

A CENSUS OF THE SOUTH POLAR SKUA AT CAPE HALLETT, ANTARCTICA

By JONATHAN G. PASCOE

ABSTRACT

Two counts of skuas at Cape Hallett were made between 17 and 20 January 1983: in one 85 pairs and 83 non-breeding birds, total 253 birds; in the other, 83 pairs and 79 non-breeding birds, total 245 birds.

South Polar Skua numbers remain low, suggesting a continuation of the 1960s decline or the influence of climatic factors such as heavy snowfall during critical stages of skua breeding.

INTRODUCTION

At Cape Hallett (72° 18' S, 170° 19' E) in Northern Victoria Land, Antarctica, South Polar Skuas (*Catharacta maccormicki*) breed close to the rookery of Adelie Penguins (*Pygoscelis adeliae*). This rookery is on the site of the joint United States-New Zealand scientific station, which was established in December 1956; closed in February 1973, and has remained unoccupied since. During the period of human occupation the skua breeding population declined steadily from 181 pairs in 1960/61 (Maher 1966) to 98 pairs in 1971/72 (Trillmich 1978). This decline coincided with an overall decline of Adelie Penguins from 65 000 breeding pairs in 1956 to 37 000 pairs in 1968 but then an increase to 50 000 pairs in 1972/73 (G. Wilson, pers. comm.).

Maher (1966) thought that the breeding habits and schedule of the skuas depended almost completely on the penguins. Johnstone (1971) attributed the decline to human activity.

Whether the skua is influenced more by people or by penguins is debatable, and so the present status of the skua at Cape Hallett, after the 10-year absence of human occupation, is of much interest. Therefore, a skua census was one of the objectives of the New Zealand International Survey of Antarctic Seabirds expedition to Cape Hallett during the 1982/83 summer season.

Description of area: Cape Hallett consists of a 300-metre-high headland to the north and east of a 20-ha hook-shaped gravel spit (Seabee Spit, Fig. 2), on which the Adelie Penguins nest. The disused base is at the outer end of this spit. The main skua nesting area (Fig. 3) is at the base of cliffs along the eastern end of the spit. The nesting area is elongated, triangular, and rather flat, 500 metres long and bounded by the penguin colony to the north and Willett Cove

to the west. It extends up a steep moraine to an ablating icefall to the east (Fig. 4).

The skua nesting grounds also incorporate the Specially Protected Area No. 7 (SPA), where mosses and lichens abound. These 'specially protected areas' are areas considered to be of outstanding scientific interest and accorded special protection by the participating governments of the Antarctic Treaty in order to preserve their unique natural ecological system.

METHOD AND RESULTS

To do the skua census, I made two separate ground counts between 17 and 20 January 1983. I classed as breeding birds the pairs that I saw nesting with eggs or young and the pairs that were obviously guarding territories but whose eggs or young I did not see.

I subdivided the area into the Moubray Bay Beach, the Spit and Isthmus, the SPA flat, and the SPA moraine. By systematically walking in a grid pattern through each area, I could make observations as far as the ablating icefall above the moraine to the east. I also



FIGURE 1 — South Polar Skua at Cape Hallett

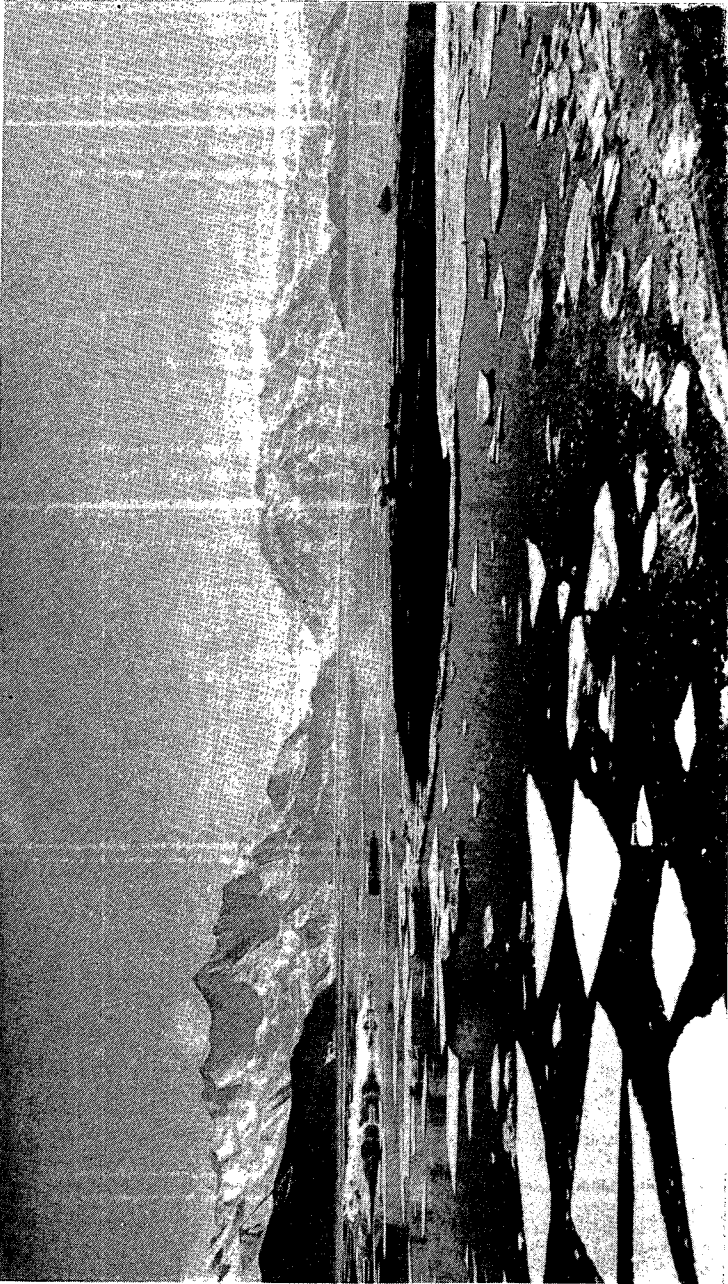


FIGURE 2 — Cape Hallett environs looking west with Seabee Spit and Moubay Bay, and Mt Herschel in the Admiralty Range in the distance



FIGURE 3 — Seabee Spit from Hallett Peninsula. The skua nesting area is in the foreground. The Adelie Penguin colony and disused Hallett Station are on the Spit. Admiralty Range is in the distance.

explored the rock cliffs of the Cape Hallett headland by sidling around at sea level and from above 300 metres by climbing on to the Hallett peninsula and skirting the cliffs from above.

Table 1 summarises the results. The two counts gave 85 and 83 pairs. Most birds were on the moraine 50 metres a.s.l. but below the ablating icefall (45 pairs) or on the SPA flat (33 pairs). Only 5 pairs were noted on the spit and isthmus, the area occupied by the penguin colony. One breeding pair on the rock bluffs several hundred metres south of the main skua rookery I have included in the moraine count total. I saw no breeding birds on the Cape Hallett headland.

The breeding birds on the SPA flat both with or without eggs or young were easy to count — 16 and 20 pairs in count 1 and 17 and 16 pairs in count 2, totals 36 pairs on count 1 and 33 pairs on count 2.

On the moraine, territories were fairly easy to find but nests were harder to find. I found more nests on the second count probably because I was more familiar with the area — 26 pairs with eggs or young and 17 pairs without eggs or young in count 1 and 34 pairs and 11 pairs in count 2, totals 43 pairs on count 1 and 45 pairs

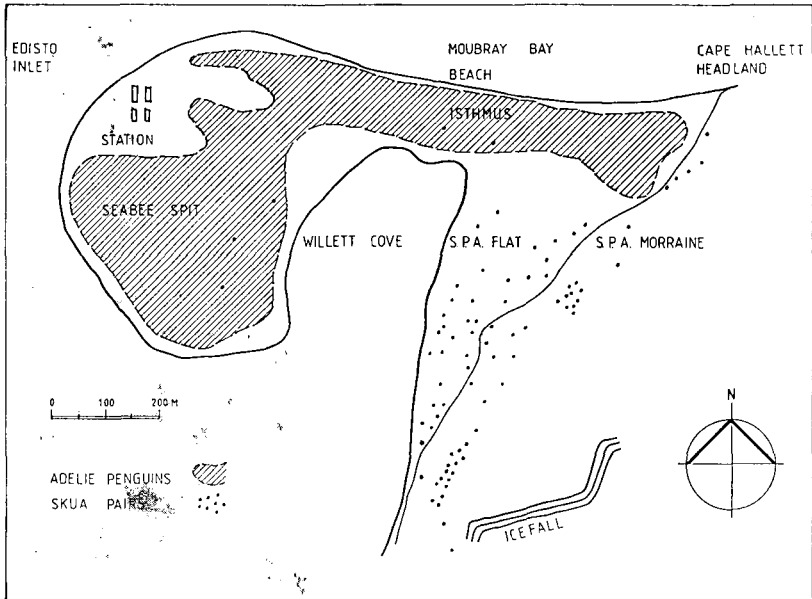


FIGURE 4 — Map of Cape Hallett Adelie Penguin rookery with nest territories of 83 skua pairs, 19-20 January 1983

on count 2. The non-breeders or club birds (83 total in count 1 and 79 total in count 2) mainly congregated 300 metres south of the penguin colony near a pond on the SPA flat, and on the adjacent lower moraine. The total skua numbers in the rookery were 253 in count 1 and 245 in count 2.

I made a third count on 3 February 1983 to determine how many of the breeding and non-breeding birds were banded. As territories were beginning to break down at this time, only 71 pairs were still on breeding sites. Of these, 44 birds were banded and 98 were not. I also saw 92 non-breeding birds. Of these, 20 were banded and 72 were not.

DISCUSSION

Between 1960 and 1972, the skua population at Cape Hallett declined by 54% from 181 pairs in 1960/61 to 98 pairs in 1971/72 (Table 2). The relative influence of human disturbance and the declining penguin population on the skua population has been debated over the years. Maher (1966) thought that skua breeding habits depended almost completely on the penguin population and on long-term predator-prey adjustment. According to Young (1981), however, skuas breeding with penguins are forceful opportunistic scavengers, few of which are active predators. Johnston (1971) thought that skuas declined because adults abandoned the Cape Hallett colony as a result of human activity, although he also thought that the relationship between skuas and penguins as a proximate cause needed further evaluation.

In the 1983 skua census the breeding population has continued to fall to about 84 pairs, despite 10 years without human occupation at Cape Hallett. Are skuas, therefore, continuing to abandon Cape Hallett as a place for breeding?

Recently, the status of the Hallett penguin rookery has been assessed from aerial photographs taken by Ecology Division staff in 1981 and 1982 (R. Taylor, pers. comm.) and from ground observations (G. Wilson, pers. comm.). Photographs show that both the skua and the penguin breeding grounds at Cape Hallett were heavily covered by snow in December 1982. The ground was snow free, however, in November 1981 (R. Taylor, pers. comm.). This abnormally heavy snow cover at a critical time in the breeding cycle of the South Polar Skua may perhaps have contributed to the fewer skua pairs counted in the 1983 census. Further long-term information will clarify the position at Cape Hallett.

As skuas were last banded at Cape Hallett in 1972/73 (Baker 1973), the observations suggest that at least 30% of the breeding population is over 10 years old, although banded immigrants from other colonies may be augmenting the tally. Capture of all birds is therefore important in future ISAS work.

TABLE 1 — Summary of skua census, Cape Hallett

Location	Breeding birds on territories 17 - 18 January 1983			Non- breeding Birds	Total Birds	Breeding birds on territories 19 - 20 January 1983			Non- breeding Birds	Total Birds
	Pairs With Eggs or Young	Pairs Without Eggs or Young	Total Pairs			Pairs With Eggs or Young	Pairs Without Eggs or Young	Total Pairs		
Beach	NIL	NIL	NIL	8	8	NIL	NIL	NIL	7	7
Isthmus and Spit	2	4	6	10	22	3	2	5	10	20
S P A Flat	16	20	36	49	121	17	16	33	58	124
S P A Moraine	26	17	43	16	102	34	11	45	4	94
Total	44	41	85	83	253	54	29	83	79	245

TABLE 2 — Numbers of the South Polar Skua (*Catharacta maccormicki*) during 11 years of human occupation at Cape Hallett, Antarctica

YEAR	NUMBER OF PAIRS	AUTHOR
1960 - 1961	181	Maher 1966
1963 - 1964	161	Johnston 1971
1965 - 1966	147	"
1966 - 1967	113	"
1967 - 1968	105	"
1968 - 1969	98	"
1971 - 1972	98	Trillmich 1978

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JONATHAN G. PASCOE, *Ilam Medical Centre, 106 Memorial Avenue, Christchurch 5*