

# The status of the Jackass Penguin *Spheniscus demersus* on Halifax Island off South West Africa

by

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## 1. INTRODUCTION

The very noticeable decline of the Jackass Penguin *Spheniscus demersus* (Linnaeus) on the Southern African coastline is a cause for serious concern (Kolberg unpubl. MS, Westphal and Rowan, 1970). For this reason a census of the total penguin population was undertaken on Halifax Island near Lüderitz, South West Africa. In addition to the islands off the South African Cape Province, *Spheniscus demersus* breeds on Possession, Pomona, Halifax, Plum Pudding, Ichaboe, Sinclair and Mercury Islands off the South West African coast (Matthews, 1961) with the largest colonies to be found on the first three islands (Rand, 1963). Halifax Island was chosen for survey because it is close to the shore and easy to reach. Aerial photographs of the island and estimates of the numbers of penguins were made in 1956 (Rand, 1963), allowing comparison with present counts.

## 2. DESCRIPTION OF AREA

Halifax Island ( $26^{\circ} 39' S$ ,  $15^{\circ} 04' E$ ) is less than 100 m from the mainland. Approximately 380 m (north-south) by 400 m (east-west), it occupies about 8 ha. It is inhabited by humans for a few weeks at a time when guano is collected. The island is bare and wind-swept, with rocky outcrops predominantly on the western side where they reach

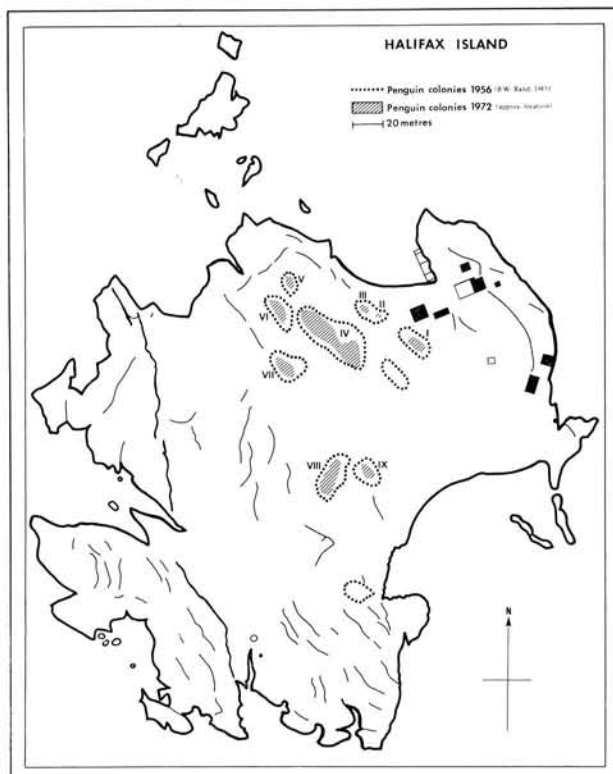


Figure 1. Halifax Island ( $26^{\circ} 39' S$ ,  $15^{\circ} 04' E$ ) is situated near Diaz Point at the south-western entrance to Lüderitz Bay on the south Atlantic coast of South West Africa. Penguins, nesting in the colonies indicated, are the most common and only guano producing avian residents.

heights of about 40 m. On the eastern side rocks rise to about 10 m. The guano collection supervisor's house and the labourers' quarters and tool-sheds stand on these rocks. The eastern and western rock outcrops are separated by low-lying, open ground virtually devoid of any shelter.

About nine-tenths of the total population form colonies in this open area (Fig. 1). The remaining penguins are dispersed in isolated pairs and small groups nesting under stunted bushes of *Lycium decumbens* or in rocky shelters. Well defined paths lead from the colonies to beach landing stages in the north and south.

### 3. METHOD OF COUNTING

We transversed the whole island on foot for each count. The penguins in the open breeding colonies remained fairly undisturbed, facilitating counting, if a slow approach was made. As only a few bushes exist on the island reasonably accurate counts were also possible of birds living under them. The birds nesting under rocks or in crevices were sometimes difficult to locate although their presence was usually indicated by entrance paths and bits of seaweed used for nest building.

The total population was counted five times (May, August 1971 and May, August, November 1972) (Table 1). During the first four counts we did not differentiate between immature and pulli and classed them together. At the fifth count we

separated feathered immatures and downy pulli but we feel that the number of pulli seen is a fraction of those actually present as most were sheltered by the parent birds. Due to the presence of predatory gulls we did not attempt a more accurate determination of pulli numbers and we suggest, because of the vulnerable open-site nesting, it would be unwise to do this.

Our criterion for separating immatures from adults is the distinct black facial patch and black chest stripe set against the white underside of the adult bird. These characters are easily distinguished in the field from the more homogenous off-white underside of the immature.

According to Rand (1960) peaks in egg-laying in the penguin colonies on the Cape islands occur during February and September of each year. Casual observations on Halifax Island supported this prediction.

### 4. RESULTS AND DISCUSSION

Of the nine open-site colonies existing at our first count in May 1971 two (Colonies II and III) have since been intermittently unoccupied. Two colonies have disappeared since Rand's (1963) count made in 1956. This means that the number of original colonies has decreased from at least ten to a minimum of seven and a maximum of nine. One of the former large colonies has been replaced by two smaller ones (II and III).

Table 1. Halifax Island Penguin population

Colony No./Area	Date and Age Classes										
	1971 May Ad. Imm/Pull		1971 August Ad. Imm/Pull		1972 May Ad. Imm/Pull		1972 August Ad. Imm/Pull		1972 November Ad. Imm Pull		
I	480	105	490	29	312	50	980	35	1 000	6	30
II	4	5	90	—	Unoccupied		Unoccupied		Unoccupied		
III	27	12	Unoccupied		Unoccupied		50	16	40	1	4
IV	1 700	200	1 500	45	589	54	2 100	7	2 000	1	?
V	113	18	120	12	84	19	160	11	100	—	2
VI	193	23	230	11	70	13	220	1	160	—	?
VII	183	30	200	8	110	20	210	3	180	—	?
VIII	145	9	158	18	115	11	280	25	4	—	3
IX	74	2	245	2	135	68	240	8	80	3	?
N. Beach and rocks	451	11	420	—		—	800	8	800	1	—
S. Beach and rocks	133	—	35	1	*	—	120	—	200	4	—
E. rocks	100	20	No count			—	100	6	257	9	—
W. rocks	25	—	No count			—	9	—	15	—	—
Total	3 628	435	3 488	126	2215	235	5 269	120	4 836	25	39+
% IMM.		12		4		10		2		1 (Imm/Pull)	

\* Estimate for beaches and rocks: 800

In both years the proportion of young (immature and pulli) was highest in May, probably the result of an earlier breeding peak. In August the percentage of young was much lower, being two per cent in 1972, whilst in November it was nearer one per cent. These low figures can partly be ascribed to interference by a team of guano collectors who scraped all the major nesting sites (Colonies I-IX) in August, 1972. From aerial photographs of Halifax Island taken in November 1956, Rand (1963) counted a total of 6 489 penguins in the ten open-site nesting colonies with an additional 2 150 penguins at the beach landing stages. Although immatures may have been included in the counts it is more probable that these figures reflect the number of adult birds (Rand, pers. comm.). Thus at least 8 639 full-grown penguins were present in 1956, with the total population estimated at about 10 000. For more realistic comparison with the 1956 figures the penguins present on the eastern and western rocks must be excluded from our counts and this gives an average of 3 887 adults present during 1971/1972 ground counts. Even allowing for discrepancies between aerial estimates and ground counts it is clear that the penguin population on Halifax Island has declined since 1956.

Guano scraping occurred only once during the two-year count period. From the disturbance it caused to the birds, it is clear that guano collecting should not be permitted when the birds are gathering to nest. During the guano harvest we often saw the birds mating and nest building in all colonies. Freshly laid eggs were present. Gulls, especially the Southern Black-backed Gull *Larus dominicanus* are attracted to the island during guano harvests. During the first three counts, Black-backed Gulls occurred in small numbers but when guano was being collected there were between 800-1 000 present. They were observed breaking eggs and killing pulli where the parent penguins had been chased from their nests.

Before the initial intervention of man all *Spheniscus* penguins nested in rock crevices or burrows excavated into sand or deep deposits of guano (Sparks and Soper, 1967). Guano deposits were found to depths of 12 m (Ichaboe Island) in 1843 (Andersson, 1861) where today bare rock remains. Open

site nesting in large colonies as commonly observed today was probably unusual. It is possible that the decline of the penguin population of Southern Africa dates from the appearance of Europeans on the coastal islands.

The conclusion reached from our counts is that the Jackass Penguin population on Halifax Island has declined to a fraction of its former numbers, and that the species will disappear from the island if existing trends continue.

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