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The status of breeding birds at Cierva Point and surroundings, Danco Coast, Antarctic Peninsula

ABSTRACT: A survey of breeding birds was carried out during the summer 1997–98 in several localities of the northern Danco Coast, Antarctic Peninsula. A total of 10 species were recorded: *Pygoscelis antarctica* (3234 pairs), *P. papua* (1888), *Macronectes giganteus* (76), *Daption capense* (61), *Oceanites oceanicus* (10⁴), *Phalacrocorax bransfieldensis* (92), *Chionis alba* (15), *Catharacta maccormicki* (168), *Larus dominicanus* (583) and *Sterna vittata* (160 pairs).

Key words: Antarctica, Danco Coast, breeding birds.

Introduction

Since the 1980's several studies have pointed out the occurrence of large fluctuations in seabird populations in Antarctica and the Southern Ocean and stressed the need of monitoring studies aimed at enabling the management and protection of the living resources (*e.g.* Croxall *et al.* 1981, 1984; Jouventin and Weimerskirch 1990; Woehler 1993). However, with the exception of penguins (see Croxall and Kirkwood 1979, Woehler 1993), the database on the breeding distribution of Antarctic seabirds is very poor (Croxall *et al.* 1995). As a consequence, the Bird Biology Subcommittee of the Scientific Committee on Antarctic Research (SCAR-BBS) is encouraging the documentation and publication of available data on the distribution and abundance of Antarctic seabirds. In this paper we detail information on the distribution and abundance of breeding birds at the northern extreme of the Danco

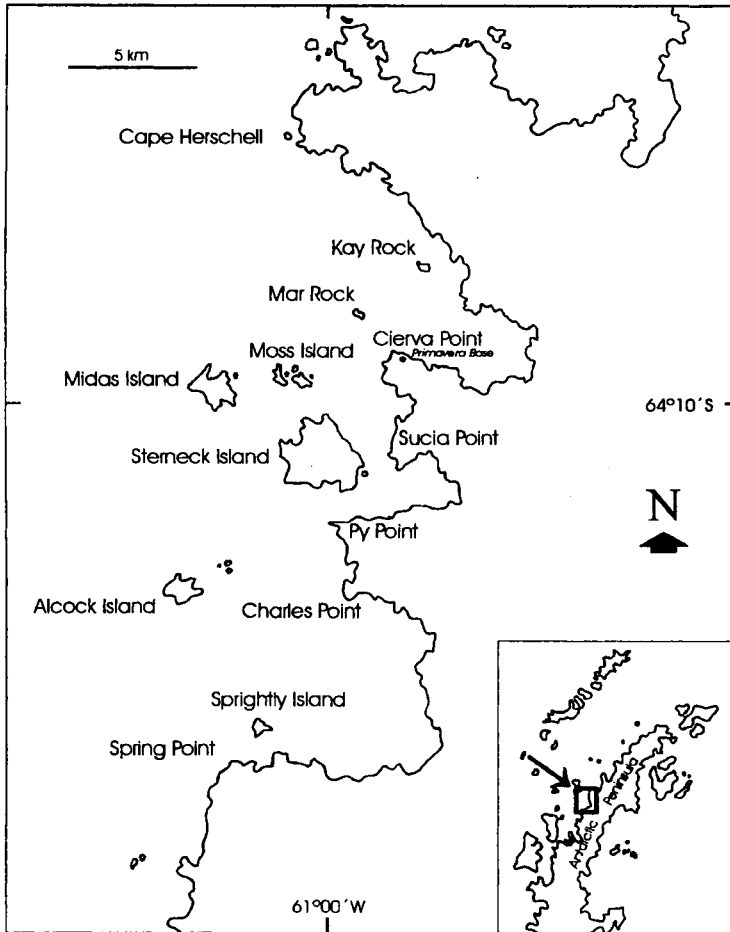


Fig. 1. Location of surveyed area at northern Danco Coast, Antarctic Peninsula.

Coast (Antarctic Peninsula), including the Site of Special Scientific Interest (SSSI) No. 15, Cierva Point, and surroundings.

Study area and methods

Our survey was carried out from 20 December 1997 to 19 January 1998 at several localities between Cape Herschel and Spring Point, Danco Coast, Antarctic Peninsula (Fig. 1). This area included the SSSI No. 15, with comprises Cierva Point, Moss Island and Midas Island.

The estimation of the number of breeding pairs was made by direct counts with help of 10x binoculars during the incubation and rearing periods. The accuracy of the estimations was $\pm 10\%$ for gentoo penguin – *Pygoscelis papua* (Forster, 1781),

and chinstrap penguin – *P. antarctica* (Forster, 1781) (count of nests by area, N2 following Croxall and Kirkwood 1979). Antarctic shag – *Phalacrocorax bransfieldensis* Murphy, 1936, southern giant petrel – *Macronectes giganteus* (Gmelin, 1789), cape petrel – *Daption capense* (Linnaeus, 1758), kelp gull – *Larus dominicanus* Lichtenstein, 1823, Antarctic tern – *Sterna vittata* Gmelin, 1789 and pale-faced sheathbill – *Chionis alba* (Gmelin, 1789) were essentially individually counted within $\pm 5\%$ accuracy (individual nest counting, N1); and $\pm 10\text{--}15\%$ for south polar skua – *Catharacta maccormicki* (Saunders, 1893) (accurate estimation of nests, N3). Wilson's storm petrel – *Oceanites oceanicus* (Kuhl, 1820) counting was accurate to one order of magnitude by the observation of adults' abundance at sunset (N5).

In this paper we adopted the specific nomenclature given in the revisions by Marchant and Higgins (1990) and del Hoyo *et al.* (1992, 1996).

Results and discussion

The localities surveyed comprised about 60 km of the northernmost part of the Danco Coast and adjacent islands (roughly 350 km²). In this area a total of 10 species were found breeding, including two penguin species and 8 flying bird species.

Penguins. — Among these birds, *P. antarctica* was the most numerous species, totaling 3234 pairs. The most important colonies (*e.g.* greater than 500 nests) were restricted to Mar Rock, Cape Herschel, Midas and Alcock Islands (Table 1). Scientific data in Croxall and Kirkwood (1979) and Woehler (1993) were in agreement with our report on the presence of reproductive groups in the mentioned localities. However, the abundance reported in the 70's for Midas and Alcock Islands showed a steep decline of about four and six times before our surveys. On the other hand some colonies such as those located at Mar Rock and Spring Point, increased their numbers by about three times, thus suggesting the possibility of local movements and variations rather than a marked tendency in the overall population.

A total of 1888 pairs of *P. papua* were recorded, with the most important colonies being located at Cierva Point, Sterneck Island, and Py Point. Novatti (1978) reported for the period 1954–1958 at Cierva Point an abundance of 550 to 600 breeding pairs. Despite more recent censuses carried out in the present decade showing a population increase from 800 to more than 1000 pairs (1991–1996 period) (Cirelli *et al.* 1997), our surveys were in agreement with those reported for the 50's. The differences could be due merely to seasonal fluctuations, or to differences in methods and dates during the censuses. In other localities, local increases were observed at Sterneck Island (2 \times) and Charles Point (3 \times) (Table 2).

Flying birds. — Antarctic shag colonies were found in 6 small colonies, totaling 92 breeding pairs in the whole surveyed area (Table 3). Most of the nests were lo-

Table 1

Size of *P. antarctica* colonies at different localities in the surveyed area. In brackets the census method and below the year when censuses were performed. Nature and accuracy of counts following Croxall and Kirkwood (1979) and Woehler (1993): N = counts of nests, 2 = accuracy \pm 5–10%, 3 = accurate estimate \pm 10–15%, 4 = rough estimate \pm 25–50%.

Locality	Müller-Schwarze (1975) ^a	Poncet and Poncet (1987)	Woehler (1993)	This study
Cape Herschel 64°04'36"S 61°01'51"W				316 (N2) [1998]
Kay Rock 64°07'33"S 60°56'07"W				21 (N2) [1998]
Mar Rock ^b 64°08'34"S 60°58'59"W		500 (N4) [1984]		1553 (N2) [1998]
Midas Island 64°10'09"S 61°05'07"W	2060 (N3) [1971]	200 (N3/4) [1987]		546 (N2) [1998]
Sterneck Island 64°12'08"S 60°58'55"W		1100 (N4) [1987]		152+ (N2) [1998]
Py + Charles Point 64°13'29"S 61°00'17"W		10 (N1) [1987]		13 (N2) [1998]
Alcock Island 64°14'20"S 61°06'56"W	7710 (N3) [1971]	10000 (N3) [1971]	3000 (N4) [1990]	605 (N2) [1998]
Spring Point 64°17'03"S 61°03'04"W		85 (N3/4) [1984]	60 (N4) [1990]	180 ^c (N2) [1998]

^a in Croxall and Kirkwood (1979)

^b Primavera Island after Woehler (1993)

^c Including Sprightly Island

cated near chinstrap penguin ones. No historical data are available in the bibliography, but field evidence revealed that, at least during recent years, some small colonies, such as the one located at Mar Rocks, have been larger than their actual status.

Among petrels, a total of 76 *M. giganteus* nests were recorded among which no literature data exist for the colony located at Sucia Point. However the presence of nests was formerly reported at Sterneck and Moss Islands (Patterson *et al.*, unpubl. data, in Patterson and Hunter 1998), although no abundance data are available. Although *D. capense* were frequently seen, only 61 pairs were censused in small breeding groups. The most abundant species by far in the study area was *O. oceanicus*; no systematic counts were carried out, but a gross estimation gives a 10⁴ population size.

Among charadriiform birds, *L. dominicanus* was the most important species in the area, totaling 583 pairs distributed in four large colonies with more than 65 nests and several lesser breeding groups. The abundance of this species was by far larger than that observed in several areas surveyed by the authors in the South Shetland Islands (see Favero and Silva 1991, Coria *et al* 1995, Silva *et al.* 1998). These abundances could be linked to particularly favorable conditions to breed and forage in the study area (Favero, unpubl. data).

Table 2

Size of *P. papua* colonies at different localities in the surveyed area. In brackets the census method and below the year when censuses were performed. References as in Table 1.

Locality	Novatti (1978)	Poncet and Poncet (1987)	Cirelli <i>et al.</i> (1997)	This study
Cierva Point 64°09'23"S 60°57'17"W	550–600 (?) [1954–58]	600 (N1) ^a [1984]	800–100 (?) [1991–96]	593 (N2) [1998]
Sterneck Island 64°12'08"S 60°58'55"W		450 (N1) [1987]		905 (N2) [1998]
Py + Charles Point 64°13'29"S 61°00'17"W		130 (N3) [1987]		390 (N2) [1998]

^a Wrongly cited as Cape Spring in Woehler (1993)

Table 3

Number of breeding pairs of flying birds recorded in the study area. P.bra = Antarctic shag, *Phalacrocorax bransfieldensis*; M.gig = southern giant petrel, *Macronectes giganteus*; D.cap = cape petrel, *Daption capense*; O.oce = Wilson's storm petrel, *Oceanites oceanicus*; C.alb = pale-faced seathbill, *Chionis alba*; C.mac = south polar skua, *Catharacta maccormicki*; L.dom = kelp gull, *Larus dominicanus*; S.vit = Antarctic tern, *Sterna vittata*.

Locality	P.bra	M.gig	D.cap	O.oce	C.alb	C.mac	L.dom	S.vit
Cape Herschel 64°04'36"S 61°01'51"W	28		2	NC	1	2	2	
Cierva Point 64°09'23"S 60°57'17"W			7	10 ³	2	145	158	45
Kay Rock 64°07'33"S 60°56'07"W				10 ²		1		
Mar Rock 64°08'34"S 60°58'59"W	9		1	10 ²	3	3	8	
Moss Island 64°10'06"S 61°02'27"W		35	28	10 ³	3	10	120	15
Midas Island 64°10'09"S 61°05'07"W	21			10 ²	1	3	15	35
Sucia Point 64°10'56"S 60°57'36"W		47		10 ²		25+	35	15
Sterneck Island 64°12'08"S 60°58'55"W		5+	23	10 ³	1+	2+	68	15
Py Point 64°13'29"S 61°00'17"W	22			10 ²	1		35	20
Charles Point 64°14'10"S 61°00'10"W				10 ³		40+	105	15+
Alcock Island 64°14'20"S 61°06'56"W	2	5+	7+	10 ³	4	7+	37	20+
Spring Point ^a 64°17'03"S 61°03'04"W	10			10 ²		4	25+	15

NC species present and breeding but no censuses performed,

+ possible underestimation,

^a Sprightly Island included.

Among skuas, *M. macormicki* was the only breeding species found during our censuses. A total of 168 active nests were distributed in two main areas (Cierva and Charles Point), and several minor localities had scattered nests. No brown skuas were found breeding in the study area.

About 160 *S. vittata* nests were found scattered over almost all Points and Islands surveyed. Finally, and contrasting with the situation at northern localities, the abundance of *C. alba* in the surveyed area was particularly low; this fact could be linked to the low availability of suitable breeding grounds and lower food availability (*i.e.* narrow intertidal shores and smaller penguin colonies) than in northern localities such as occur in the South Shetland and South Orkney Islands (Favero 1998).

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Streszczenie

W czasie badań prowadzonych w sezonie letnim 1997/98 na południu Danco Coast (Półwysep Antarktyczny) stwierdzono 10 gatunków gnieźdzących się ptaków: *Pygoscelis antarctica* (3234 pary), *P. papua* (1888), *Macronectes giganteus* (76), *Daption capense* (61), *Oceanites oceanicus* (10⁶), *Phalacrocorax bransfieldensis* (92), *Chionis alba* (15), *Catharacta maccormicki* (168), *Larus dominicanus* (583) i *Sterna vittata* (160 par).