POLISH POLAR RESEARCH	14	4	433-439	1993

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Flying birds at Esperanza Bay, Antarctica

ABSTRACT: Flying bird counts were carried out at Esperanza Bay (62°24'S, 56°59'W), Antarctic Peninsula, between November 1989 and February 1990. Six breeding species (*Oceanites oceanicus, Chionis alba, Catharacta lonnbergi, Catharacta maccormicki, Larus dominicanus* and *Sterna vittata*) and six visitor species (*Macronectes giganteus, Fulmarus glacialoides, Daption capense, Pagodroma nivea, Fregetta tropica* and *Phalacrocorax atriceps*) were recorded. Kelp gull and Antarctic tern populations have decreased in relation to the data by previous authors, perhaps as a result of the increased activity at Esperanza Station. *Cygnus melanocoryphus* was recorded for the first time at Esperanza Bay.

K e y w o r d s: Antarctica, Esperanza Bay, Hope Bay, flying birds, visitor birds.

Introduction

Esperanza Bay is an important region located at the tip of Antarctic Peninsula where an extensive bird population is settled. Anderson (1905) gathered the first data on these birds. Sladen (1958) in 1948, Novatti (1959) in 1955, have worked exclusively at the Adelie penguin colony (*Pygoscelis adeliae*) the main species reproducing in this place. Wilson (1983) and Myrcha, Tatur and Del Valle (1987) estimated the total number of reproductive pairs of this colony. Cordier et al. (1983) have carried out a complete ecological study of breeding birds at Esperanza Bay, and have also compiled a list of visitor species.

The aim ot this study is to determine the number of breeding flying birds species as well as the visitor species in this region.

Area of study

This study was carried out at Esperanza Bay/Hope Bay (63°24'S, 56°59'W) located at the northern end of Antarctic Peninsula. This Bay is separated from Bransfield, Joinville and Dundee islands by the Antarctic Strait. Most of the surroundings of the Bay are occupied by glaciers except for its southern face which posesses an ice-free area of the surface of approximately 10 km², inhabited by an important bird population.

There are two coves in the above mentioned area, Hut Cove and Eagle Cove, separated by Seal Point. Further south Scar Hills are located of the altitude of some hundred meters a.s.l., and finally, Mount Flora (500 m a.s.l.), the most important mountain in this area. Boeckella Lake situated forty meters a.s.l. is an important fresh water source (Fig. 1).

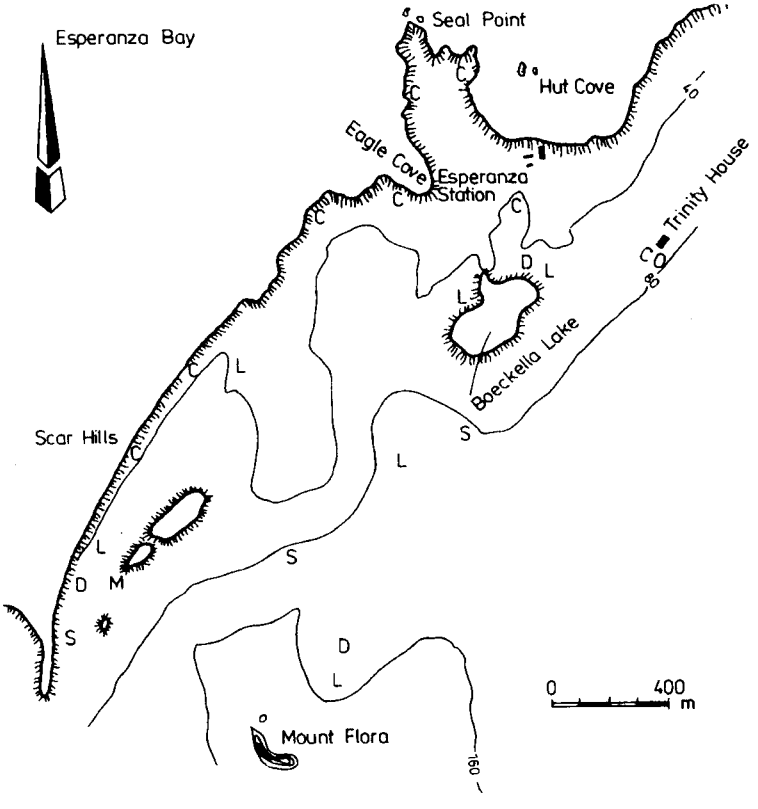

Fig. 1. Distribution of breding places of flying birds at Esperanza Bay: S — *Sterna vittata*, L — *Catharacta lonnbergi*, M — *Catharacta maccormicki*, D — *Larus dominicanus*, O — *Oceanites oceanicus*, C — *Chionis alba*.

Material and methods

Field work was carried out between November 1989 and February 1990. Reproductive events were determined after periodical walks through the area.

First and last egg laying and hatching dates were registered for each species. The number of breeding pairs was determined by direct counting of the active nests. Eleven transect censuses 2500 m long and with seven day frequency along the Adelie penguin colony were carried out. Visitor birds were identified by direct observation.

Results

At Esperanza Bay six breding flying birds species were recorded: Wilson Storm Petrel — *Oceanites oceanicus* (Kuhl), Sheathbill — *Chionis alba* (Gmelin), Brown Skua — *Catharacta lonnbergi* (Mathews), South Polar Skua — *Catharacta maccormicki* (Saunders), Kelp Gull — *Larus dominicanus* Lichtenstein and Antarctic Tern — *Sterna vittata* Gmelin. The abundance and reproductive events of these birds are shown in Table I.

Table I

Flying birds breeding populations size (pairs) and dates of laying and hatching at Esperanza Bay.

Species	Breeding pairs	Date of laying	Date of hatching
Oceanites oceanicus	3	03.I. 10.I.	**
Chionis alba	15	01.XII. 03.I	04.I. 30.I
Catharacta lonnbergi	7	01.XII 16.XII	01.I. 06.I.
Catharacta maccormicki	1	01.XII	28.XII.
Larus dominicanus	20	23.XI. 15.XII.	21.XII. 12.I.
Sterna vittata	22	28.XI. 07.XII.	26.XII. 01.I.

As regards *O. oceanicus*, hatching date could not be determined due to the fact that the eggs had been lost: nests were found in the proximities of the English Hut "Trinity House", while the remaining one was found at the foot of Mount Flora.

C. alba nests were distributed in the following way: four of them in Seal Point, six in Eagle Cove, five in Scar Hills and the remaining one near English Hut.

Three *C. lonnbergi* nests were found at the shore of Boeckella Lake, three at the foot of Mount Flora and the remaining one at Scar Hills. Only one *C. maccormicki* nest was found south of Scar Hills.

Nests of *L. dominicanus* and *C. lonnbergi* were distributed in the same zone: sixteen at Scar Hills, three near Boeckella Lake and one at the base of Mount Flora.

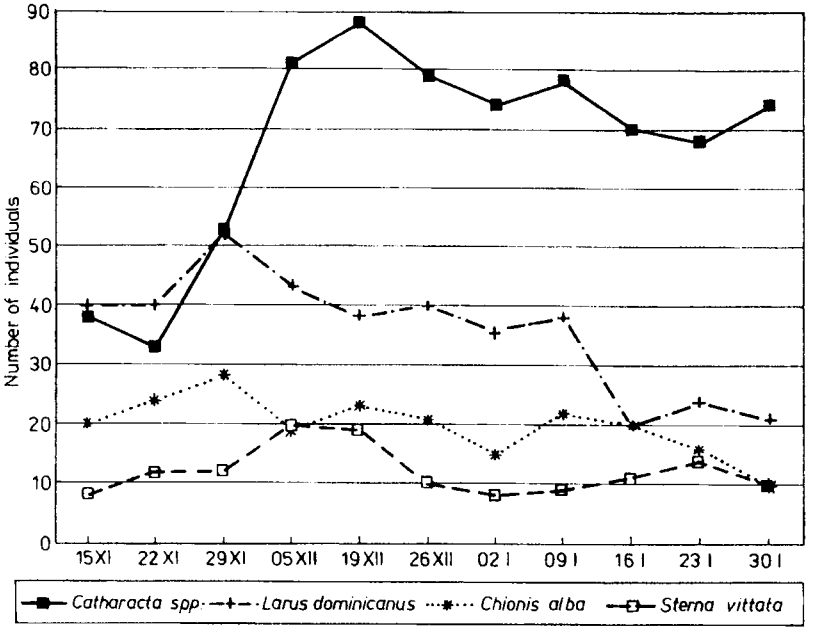

Fig. 2. Transect counts of breeding flying birds.

Three colonies of *S. vittata* were registered: one at Scar Hills (sixteen nests), another at Mount Flora (three nests) and third one to the west of this mount (one nest).

Information coming from transect census showed *Catharacta* spp. as predominant birds, including reproductive individuals and those coming from clubs.

Visitor birds that have been observed at the study area were: Southern Giant petrel — *Macronectes giganteus* (Gmelin), Austral fulmar — *Fulmarus glacialoides* (Smith), Cape petrel — *Daption capense* (L.), Snow petrel — *Pagodroma nivea* (Forster), Black bellied storm petrel — *Fregetta tropica* (Gould) and Blue eyed shag — *Phalacrocorax atriceps* (King). These birds were reported frequently except for *F. glacialoides* and *P. nivea*, which were registered only once during the period of study.

Between January 14th and January 20th one adult individual of a Black neck swan, *Cygnus melanocoryphus* (Molina) was observed. This is a non breeding bird in this latitude.

Discussion

Egg laying data registered for *O. oceanicus* at the area of study coincide with data of other zones situated south of the Antarctic convergence (Roberts 1940, Beck and Brown 1972, Furse 1979). Cordier et al. (1983) have presented the laying egg date as December 30th in coincidence with our records. As breeding zones for this species have been recorded Seal Point by Anderson (1905) and Esperanza Station surroundings by Cordier et al. (1983). Nevertheless the distribution of nests in the present study was different. The differences in the selection of the breeding place are mainly due to the existence of holes free from snow and ice. Nest loss occurs when the place chosen by the bird is not right one. This was the case during the reproductive season 1989–90. Information obtained in the present study regarding egg laying dates for *C. alba, C. lonnbergi, C. maccormicki, L. dominicanus* and *S. vittata* are in concordance with data by Cordier et al. (1983).

Data about breeding zones and nest number of *C. alba* and *C. maccormicki* are also in agreement with previous informations on that species, whereas the number of reproductive pairs of *C. lonnbergi* increased.

Reproductive populations of *L. dominicanus* and *S. vittata* have decreased at Esperanza Bay during the reproductive period 1989–90 in comparison to the 1979–80 season. Cordier et al. (1983) have recorded the presence of fifty nine nests of *L. dominicanus* and thirty nine nests of *S. vittata*. On the other hand, they have found four colonies of *S. vittata* whereas during the reproductive season 1989–90 only three colonies were found.

When comparing the results of this study with the previous ones carried out at Esperanza Bay, the flying birds reproductive populations remained stable, except for *L. dominicanus* and *S. vittata* whose populations have decreased. Perhaps this is related to the increasing human activities in the last ten years at Esperanza Station. Obviously, this population decrease still needs future studies. Taking into account the suggestions of Rootes (1988) for Antarctic tern and Giant petrel of Signy Island (South Orkney Islands) the Kelp gull and Antarctic tern populations should be monitored every five years in order to determine future changes.

Maximal abundance of flying birds was recorded by transect census for *Catharacta* spp.; increase of this abundance in the area coincided with the hatching period of Adelie penguins. This pygoscelid provides a great quantity of food available for skuas explaining why these birds come from other zones.

The present record of *Cygnus melanocoryphus* is not the first record of this species in Antarctic region. Previous records were 1917 at Charlotte Chanel (64°40'S) (Bennett 1922) and more recently Lazo and Yanez (1989), Favero, Bellagamba and Farenga (1991) and Sierakowski (1991) reported this bird at South Shetland Islands. Nevertheless, it is the first record not only for this place but also for the eastern Antarctic Peninsula. At Esperanza Bay similarly to what

had been observed at South Shetland Islands, this swan was observed feeding at the sea, few meters far from the coast.

Acknowledgments. Thanks are due to the members of Esperanza Station for their logistic help and to Mr. A. Alagia for his technical assistance. This study was carried out by the Seabird Scientific Group, Instituto Antártico Argentino.

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Revised and accepted May 17, 1994

Streszczenie

W rejonie argentyńskiej Stacji „Esperanza", u wybrzeży Esperanza Bay liczono ptaki latające w okresie antarktycznego lata 1989/90 (listopad–luty). Stwierdzono obecność sześciu gatunków lęgowych (*Oceanites oceanicus, Chionis alba, Catharacta lonnbergi, C. maccormicki, Larus dominicanus* i *Sterna vittata*) oraz sześciu gatunków zalatujących (*Macronectes giganteus, Fulmarus glacialoides, Daption capense, Pagodroma nivea, Fregetta tropica* oraz *Phalacrocorax atriceps*).

Liczebność populacji *L. dominicanus* i *S. vittata* zmniejszyła się w porównaniu do wcześniej podawanych liczebności tych gatunków. Przyczyny tego zjawiska autorzy upatrują w rosnącej aktywności Stacji „Esperanza".

Po raz pierwszy w rejonie Esperanza Bay odnotowano obecność jednego osobnika *Cygnus melanocoryphus*. Pojedyncze osobniki tego gatunku były dotąd obserwowane w rejonie Antarktyki Zachodniej.