

RESULTS OF PATROLS FOR BEACHED SEABIRDS CONDUCTED IN SOUTHERN AFRICA IN 1982

G. AVERY

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ABSTRACT

During 1982 regular patrols for beached seabirds by the African Seabird Group were conducted in nine areas of the Cape Province, South Africa. A total of 1 338 seabirds of 33 species was found over a total distance of 909,4 km, an average of 1,47 birds km⁻¹. The most abundant species was the Cape Cormorant *Phalacrocorax capensis* (833 specimens, 62 %). The rate at which seabirds are beached is discussed. Information on seasonal mortality of some abundant seabird species is presented. Two specimens of Lightmantled Sooty Albatross *Phoebastria palpebrata* and single specimens of Kerguelen Petrel *Pterodroma brevirostris* and Fairy Prion *Pachyptila turtur* were recorded. Three ringed birds were found. Thirtyseven nonseabirds were found.

INTRODUCTION

This is the sixth annual report on patrols for beached seabirds conducted by the African Seabird Group since 1977 (Cooper 1978, Avery 1979, 1980, 1981, 1982). Preliminary analysis of the survey data is producing information on seasonal mortality for a number of species and age classes.

RESULTS

During 1982 regular monthly surveys were restricted to nine localities in the Cape Province (Fig. 1, Table 1). New surveys were initiated by A. Berruti (Lambert's Bay) and by S. Braine and colleagues (Skeleton Coast Park, SWA/Namibia). Since the latter survey only started towards the end of the year it has been included under the heading 'various' in Table 2. Data for one year were collected from Glencairn beach near Fish Hoek by T.B. Oatley. The Fish Hoek survey was terminated at the end of 1982.

A total of 1 338 birds of 33 species was found over a total of 909,4 km patrolled. This represents a density of 1,47 seabirds km⁻¹, the highest recorded so far. This figure is clearly influenced by the Lambert's Bay survey (28,64 seabirds km⁻¹) which takes place in the vicinity of Bird Island on which many seabirds breed and roost (Rand 1963). If, however, this section is excluded the density is 1,14 which is consistent with previous years. A total of 185 km was covered on nonregular patrols in the southern and southwestern Cape and in SWA/Namibia.

The most abundant seabird species found was the Cape Cormorant *Phalacrocorax capensis* (833 specimens, 62 %) followed by the Kelp Gull *Larus dominicanus* (103 specimens, 8 %), Jackass

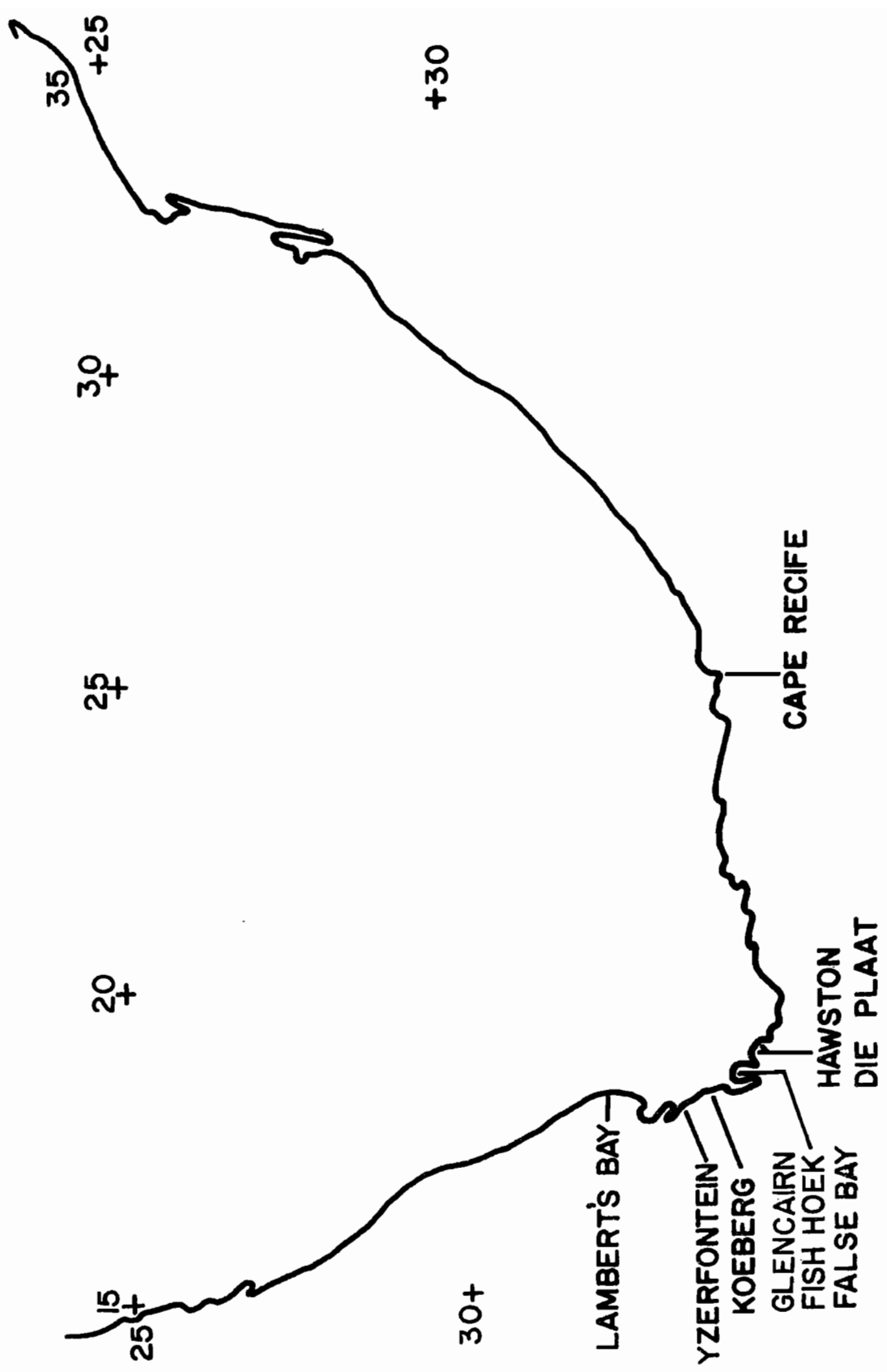


Figure 1

Localities of regular monthly patrols for beached seabirds in

TABLE 1

PATROLS FOR BEACHED SEABIRDS, 1982 : AREAS COVERED

| Area | Length (km) | Distance covered (km) | No. seabirds | No/km | Transport | Organizer |
|---------------|-------------|-----------------------|--------------|-------|--------------|------------------------------|
| Lambert's Bay | 1 | 11 | 315 | 28,64 | foot | A. Berruti |
| Yzerfontein | 15 | 180 | 370 | 2,06 | vehicle | G. Avery |
| Koeberg | 7 | 84 | 74 | 0,88 | foot | G. Avery |
| Glencairn** | 0,5 | 15 | 15 | 1,00 | foot | T.B. Oatley |
| Fish Hoek | 1,2 | 14,4 | 22 | 1,53 | foot | T.B. Oatley |
| False Bay | 20 | 240 | 277 | 1,15 | foot | G. Avery |
| Hawston | 5 | 60 | 22 | 0,37 | foot | S.T. Baron |
| Die Plaat | 5 | 60 | 22 | 0,37 | foot | S.T. Baron |
| Cape Recife | 5 | 60 | 68 | 1,13 | foot | J.A. Spearpoint/ B. Every |
| Various | - | 185 | 153 | 0,83 | foot/vehicle | - |
| Total | - | 909,4 | 1 338 | 1,47 | - | - |

* excluding June

** Sometimes twice or more times per month

TABLE 2
PATROLS FOR BEACHED SEABIRDS, 1982 : SPECIES COMPOSITION

| Species | Lambert's Bay | Yzerfontein | Koeberg | Glencairn | Fish Hoek | False Bay | Hawston | Die Plaat | Cape Recife | Various | Total |
|---|---------------|-------------|---------|-----------|-----------|-----------|---------|-----------|-------------|---------|-------|
| Jackass Penguin <i>Spheniscus demersus</i> | 4 | 23 | 9 | 4 | 6 | 20 | 8 | 7 | 7 | 5 | 93 |
| Wandering Albatross <i>Diomedea exulans</i> | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Shy Albatross <i>D. cauta</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Blackbrowed Albatross <i>D. melanophris</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 |
| Yellownosed Albatross <i>D. chlororhynchos</i> | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 2 |
| Lightmantled Sooty Albatross <i>Phoebastria palpebrata</i> | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Albatross indet. Diomedeidae indet. | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 |
| Giant petrels <i>Macronectes</i> spp. | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 |
| Pintado Petrel <i>Daption capense</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 3 |

| | | | | | | | | | | | | | | | | | |
|---|-----|-----|----|---|----|-----|---|----|---|---|----|----|----|----|----|-----|-----|
| Softplumaged Petrel <i>P. mollis</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Kerguelen Petrel <i>P. brevirostris</i> | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Antarctic Prion <i>Pachyptila vittata</i> <i>desolata</i> | 1 | 10 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| Thinbilled Prion <i>P. belcheri</i> | 0 | 19 | 2 | 0 | 1 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| Fairy Prion <i>P. turtur</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Prion indet. <i>Pachyptila</i> indet. | 0 | 18 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| Whitechinned Petrel <i>Procellaria aequinoctialis</i> | 0 | 0 | 1 | 0 | 0 | 0 | 4 | 0 | 0 | 1 | 16 | 16 | 16 | 16 | 16 | 16 | 38 |
| Cory's Shearwater <i>Calonectris diomedea</i> | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Sooty Shearwater <i>Puffinus griseus</i> | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 11 |
| European Stormpetrel <i>Hydrobates pelagicus</i> | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Wilson's Stormpetrel <i>Oceanites oceanicus</i> | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 5 |
| Cape Gannet <i>Sula capensis</i> | 5 | 21 | 0 | 1 | 0 | 25 | 1 | 25 | 1 | 2 | 10 | 25 | 25 | 10 | 25 | 90 | 90 |
| Whitebreasted Cormorant <i>Phalacrocorax carbo</i> | 0 | 0 | 0 | 0 | 1 | 2 | 2 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 5 |
| Cape Cormorant <i>P. capensis</i> | 274 | 205 | 26 | 5 | 11 | 203 | 8 | 8 | 8 | 8 | 6 | 87 | 87 | 6 | 87 | 833 | 833 |

Penguin *Spheniscus demersus* (93 specimens, 7 %), Cape Gannet *Sula capensis* (90 specimens, 7 %), Whitechinned Petrel *Procellaria aequinoctialis* (37 specimens, 3 %) and Common Tern *Sterna hirundo* (31 specimens, 2 %). Six of the 33 species provided 89 % of the specimens found. Sooty Shearwaters *Puffinus griseus* which in the past formed between five and six percent of the total of seabirds recovered formed only 0,8 % (11 specimens) in 1982.

Remains of two Lightmantled Sooty Albatrosses *Phoebetria palpebrata* were found. The first was on 24 July on the Yzerfontein survey and the second was on 28 August on the Koeberg survey. Single specimens of Kerguelen Petrel *Pterodroma brevirostris* and Fairy Prion *Pachyptila turtur* specimens were recovered on 28 August from Yzerfontein and 14 October from Cape Recife respectively. High mortality of Kelp Gulls *Larus dominicanus* was recorded on the west coast. In addition an alive, but sick specimen of the nominate race of the Kelp Gull *L.d.dominicanus* recovered on 23 October from Yzerfontein provided the first specimen of this subspecies in Africa (Brooke *et al.* 1982). A wreck of Antarctic Prions *Pachyptila vittata desolata* and Thinbilled Prions *P. belcheri* occurred at Yzerfontein during July and August but did not extend to other patrol areas.

Patrols over the same stretch of coast in Saldanha Bay conducted by G.D. Underhill for 11 consecutive days (Table 3) provided data which illustrate the rate at which seabirds are washed ashore and the potential for further study in this direction. Total of 73 seabirds specimens of nine species and two specimens of two nonseabird species were recovered. A total of thirtyseven specimens (49,3 %) was recorded for the first patrol and clearly represents accumulation over a longer period prior to the survey. Birds recovered during each patrol were removed from the beach to avoid duplication. A small number of dried out specimens found on the second and third days clearly belonged to the earlier period and was included in the total for the first day (G.D. Underhill pers. comm.). The observer is experienced and the possibility that some birds beached earlier have been included in totals for subsequent days is considered to be limited. Totals after the first day can be taken as representing the daily accrual. It should be noted that Saldanha Bay has a high seabird population which uses the offshore islands for breeding and roosting (Rand 1963). The northern embayment in which the patrol was conducted is likely to receive carcasses driven by the prevailing southeasterly wind in summer. In addition the surface currents of Saldanha Bay driven both tidally and by the wind (Harris 1978) work to the same end. These data raise several questions. At what rate are carcasses washed up on the beaches? How do biological and physical processes at sea (Cox 1976) affect the rate at which carcasses actually reach the beach, and where? How do biological and physical processes on beaches affect the time a carcass remains visible or intact? To what extent do the data collected on monthly patrols represent the actual input (mortality) of carcasses? Clearly, information on these processes could be obtained by studies in areas with both large and small seabird populations where marked corpses could be released offshore and daily monitoring of beached birds in relation to environmental conditions could be undertaken. It would also be possible to determine how representative monthly patrols are of the total accrual of beached seabirds over a

TABLE 3

BIRDS FOUND ON A 3-KM STRECH OF SANDY BEACH BETWEEN THE SALDANHA BAY CARAVAN PARK AND THE IRON-ORE
 TERMINAL BOUNDARY FENCE, 14-24 MARCH 1982 BY G.D. UNDERHILL

| Species | Date in March 1982 | | | | | | | | | | | | | | Total |
|---------------------------------|--------------------|-----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|--|-------|
| | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Total | | | |
| <i>Spheniscus demersus</i> | 1 | 1 | 1* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | | |
| <i>Sula capensis</i> | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | | |
| <i>Phalacrocorax carbo</i> | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | | |
| <i>P. capensis</i> | 21 | 9 | 4 | 3 | 0 | 3 | 4 | 2 | 1 | 0 | 0 | 0 | 47 | | |
| <i>P. coronatus</i> | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | | |
| <i>Larus dominicanus</i> | 1 | 2 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 5 | | |
| <i>L. hartlaubii</i> | 2 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | | |
| <i>Sterna bergii</i> | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | | |
| <i>Threskiornis aethiopicus</i> | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | | |
| <i>Sturnus vulgaris</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | | |
| Totals | 37 | 14 | 7 | 3 | 1 | 3 | 5 | 4 | 1 | 0 | 0 | 0 | 75 | | |

*ringed

period of time.

Figure 2 illustrates the result of a Correspondence Analysis plot (Underhill 1983, Greenacre 1984) based on monthly data for all areas patrolled between 1977 and 1983. Months which lie close together on the plot tend to have similar species compositions. The position of the species in the plot is determined by the months in which it most frequently beached. Species are attracted away from the origin in the duration of months in which they are beached in above average numbers, and are repelled away from the origin in the opposite direction on months in which they are rarely or never beached. Species close to the origin tend to be beached throughout the year. At least three clear seasonal groups are evident: February to May; June to September; and October to December-January. It will be noted that mortality of different age classes does not necessarily coincide and that with species such as Cape Gannet, Cape Cormorant and possibly Kelp Gull, adult mortality coincides with breeding seasons (Mclachlan & Liversidge 1978). Strong seasonal mortality signal the arrival in southern African waters of migratory species such as Common Terns and Sabine's Gulls *Larus sabini*. Antarctic Prions and Thinbilled Prions which tend to be wrecked seasonally (Every 1980, Batchelor 1981, Bourne 1982) show a strong correspondence with July and August. Although numbers are very small, and therefore possibly misleading, Broadbilled Prion *P. v. vittata* corresponds more with October and Fairy Prion with September suggesting that at least two seasonal populations of prions occur along the southern African coast. Whitechinned Petrel mortality corresponds with September whereas Sooty Shearwaters, which are often wrecked (Cooper 1978, Avery 1979, 1980, 1981), correspond strongly with the period between February and April. Although the Correspondence Analysis examines frequencies and species' proportions from month to month it should be noted that mortality is often spread over a longer period than is indicated in Fig. 2. Graphical representation of annual mortality to illustrate this will be published elsewhere with detailed results.

Only three ringed birds were recovered (Table 4). A total of 37 nonseabirds was found, six of which were shorebirds (Table 5). Members of the Columbidae (pigeons and doves) were the most abundant (30 %)

DISCUSSION

Over a six-year period of patrols for beached seabirds, the overall density of birds has shown surprisingly little variation in spite of annual fluctuations in numbers of particular species. It is not surprising, however, that some localities, particularly those in the vicinity of breeding islands, yield far greater densities than areas farther afield. Inclusion of the Lambert's Bay survey will make an important contribution to information regarding coastal seabird mortality and it should be possible to relate numbers to both the activities of the birds themselves and to environmental events.

Records of specimens of Lightmantled Sooty Albatrosses in South African waters (Cooper 1974) have been increased to four with

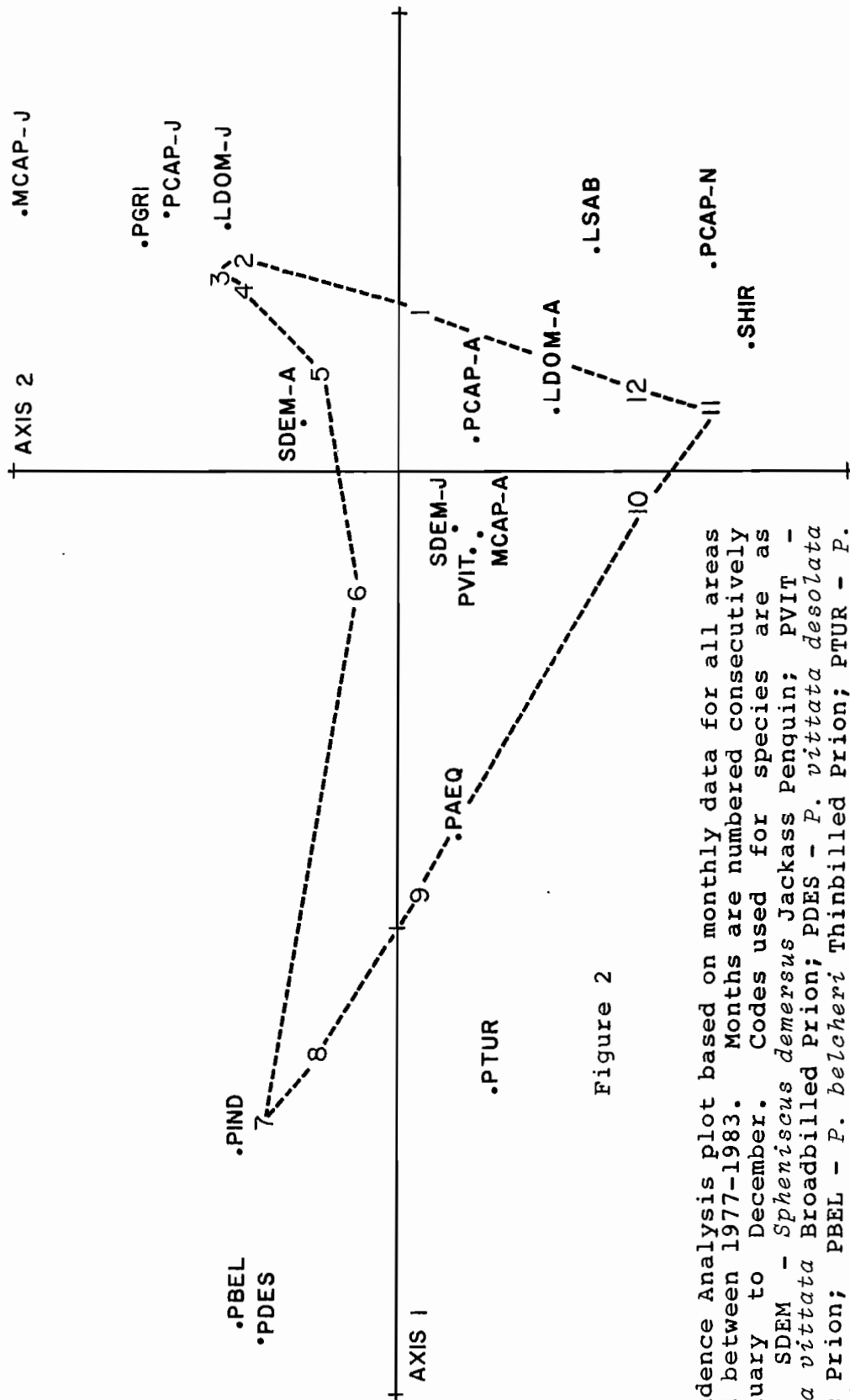


Figure 2

Correspondence Analysis plot based on monthly data for all areas patrolled between 1977-1983. Months are numbered consecutively from January to December. Codes used for species are as follows: SDEM - *Spheniscus demersus* Jackass Penguin; PVT - *Pachyptila vittata* Broadbilled Prion; PDES - *P. vittata desolata* Antarctic Prion; PBEL - *P. belcheri* Thinbilled Prion; PTUR - *P. turtur* Fairy Prion; PIND - *Pachyptila* indet.; PAEQ - *Procellaria aequinoctialis* Whitechinned Petrel; PGRI - *Puffinus griseus* Sooty Shearwater; SCAP - *Sula capensis* Cape Gannet; PCAP - *Phalacrocorax capensis* Cape Cormorant; LDOM - *Larus dominicanus* Kelp Gull; LSAB - *L. sabini* Sabine's Gull; SHIR - *Sterna hirundo* Common Tern. A = adult; J = juvenile (newly fledged); N = nestling.

TABLE 4
RECOVERIES OF RINGED BIRDS : 1982

| Species | Number | Ringling date | Recovery site | Date |
|--------------------------------|--------|--|--|-------------|
| Jackass Penguin | T6135 | Robben Island (SANCCOB Release) 20 May 1980 | West Coast, Churchaven Peninsula, Langebaan | 12 Jul 1982 |
| <i>Spheniscus demersus</i> | Z0142 | Marcus Island 3 Jul 1980 | Saldanha Bay | 16 Mar 1982 |
| Crowned Cormorant | 810118 | Dassen Island 27 Feb 1971 | Yzerfontein | 20 Feb 1982 |
| <i>Phalacrocorax coronatus</i> | | | | |

TABLE 5

NONSEABIRDS FOUND DURING BEACH PATROLS : 1982

| Species | Number |
|---|-----------|
| Ostrich <i>Struthio camelus</i> (chicks) | 2 |
| Cattle Egret <i>Bubulcus ibis</i> | 2 |
| Sacred Ibis <i>Threskiornis aethiopicus</i> | 1 |
| Egyptian Goose <i>Alopochen aegyptiacus</i> | 2 |
| Domestic Fowl <i>Gallus gallus</i> | 2 |
| Ludwig's Bustard <i>Neotis ludwigii</i> | 1 |
| African Black Oystercatcher <i>Haematopus moquini</i> | 2 |
| Turnstone <i>Arenaria interpres</i> | 2 |
| Whitefronted Sandplover <i>Charadrius marginatus</i> | 1 |
| Sanderling <i>Calidris alba</i> | 1 |
| Cape Dikkop <i>Burhinus capensis</i> | 1 |
| Rock Pigeon <i>Columba guinea</i> | 7 |
| Feral Pigeon <i>Columba livia</i> | 3 |
| Laughing Dove <i>Streptopelia senegalensis</i> | 1 |
| Cockatiel <i>Nymphicus hollandicus</i> | 1 |
| Alpine Swift <i>Apus melba</i> | 1 |
| European Starling <i>Sturnus vulgaris</i> | 3 |
| Redwinged Starling <i>Onychognathus morio</i> | 1 |
| Cape Sugarbird <i>Promerops cafer</i> | 1 |
| Cape Weaver <i>Ploceus capensis</i> | 1 |
| Cape Sparrow <i>Passer melanurus</i> | 1 |
| Total | 37 |

the recovery of a further two specimens on beach patrols. The recovery of a further Kerguelen Petrel raises the number of observations of this species to 16 and the number of specimens recovered to eight (Brooke & Avery 1981). These observations further attest to the periodic occurrence of the rarer Procellariiformes in South African waters (Cooper 1979, Avery 1981, Brooke & Avery 1981). Bourne (1982) and Powlesland (1983) report wrecks of numbers of immature and nonbreeding individuals of Kerguelen Petrels and Blue Petrels *Halobaena caerulea* on the coasts of New Zealand between August and October of 1981. Most of the birds were immature and appeared to be starving after being driven shoreward by southwesterly gales. This wreck corresponded closely with the seasonal occurrence on South African beaches (Every *et al.*, Brooke & Avery 1981, Batchelor 1982) of Kerguelen Petrels, Blue Petrels and Antarctic and Thinbilled Prions. Bourne (1982) also comments that numbers of prions are also periodically wrecked at this time of the year on the coast of Chile and Peru. It is likely, therefore, that the same factors suggested by Bourne (1982) and Powlesland (1983) lead to the periodic seasonal beaching in South Africa of Procellariiformes, including rarer species such as the Lightmantled Sooty Albatross.

It would still be valuable for members to establish additional surveys to enable us to increase our coverage of different areas and conditions. In addition, the establishment of daily surveys, although onerous, would provide invaluable information as described above. Information on seasonal mortality of the more abundant species is becoming available and it would be interesting to be able to relate this to biophysical events. This will only be effective with access to more detailed data.

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G. Avery, South African Museum, P.O. Box 61, Cape Town, 8000, South Africa.

