | AE   | km    | 3    | 4     | 0    | 3     | 0    | 0     | 1    | 0     | 22   | 0     | 0    | 0     | 33    |       |                      |
|                        |      | birds | 30   | 14    | 0    | 4     | 0    | 0     | 1    | 0     | 6    | 0     | 0    | 0     |       | 55    | 1.67                 |
| Auckland West          | AW   | km    | 15   | 63    | 25   | 20    | 39   | 56    | 56   | 58    | 62   | 29    | 66   | 63    | 552   |       |                      |
|                        |      | birds | 20   | 56    | 23   | 2     | 16   | 37    | 65   | 49    | 21   | 81    | 522  | 115   |       | 1007  | 1.82                 |
| Bay of Plenty          | BP   | km    | 6    | 3     | 1    | 0     | 0    | 0     | 0    | 0     | 1    | 0     | 0    | 3     | 14    |       |                      |
|                        |      | birds | 10   | 2     | 0    | 0     | 0    | 0     | 0    | 0     | 1    | 0     | 0    | 5     |       | 18    | 1.29                 |
| Canterbury North       | CN   | km    | 6    | 6     | 0    | 0     | 0    | 0     | 6    | 0     | 0    | 2     | 0    | 0     | 20    |       |                      |
|                        |      | birds | 2    | 2     | 0    | 0     | 0    | 0     | 7    | 0     | 0    | 2     | 0    | 0     |       | 13    | 0.65                 |
| East Coast NI          | EC   | km    | 14   | 4     | 3    | 4     | 7    | 10    | 8    | 3     | 11   | 2     | 9    | 8     | 83    |       |                      |
|                        |      | birds | 18   | 5     | 4    | 6     | 4    | 10    | 4    | 3     | 5    | 1     | 7    | 1     |       | 68    | 0.82                 |
| North Coast SI         | NC   | km    | 2    | 0     | 2    | 0     | 1    | 0     | 0    | 0     | 0    | 0     | 0    | 5     | 10    |       |                      |
|                        |      | birds | 7    | 0     | 2    | 0     | 5    | 0     | 0    | 0     | 0    | 0     | 0    | 24    |       | 38    | 3.80                 |
| Northland East         | NE   | km    | 27   | 57    | 27   | 50    | 37   | 27    | 27   | 33    | 37   | 27    | 41   | 27    | 417   |       |                      |
|                        |      | birds | 118  | 117   | 83   | 25    | 12   | 34    | 27   | 15    | 25   | 42    | 50   | 21    |       | 569   | 1.36                 |
| Northland West         | NW   | km    | 34   | 91    | 62   | 79    | 89   | 91    | 86   | 99    | 123  | 70    | 78   | 73    | 975   |       |                      |
|                        |      | birds | 12   | 117   | 52   | 20    | 46   | 92    | 158  | 171   | 52   | 121   | 617  | 124   |       | 1582  | 1.62                 |
| Outlying Islands       | OI   | km    | 12   | 7     | 5    | 0     | 20   | 0     | 21   | 36    | 0    | 20    | 24   | 21    | 166   |       |                      |
|                        |      | birds | 24   | 8     | 0    | 0     | 48   | 0     | 43   | 5     | 0    | 5     | 4    | 17    |       | 154   | 0.93                 |
| Otago                  | OT   | km    | 6    | 6     | 2    | 8     | 3    | 3     | 3    | 3     | 6    | 5     | 6    | 8     | 59    |       |                      |
|                        |      | birds | 7    | 8     | 2    | 5     | 1    | 2     | 0    | 0     | 1    | 2     | 2    | 6     |       | 36    | 0.61                 |
| Southland              | SD   | km    | 0    | 7     | 6    | 22    | 6    | 10    | 14   | 12    | 21   | 11    | 8    | 11    | 128   |       |                      |
|                        |      | birds | 0    | 14    | 27   | 14    | 31   | 17    | 24   | 23    | 41   | 46    | 79   | 22    |       | 338   | 2.64                 |
| Taranaki               | TA   | km    | 0    | 4     | 0    | 0     | 0    | 0     | 3    | 7     | 2    | 14    | 11   | 9     | 50    |       |                      |
|                        |      | birds | 0    | 17    | 0    | 0     | 0    | 0     | 5    | 12    | 2    | 9     | 64   | 71    |       | 180   | 3.60                 |
| Wairarapa              | WA   | km    | 0    | 4     | 1    | 8     | 1    | 0     | 4    | 0     | 3    | 4     | 0    | 0     | 25    |       |                      |
|                        |      | birds | 0    | 10    | 0    | 2     | 1    | 0     | 6    | 0     | 1    | 0     | 0    | 0     |       | 20    | 0.80                 |
| Westland               | WD   | km    | 0    | 0     | 0    | 0     | 0    | 0     | 0    | 0     | 0    | 1     | 0    | 0     | 1     |       |                      |
|                        |      | birds | 0    | 0     | 0    | 0     | 0    | 0     | 0    | 0     | 0    | 3     | 0    | 0     |       | 3     | 3.00                 |
| Wellington South       | WS   | km    | 9    | 4     | 6    | 0     | 0    | 3     | 0    | 4     | 18   | 0     | 6    | 1     | 51    |       |                      |
|                        |      | birds | 10   | 10    | 5    | 0     | 0    | 2     | 0    | 4     | 8    | 3     | 10   | 3     |       | 55    | 1.08                 |
| Wellington West        | WW   | km    | 17   | 18    | 3    | 13    | 1    | 30    | 2    | 7     | 18   | 3     | 21   | 15    | 148   |       |                      |
|                        |      | birds | 115  | 145   | 4    | 14    | 2    | 15    | 2    | 8     | 24   | 1     | 149  | 34    |       | 513   | 3.47                 |
| Total km travelled     |      |       | 172  | 322   | 165  | 242   | 227  | 243   | 278  | 276   | 340  | 229   | 316  | 260   | 3071  |       |                      |
| Total km covered       |      |       | 151  | 278   | 143  | 207   | 204  | 230   | 231  | 262   | 324  | 188   | 270  | 244   | 2732  |       |                      |
| Total birds recovered  |      |       | 373  | 525   | 202  | 92    | 166  | 209   | 342  | 290   | 187  | 316   | 1504 | 443   | 4649  |       |                      |
| Birds/km coast covered |      |       | 2.47 | 1.89  | 1.41 | 0.44  | 0.81 | 0.91  | 1.48 | 1.11  | 0.58 | 1.68  | 5.57 | 1.82  |       |       | 1.70                 |

TABLE 2 - Seabirds of which 1 to 15 specimens were found in 1996

| Species/subspecies               | No. Found | Coast(s)                           | Month(s)                                       |
|----------------------------------|-----------|------------------------------------|--|
| <i>Diomedea</i> spp.**           | 6         | AW (2), NW (2), EC,OI              | Jan, Jul (2), Aug, Oct, Dec                    |
| <i>D. melanophrys</i>            | 2         | NW (2)                             | Apr, Sep                                       |
| <i>D. exulans</i>                | 5         | NW (2), OI, SD (2)                 | Feb, Aug, Sep, Nov, Dec                        |
| <i>D. e. epomophora</i>          | 2         | AW, NW                             | Jul, Oct                                       |
| <i>D. cauta</i> subspp.          | 1         | WD                                 | Oct  |
| <i>D. cauta eremita</i>          | 1         | OI                                 | Jul  |
| <i>D. chrysostoma</i>            | 8         | AW (4), NW (4)                     | Jun (2), Aug, Sep (2), Oct, Nov, Dec           |
| <i>Phoebastria palpebrata</i>    | 7         | AW, NW (5), SD                     | Jun (3), Sep (3), Oct                          |
| <i>Puffinus</i> spp.**           | 11        | AW (8), NW, EC, WA                 | Jan, Feb, Jun, Oct (3), Nov (5)                |
| <i>P. gavia/huttoni</i>          | 6         | NC (3), WW (3)                     | Jan, Apr, Nov, Dec (3)                         |
| <i>Procellaria</i> spp.**        | 1         | SD                                 | Nov  |
| <i>P. cinerea</i>                | 2         | OI, WW                             | Aug, Nov                                       |
| <i>P. parkinsoni</i>             | 5         | AE, NE (3), NW                     | Jan, Feb (2), Mar, Nov                         |
| <i>P. aequinoctialis</i>         | 1         | TA                                 | Nov  |
| <i>Lugensa brevirostris</i>      | 4         | AW, NW (2), SD                     | Aug (2), Oct, Dec                              |
| <i>Fulmarus glacialisoides</i>   | 7         | AW, NE, SD (4), WW                 | Oct, Nov (4), Dec (2)                          |
| <i>Macronectes</i> spp.**        | 11        | AW, NW (7), EC, OI, TA             | Jan (2), Jun, Jul (3), Aug (2), Sep (2), Oct   |
| <i>Macronectes giganteus</i>     | 1         | AW                                 | Jul  |
| <i>M. halli</i>                  | 5         | NW (4), OI                         | May, Jun (3), Aug                              |
| <i>Pachyptila crassirostris</i>  | 1         | AW                                 | Nov  |
| <i>P. belcheri</i>               | 9         | AW (4), NW (4), WW                 | Jan, Feb (2), Jun, Jul (2), Sep, Oct, Nov      |
| <i>P. desolata</i>               | 9         | AW (6), NW, EC, TA                 | Jun (4), Jul (2), Aug (2), Nov                 |
| <i>Halobaena caerulea</i>        | 5         | AW (2), NW, SD, TA                 | Aug (3), Oct, Nov                              |
| <i>Pterodroma</i> spp.**         | 2         | AW, WW                             | Feb, Jul                                       |
| <i>P. leucoptera caledonica</i>  | 1         | NE                                 | Jan  |
| <i>P. cookii</i>                 | 10        | AW (3), NE (4), NW (2), SD         | Mar (4), Apr, Oct, Nov (3), Dec                |
| <i>P. nigripennis</i>            | 1         | TA                                 | Feb  |
| <i>Megadyptes antipodes</i>      | 5         | OT (3), SD (2)                     | Mar, Oct, Dec (3)                              |
| <i>Eudyptes pachyrhynchus</i>    | 2         | Sd (2)                             | Mar, Dec                                       |
| <i>Phalacrocorax</i> spp.**      | 1         | AW                                 | Jun  |
| <i>P. carbo</i>                  | 11        | EC (2), NC, WA, WS (4), WW (3)     | Jan (3), Feb, Apr, May, Jun, Aug, Nov (2), Dec |
| <i>P. sulcirostris</i>           | 2         | AW, NE                             | May, Jun                                       |
| <i>P. melanoleucos</i>           | 12        | AW, Ne, EC (3), OT (3), WD, WW (3) | Jan, Feb, Mar (3), Apr, Oct, Nov (4), Dec      |
| <i>Leucocarbo chalconotus</i>    | 5         | OT (2), SD (3)                     | Feb (2), May, Jun, Aug                         |
| <i>L. onslowi</i>                | 5         | OI (5)                             | Jan (3), Feb, Oct                              |
| <i>Stictocarbo featherstoni</i>  | 7         | OI (7)                             | Feb, May (2), Jul, Oct, Dec (2)                |
| <i>Catharacta skua lonnbergi</i> | 1         | NW                                 | Mar  |
| <i>Stercorarius</i> spp.**       | 1         | NW                                 | Nov  |
| <i>S. parasiticus</i>            | 1         | AW                                 | Dec  |
| <i>S. longicaudus</i>            | 1         | AW                                 | Dec  |
| <i>Sterna caspia</i>             | 3         | AW (2), NW                         | Jan, Feb (2)                                   |
| Total                            | 181       |                                    |  |

\*\* species or subspecies not identified by the patroller

An Arctic Skua (*Stercorarius parasiticus*) was found on at Tupurangi Beach, Pitt Island (OI) on 21 January (the second record from Outlying Islands coastal section) and the 35th record for the Beach Patrol Scheme. The most Arctic Skuas found dead on New Zealand beaches in any year is three. A Long-tailed Skua (*Stercorarius longicaudus*) was found on Raglan Beach (AW) on 25 December; this is the 51st record for the Beach Patrol Scheme. The most Long-tailed Skuas reported in any

previous year was 36 birds in 1983 (this was an exceptional total; in other years there have been 0-2 found).

Patrollers found two Southern Royal Albatrosses (*Diomedea epomophora epomophora*) dead on beaches. One was found on Ninety Mile Beach (NW) on 14 July, the other was found on Ruapuke Beach (AW) on 18 October.

Apart from seabirds, there were several rare landbirds washed ashore on beaches in 1996. Two Channel-billed Cuckoos (*Scythrops novaehollandiae*) were found; these were the third and fifth records from New Zealand (Tennyson & Brackenbury 1998). Two Spine-tailed Swifts (*Hirundapus caudacutus*) were also found; one on Taharoa Beach (TA) on 22 November and another on Dargaville Beach (NW) on 7 December. The age and condition of these four vagrants suggest they were carried across the Tasman Sea during storm events in mid-October and mid-November 1996. The first storm crossed from Australia to New Zealand on 12-13 October and spread severe gale-force winds over the North Island west coast. On 19 November, winds of 130 km/hr hit the lower North Island. MetService forecasters were reported as saying that this was the largest storm on the planet on that day and was close to hurricane force at times (The Evening Post, 20 November 1996).

### **Wrecks of seabirds**

A moderate wreck of Sooty Shearwaters (*Puffinus griseus*) occurred in November and December. Patrollers picked up 922 birds, mainly from Northland West, Auckland West and Taranaki beaches. Other species that wrecked in moderate numbers in November 1996 were 126 Buller's Shearwaters (*Puffinus bulleri*), 182 Fairy Prions (*Pachyptila turtur*) and 95 Australasian Gannets (*Morus serrator*). These birds contributed to the mean November recovery rate of 5.57 birds per 100 km of beach (Table 1). The November storm reported above might have contributed to this seabird wreck on North Island beaches.

### **Higher than normal recovery rates of seabirds in 1996**

Nine species were recovered in 1996 at annual rates much higher than normal: Pitt Island Shag (*Stictocarbo featherstoni*), Chatham Island Shag (*Leucocarbo onslowi*), Buller's Mollymawk (*Diomedea bulleri*), Black-billed Gull (*Larus bulleri*), Little Shag (*Phalacrocorax melanoleucos*), Flesh-footed Shearwater (*Puffinus carneipes*), Australasian Gannet, Buller's Shearwater and Mottled Petrel (*Pterodroma inexpectata*).

Seven Pitt Island Shags and five Chatham Island Shags were found on Chatham Island beaches (OI) in 1996. This is the highest annual total of Pitt Island Shags recorded since the start of the Beach Patrol Scheme. The five Chatham Island Shags equals the highest total recorded in 1976. Greater than usual numbers of these species was the result of the first regular beach patrols carried out on the Chatham Islands by OSNZ members; these patrols were co-ordinated by Mike Bell.

TABLE 3 - Coastal distribution of dead seabirds more commonly found in 1996

| Species/subspecies            | Coast |    |      |     |    |     |     |    |    |    |    |    |    |    | Total no. of Birds |     |     |    |      |
|-------------------------------|-------|----|------|-----|----|-----|-----|----|----|----|----|----|----|----|--------------------|-----|-----|----|------|
|                               | AW    | AE | NW   | NE  | BP | TA  | WW  | EC | WA | WS | NC | WD | CN | CS |                    | OT  | SD  | OI | FD   |
| <i>Diomedea cauta steadi</i>  | 4     | 0  | 7    | 0   | 0  | 0   | 4   | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0                  | 2   | 0   | 0  | 17   |
| <i>D. bulleri</i>             | 1     | 0  | 5    | 0   | 0  | 0   | 1   | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0                  | 32  | 5   | 0  | 44   |
| <i>Puffinus carneipes</i>     | 3     | 10 | 5    | 136 | 1  | 1   | 2   | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0                  | 0   | 0   | 0  | 158  |
| <i>P. bulleri</i>             | 83    | 1  | 63   | 25  | 0  | 30  | 39  | 2  | 0  | 0  | 0  | 0  | 0  | 0  | 0                  | 2   | 2   | 0  | 247  |
| <i>P. griseus</i>             | 357   | 25 | 497  | 28  | 0  | 42  | 41  | 2  | 2  | 1  | 0  | 0  | 0  | 0  | 2                  | 82  | 47  | 0  | 1126 |
| <i>P. tenuirostris</i>        | 23    | 0  | 26   | 4   | 1  | 3   | 7   | 3  | 1  | 0  | 0  | 0  | 0  | 0  | 0                  | 11  | 0   | 0  | 79   |
| <i>P. gavia</i>               | 82    | 5  | 282  | 93  | 2  | 13  | 16  | 0  | 1  | 0  | 2  | 0  | 0  | 0  | 0                  | 0   | 0   | 0  | 496  |
| <i>P. huttoni</i>             | 15    | 0  | 0    | 4   | 0  | 0   | 1   | 1  | 0  | 0  | 1  | 0  | 3  | 0  | 1                  | 1   | 0   | 0  | 27   |
| <i>P. assimilis</i>           | 6     | 0  | 16   | 24  | 1  | 0   | 1   | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0                  | 0   | 0   | 0  | 48   |
| <i>Pelecanoides urinatrix</i> | 19    | 0  | 49   | 28  | 3  | 7   | 10  | 3  | 2  | 4  | 0  | 0  | 1  | 0  | 0                  | 18  | 38  | 0  | 182  |
| <i>Daption capense</i>        | 9     | 0  | 10   | 1   | 0  | 1   | 2   | 1  | 0  | 1  | 1  | 0  | 0  | 0  | 0                  | 4   | 0   | 0  | 30   |
| <i>Pachyptila spp.**</i>      | 29    | 0  | 19   | 4   | 0  | 12  | 89  | 0  | 1  | 0  | 3  | 0  | 1  | 0  | 0                  | 1   | 19  | 0  | 178  |
| <i>P. turtur</i>              | 138   | 2  | 131  | 13  | 0  | 29  | 152 | 0  | 5  | 3  | 0  | 0  | 0  | 0  | 0                  | 22  | 2   | 0  | 497  |
| <i>P. salvini</i>             | 9     | 0  | 10   | 0   | 0  | 0   | 0   | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0                  | 1   | 2   | 0  | 22   |
| <i>P. vittata</i>             | 8     | 0  | 3    | 0   | 0  | 0   | 3   | 0  | 0  | 0  | 0  | 0  | 1  | 0  | 0                  | 21  | 2   | 0  | 38   |
| <i>Pterodroma inexpectata</i> | 8     | 0  | 9    | 0   | 0  | 5   | 3   | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0                  | 17  | 0   | 0  | 42   |
| <i>P. macroptera</i>          | 5     | 0  | 11   | 19  | 4  | 0   | 0   | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0                  | 0   | 0   | 0  | 39   |
| <i>P. lessonii</i>            | 10    | 0  | 10   | 0   | 0  | 2   | 0   | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0                  | 4   | 0   | 0  | 26   |
| <i>Pelagodroma marina</i>     | 4     | 0  | 6    | 4   | 0  | 1   | 0   | 0  | 1  | 0  | 0  | 0  | 0  | 0  | 0                  | 1   | 1   | 0  | 18   |
| <i>Eudyptula minor</i>        | 32    | 5  | 158  | 91  | 2  | 7   | 25  | 3  | 4  | 7  | 4  | 1  | 1  | 0  | 5                  | 18  | 11  | 0  | 374  |
| <i>Morus serrator</i>         | 74    | 2  | 161  | 44  | 3  | 16  | 10  | 4  | 1  | 0  | 5  | 0  | 0  | 0  | 1                  | 0   | 0   | 0  | 321  |
| <i>Phalacrocorax varius</i>   | 6     | 1  | 5    | 12  | 0  | 0   | 1   | 0  | 0  | 0  | 1  | 0  | 0  | 0  | 0                  | 0   | 0   | 0  | 26   |
| <i>Stictocarbo punctatus</i>  | 2     | 0  | 0    | 0   | 0  | 0   | 1   | 0  | 0  | 3  | 9  | 0  | 6  | 0  | 5                  | 7   | 0   | 0  | 33   |
| <i>Larus dominicanus</i>      | 22    | 2  | 56   | 19  | 1  | 2   | 91  | 34 | 0  | 30 | 7  | 0  | 0  | 0  | 7                  | 48  | 5   | 0  | 324  |
| <i>L. novaehollandiae</i>     | 1     | 1  | 0    | 9   | 0  | 0   | 0   | 3  | 0  | 2  | 1  | 0  | 0  | 0  | 7                  | 1   | 0   | 0  | 25   |
| <i>L. bulleri</i>             | 0     | 0  | 0    | 0   | 0  | 0   | 0   | 3  | 0  | 0  | 0  | 0  | 0  | 0  | 0                  | 27  | 0   | 0  | 30   |
| <i>Sterna striata</i>         | 14    | 0  | 1    | 0   | 0  | 4   | 1   | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0                  | 0   | 1   | 0  | 21   |
| Total                         | 964   | 54 | 1540 | 558 | 18 | 175 | 500 | 59 | 18 | 51 | 34 | 1  | 13 | 0  | 28                 | 320 | 135 | 0  | 4468 |

\*\* species not identified by the patroller

An unusually large number of Buller's Mollymawks were found in 1996. The 44 birds found is the second highest annual total, exceeded only by the 54 birds recovered in 1985. The average recovery rate of 1.62 birds per 100 km of beach covered is the highest annual recovery rate since the start of the Beach Patrol Scheme. Most of the Buller's Mollymawks were juvenile birds that came ashore on Southland beaches in September. Four of the birds found on Chatham Island beaches (OI) were considered to be Northern Buller's Mollymawks (*Diomedea bulleri platei*); an adult in May and three freshly dead juveniles found on 7 July.

Black-billed Gulls were picked up at an average recovery rate of 1.11 birds per 100 km of beach. This is the highest annual recovery rate since the start of the Beach Patrol Scheme. Thirty Black-billed Gulls were found on beaches in 1996, mostly in Southland. The only higher annual totals were the 44 birds found in 1978 and the 35 birds found in 1979. Eight adult Black-billed Gulls were found dead on Oreti Beach (SD) on 20 July. The previous ten days had freezing temperatures and snow cover. This apparently caused a large mortality of Black-billed Gulls in Southland and possibly some of the specimens found on beaches died as a result of this cold weather (L. Esler pers. comm.).

Twelve Little Shags were found dead on beaches in 1996. This is the third highest annual total after the 19 birds reported in 1981 and 14 birds found in 1992. The average annual recovery rate in 1996 was 0.44 birds per 100 km of beach covered; this is the second highest rate, exceeded only by the 0.58 birds per 100 km of beach recorded in 1981.

Flesh-footed Shearwaters washed ashore in larger numbers than usual in 1996; the 158 birds found is the seventh highest annual total recorded. The species came ashore at an average rate of 5.83 birds per 100 km patrolled; this is the second highest annual rate recorded. The previous highest annual rate was 6.79 birds per 100 km of beach in 1974.

Australasian Gannets came ashore at an average annual rate of 11.85 birds per 100 km of beach in 1996; this is the third highest rate recorded. Only the 22.24 birds per 100 km in 1995 and the 12.08 birds per 100 km in 1994 were higher annual recovery rates. This is the third consecutive year that significant numbers of Australasian gannets have wrecked on beaches. The annual total of 321 birds was the seventh highest annual total for this species. All seven highest totals have occurred since 1984. The population of Australasian Gannets in New Zealand more than doubled from 1946 to 1980 (Heather & Robertson 1996) and the beach patrol records suggest this expansion is continuing.

Buller's Shearwaters were found at an average rate of 9.1 per 100 km of beach covered. This is the fourth highest recovery rate since the start of the Beach Patrol Scheme. There were 247 birds found, the seventh highest annual total for this species. High numbers of Buller's Shearwaters were also found in 1995 (Taylor 1997).

TABLE 4 - Monthly distribution of dead seabirds more commonly found in 1996

| Species/subspecies            |     |     |     |     |     |     |     |     |      |     |      |     | Total           |
|-------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|------|-----|-----------------|
|                               | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sept | Oct | Nov  | Dec | no. of<br>Birds |
| <i>Diomedea cauta steadi</i>  | 1   | 0   | 1   | 5   | 1   | 4   | 0   | 1   | 1    | 1   | 2    | 0   | 17              |
| <i>D. bulleri</i>             | 0   | 0   | 0   | 1   | 2   | 1   | 8   | 1   | 27   | 0   | 3    | 1   | 44              |
| <i>Puffinus carneipes</i>     | 37  | 42  | 39  | 6   | 3   | 14  | 0   | 0   | 1    | 2   | 9    | 5   | 158             |
| <i>P. bulleri</i>             | 5   | 28  | 7   | 7   | 1   | 6   | 3   | 0   | 0    | 29  | 126  | 35  | 247             |
| <i>P. griseus</i>             | 49  | 24  | 24  | 10  | 70  | 9   | 5   | 0   | 0    | 13  | 772  | 150 | 1126            |
| <i>P. tenuirostris</i>        | 15  | 6   | 1   | 0   | 20  | 4   | 1   | 0   | 0    | 0   | 18   | 14  | 79              |
| <i>P. gavia</i>               | 25  | 81  | 31  | 8   | 9   | 25  | 101 | 63  | 11   | 75  | 51   | 16  | 496             |
| <i>P. huttoni</i>             | 2   | 5   | 2   | 1   | 1   | 0   | 1   | 0   | 2    | 3   | 10   | 0   | 27              |
| <i>P. assimilis</i>           | 15  | 8   | 3   | 0   | 0   | 5   | 0   | 0   | 0    | 7   | 5    | 5   | 48              |
| <i>Pelecanoides urinatrix</i> | 10  | 9   | 1   | 2   | 2   | 20  | 61  | 18  | 11   | 19  | 16   | 13  | 182             |
| <i>Daption capense</i>        | 1   | 0   | 0   | 1   | 1   | 2   | 2   | 8   | 2    | 4   | 5    | 4   | 30              |
| <i>Pachyptila</i> spp.**      | 28  | 59  | 2   | 0   | 2   | 11  | 5   | 6   | 7    | 10  | 27   | 21  | 178             |
| <i>P. turtur</i>              | 30  | 91  | 1   | 4   | 3   | 39  | 27  | 29  | 343  | 39  | 182  | 18  | 497             |
| <i>P. salvini</i>             | 0   | 0   | 0   | 3   | 4   | 2   | 2   | 2   | 0    | 8   | 1    | 0   | 22              |
| <i>P. vittata</i>             | 1   | 2   | 0   | 1   | 0   | 0   | 0   | 2   | 5    | 9   | 14   | 4   | 38              |
| <i>Pterodroma inexpectata</i> | 1   | 2   | 3   | 0   | 3   | 0   | 0   | 1   | 0    | 1   | 15   | 16  | 42              |
| <i>P. macroptera</i>          | 15  | 3   | 1   | 1   | 1   | 3   | 1   | 4   | 1    | 4   | 2    | 3   | 39              |
| <i>P. lessonii</i>            | 0   | 2   | 0   | 0   | 1   | 3   | 0   | 1   | 3    | 7   | 4    | 5   | 26              |
| <i>Pelagodroma marina</i>     | 0   | 3   | 0   | 3   | 0   | 1   | 3   | 0   | 0    | 2   | 3    | 3   | 18              |
| <i>Eudiptula minor</i>        | 33  | 50  | 30  | 12  | 7   | 6   | 50  | 87  | 25   | 14  | 31   | 29  | 374             |
| <i>Morus serrator</i>         | 13  | 32  | 20  | 8   | 5   | 12  | 24  | 26  | 20   | 22  | 95   | 44  | 321             |
| <i>Phalacrocorax varius</i>   | 5   | 4   | 1   | 4   | 1   | 2   | 0   | 1   | 1    | 1   | 2    | 4   | 26              |
| <i>Stictocarbo punctatus</i>  | 1   | 2   | 0   | 1   | 4   | 0   | 7   | 1   | 1    | 4   | 5    | 7   | 33              |
| <i>Larus dominicanus</i>      | 62  | 49  | 20  | 7   | 11  | 20  | 18  | 17  | 21   | 18  | 60   | 21  | 324             |
| <i>L. novaehollandiae</i>     | 5   | 2   | 1   | 0   | 3   | 0   | 1   | 1   | 4    | 0   | 4    | 4   | 25              |
| <i>L. bulleri</i>             | 1   | 3   | 1   | 2   | 0   | 1   | 8   | 5   | 0    | 5   | 4    | 0   | 30              |
| <i>Sterna striata</i>         | 1   | 2   | 1   | 0   | 6   | 0   | 0   | 0   | 0    | 1   | 8    | 2   | 21              |
| Total                         | 356 | 509 | 190 | 87  | 161 | 190 | 328 | 274 | 177  | 298 | 1474 | 424 | 4468            |

\*\* species not identified by the patroller



There were 42 Mottled Petrels found on beaches in 1996 at an average rate of 1.55 birds per 100 km covered. This is the fourth highest recovery rate and also the seventh highest number found. Large numbers of Mottled Petrels were also found in 1995 (Taylor 1997).

### Lower than normal recovery rates of seabirds in 1996

Eight species were recovered at rates much lower than normal in 1996: Red-billed Gull (*Larus novaehollandiae scopulinus*), White-fronted Tern (*Sterna striata*), Spotted Shag (*Stictocarbo punctatus*), Thin-billed Prion (*Pachyptila belcheri*), Blue Petrel (*Halobaena caerulea*), Blue Penguin (*Eudyptula minor*), Short-tailed Shearwater (*Puffinus tenuirostris*) and Southern Black-backed Gull (*Larus dominicanus*). Five of these species are resident New Zealand species that forage over inshore waters, one is a regular visitor from Australian breeding colonies and two are subantarctic species that normally feed south of New Zealand. Conditions in 1996 appear to have been favourable for these species.

Very few Red-billed Gulls washed up dead on beaches in 1996. Only 25 birds were found by beach patrollers at an average recovery rate of 0.92 birds per 100 km of beach covered. This is the lowest number found since 1965 and is the lowest annual recovery rate since the start of the Beach Patrol Scheme. There is no clear reason why numbers of Red-billed Gulls found dead on beaches are dropping. It continues a trend started in the early 1990s. Possibly it reflects a lack of recent beach patrolling on Canterbury North and Canterbury South beaches.

Patrollers recovered 21 White-fronted Terns in 1996. This is the lowest number found since 1969 when only 15 birds were picked up from beaches. The annual recovery rate in 1996 was 0.78 birds per 100 km of beach. This is the third equal lowest rate since 1960. Only the 0.25 birds per 100 km in 1960 and 0.35 birds per 100 km in 1965 were lower annual recovery rates.

Only 33 Spotted Shags were picked up beach patrollers in 1996. This is the lowest total since 1970 when 27 were recorded dead on beaches. The low numbers recorded possibly reflects the lack of recent beach patrolling on Canterbury North and Canterbury South beaches. Large colonies of Spotted Shags occur on Banks Peninsula and a census of this population in 1996 showed that numbers had more than doubled since 1960 (Doherty & Brager 1997).

Beach patrollers recovered nine Thin-billed Prions in 1996. This is the lowest number found since 1971, when only seven were recovered. The annual recovery rate of 0.33 birds per 100 km was also the third lowest recorded in the Beach Patrol Scheme. Only the 0.30 birds per 100 km recorded in 1963 and 1971 were lower annual recovery rates.

Only five Blue Petrels were found in 1996. This is the lowest number found since 1977 when the same number of birds was recorded. The numbers of Blue Petrels washed ashore annually is quite variable. Normally between 10 and 100 are expected, but in 1984 there were 881 Blue Petrels found (Powlesland 1986).

Beach patrollers reported 374 Blue Penguins in 1996. This is the lowest annual total found since 1977, when only 261 birds were picked up.

There were 79 Short-tailed Shearwaters found in 1996; this is the lowest number found since 1980 (when only 53 were found). Other years when low numbers were recovered by patrollers were 1980, 1990 and 1995.

Beach patrollers picked up 324 Southern Black-backed Gulls in 1996. This is the lowest annual total since 1980, when only 279 birds were found. Usually between 400 and 600 Southern Black-backed Gulls are picked up each year. There has been extensive culling of Southern Black-backed Gull populations in the 1990s, especially in the Wellington region and Bay of Plenty; this may have contributed to lower numbers being found.

### **Band recoveries**

Six banded seabirds were noted on beach patrol cards.

R. Cotter found two banded Southern Black-backed Gulls dead on beaches. One was picked up between Makara and Pipinui Point (WW) on 23 January. This bird was banded as a chick on Somes Island (WS) in December 1988. The other gull was picked up south of Eastbourne in Wellington Harbour (WS) on 30 December. This bird was also banded as a chick on Somes Island but in December 1990.

Beach Patrollers recorded two dead Blue Penguins with bands. C.Hall (per Jean Luke) found one of these penguins on Waikanae Beach (WW) on 13 May. This bird had been banded as an adult male by M. & D. Bell at Port Dorset (Wellington Harbour) (WS) in September 1992. S. Truman found the other banded penguin on Somes Island (WS) on 23 November. This bird had been banded as an adult female on Somes Island (WS) by R. Cossee in October 1985.

R. Cotter picked up a banded Red-billed Gull on Petone Beach (WS) on 27 March. This gull had been banded as an adult male at Kaikoura Peninsula (CN) in October 1986.

M. Smith found a banded Australasian Gannet on 13 April on Dargaville Beach (NW). The Gannet was banded as a chick on White Island (BP) in January 1992 by V. Davis.

### **Causes of mortality**

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

Three dead seabirds were found that had been caught on fishing lines. In June, one juvenile Southern Black-backed Gull was picked up on Waitarere Beach (WW) with an embedded fish hook and fishing line tangled around its body. One Black Shag found dead on Petone Beach (WS) in November had been caught on a fishing

line. In May, a sick adult Red-billed Gull was found on East Clive Beach (EC). The bird had a hook through its bill and line attached; the bird died soon after being picked up.

Five seabirds were found dead on beaches after becoming entangled in nets or plastic debris. A Sooty Shearwater picked up by patrollers on Clifton Beach (EC) in February was reported as entangled in a small remnant of string fishing net. Another dead Sooty Shearwater found on Ocean Beach (WA) in April had its wing tightly encased in a black plastic ring and all the primaries and secondaries were missing. Two Fluttering Shearwaters and one Blue Penguin were entangled in a section of fishing net which washed ashore on Sunset Beach (AW) in August.

Other causes of mortality include poisoning and shooting of seabirds. Nine Southern Black-backed Gulls washed up on Pukerua Bay (WW) on 9 November were considered to be victims of a gull poisoning campaign on nearby Mana Island or possibly died during the rat eradication campaign on nearby Kapiti Island. Another 17 gulls, possibly poisoned, were found on Kapiti Island beaches on 30 November. Three juvenile Black-billed Gulls found on Oreti Beach (SD) on 16 February had been shot.

No oiled seabirds were reported dead on beaches in 1996.

### Miscellaneous birds

A total of 165 birds other than seabirds was found on beaches in 1996. There were 32 species recorded: 40 Australian Magpies (*Gymnorhina tibicen*), 14 Black Swans (*Cygnus atratus*), 13 Mallards (*Anas platyrhynchos*), 12 Paradise Shelducks (*Tadorna variegata*), 11 Blackbirds (*Turdus merula*), seven South Island Pied Oystercatchers (*Haematopus ostralegus finschi*), six Starlings (*Sturnus vulgaris*), five Rock Pigeons (*Columba livia*), four each of White-faced Heron (*Ardea novaehollandiae*), Australasian Harrier (*Circus approximans*), Turkey (*Meleagris gallopavo*) and Tui (*Prosthemadera novaeseelandiae*), three each of Pukeko (*Porphyrio porphyrio melanotus*), Variable Oystercatcher (*Haematopus unicolor*) and Common Myna (*Acridotheres tristis*), two each of Domestic Geese (*Anser* sp.), Grey Ducks (*Anas superciliosa*), New Zealand Shovelers (*Anas rhynchotis variegata*), Australasian Pied Stilts (*Himantopus himantopus leucocephalus*) Spur-winged Plovers (*Vanellus miles novaehollandiae*), Eastern Bar-tailed Godwits (*Limosa lapponica baueri*), New Zealand Pigeons (*Hemiphaga novaeseelandiae*), Channel-billed Cuckoos (*Scythrops novaehollandiae*), Spine-tailed Swifts (*Hirundapus caudacutus*), Yellowhammers (*Emberiza citrinella*) and Goldfinches (*Carduelis carduelis*), and one each of Australasian Bittern (*Botaurus poiciloptilus*), Mallard/Grey Duck (*Anas* sp.), New Zealand Dotterel (*Charadrius obscurus*), Wrybill (*Anarhynchus frontalis*), Morepork (*Ninox novaeseelandiae*), New Zealand Kingfisher (*Halcyon sancta vagans*) and House Sparrow (*Passer domesticus*). In addition, there were two unidentified ducks and one unidentified oystercatcher (*Haematopus* sp.).

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