

Observations on the seals of Gough Island

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Gough is a small oceanic island situated at 40° 21' S, 9° 53' W, 2 700 km west-south-west of Cape Town and 400 km south-east of the Tristan da Cunha group.

Two species of seal occur on Gough: the sub-Antarctic fur seal *Arctocephalus tropicalis* and the southern elephant seal *Mirounga leonina*. Some observations made on behalf of the Mammal Research Institute of the University of Pretoria during a visit to the island between 16 October and 8 November 1973 are presented here. The visit was sponsored by SASCAR to assess the possibilities of carrying out research on the flora and fauna of the island.

Methods

Trips were made on foot from the meteorological station (Gough House) to Seal Beach in Transvaal Bay and to the Admiral's Beach between Luff Point and South East Point. At the end of the visit landings were made from the ship at three east coast beaches (Sophora Glen, The Glen and Long Beach) using an inflatable pontoon. Penguin Island, Buttress Rock and beaches in Milford Bay were inspected from the pontoon.

Monel-metal tags were attached to the fore-flippers of 74 fur seals (40 pups and 34 subadults) (Table 1). These tags are regularly used by Sea Fisheries Branch scientists in studies of the Cape fur seal, *A. p. pusillus*. Each tag bears the address Guano Island Cape Town,

together with a unique number and a letter prefix.

Blood samples were taken from 32 fur seals, from which serum and red cell haemolysate samples were prepared. Electrophoretic analyses of such samples from southern fur seals in Australia, New Zealand, and Macquarie Island were useful in elucidating their taxonomy (Shaughnessy, 1970).

Eighteen elephant seal pups were also tagged on the fore-flipper, and one bull on the hind flipper (Table 1). Blood samples were taken from the intravertebral venous sinus of 11 pups. An electrophoretic study of blood proteins of southern elephant seals from Macquarie Island has already been made (Shaughnessy, 1974).

Results and discussion

Fur seals

Members of the Gough Island Scientific Survey in 1956 counted 13 000 fur seals on the island (Swales, 1956), most of which were on the west coast. The 1956 count at Gough showed a considerable increase over earlier estimates of the population. Our observations of seals were restricted to the protected east coast (Fig. 1). A comparison of counts made on some east coast beaches in November 1973 with those made at the same locations in 1956 suggests a twofold increase (Table 2). However, the two counts are not directly

Table 1

Fur seals *A. tropicalis* and elephant seals *M. leonina* tagged on Gough Island in 1973.

Locality	Date	Number of seals tagged	Serial numbers
		<i>A. tropicalis</i>	
Seal Beach	19 Oct.	1	A 6691
Seal Beach	27 Oct.	9	A 6692-6700
Seal Beach	28 Oct.	7	A 6701-6707
The Admiral's Beach	29 Oct.	9	A 6708-6716
Seal Beach	3 Nov.	4	A 6717-6720
Seal Beach	5 Nov.	10	A 6721-6730
Sophora Glen	7 Nov.	14*	A 6749, 6750, 6763-6775
The Glen	7 Nov.	12	A 6751-6762
Long Beach	8 Nov.	4	A 6741-6744
Reef Point	8 Nov.	4	A 6745-6748
		<i>M. leonina</i>	
Long Beach	8 Nov.	19	A 2207-2225

* One seal double-tagged

comparable, since the earlier count was made during the breeding season, while the later one was made several weeks before breeding commenced. It is, of course, possible that the seals are more common on the sheltered east coast during winter, and do not congregate on the popular breeding beaches until the beginning of the breeding season.

The most frequently visited colony was at Seal Beach, 400 m south of Gough House. This beach is 30 m long and backed by steep slopes of tussock grass (*Poa flabellata* and *Spartina arundinacea*). Most of the seals there were either pups of the year (and so about 11 months of age) or subadults. On most visits at least one large male was present. The maximum number of seals seen at Seal Beach was 56 including seven bulls. On that occasion several territorial disputes were witnessed within an hour. None of the three bulls involved had a cow in his territory, but an active vociferous bull 30 m away had eight smaller animals whose sex could not be determined in his territory.

At The Admiral's Beach, 1 km north of Gough House, a much larger colony of fur seals was found. Seals occurred all along the 400 m long beach and among boulders which stretch for another 50 m at its southern end. We counted 109 fur seals on the first visit and 150, including four bulls herding smaller animals, on the second. On both visits many seals must have been overlooked.

Since we were on the island about six weeks before the pupping season began in mid-December (Swales, 1956), it is difficult to know whether Seal Beach and The Admiral's Beach are breeding areas, although the observed territorial behaviour of bulls suggests that this is so. Members of the meteorological team saw black pups on the Admiral's Beach on 1 January 1973. Swales (1956) found few pups on the east coast, and none at The Admiral's Beach. Thus, an extension of the breeding range of the species may have occurred at Gough since 1956.

Fur seals were also seen on other beaches on the east coast: The Glen, Sophora Glen, Milford Bay and

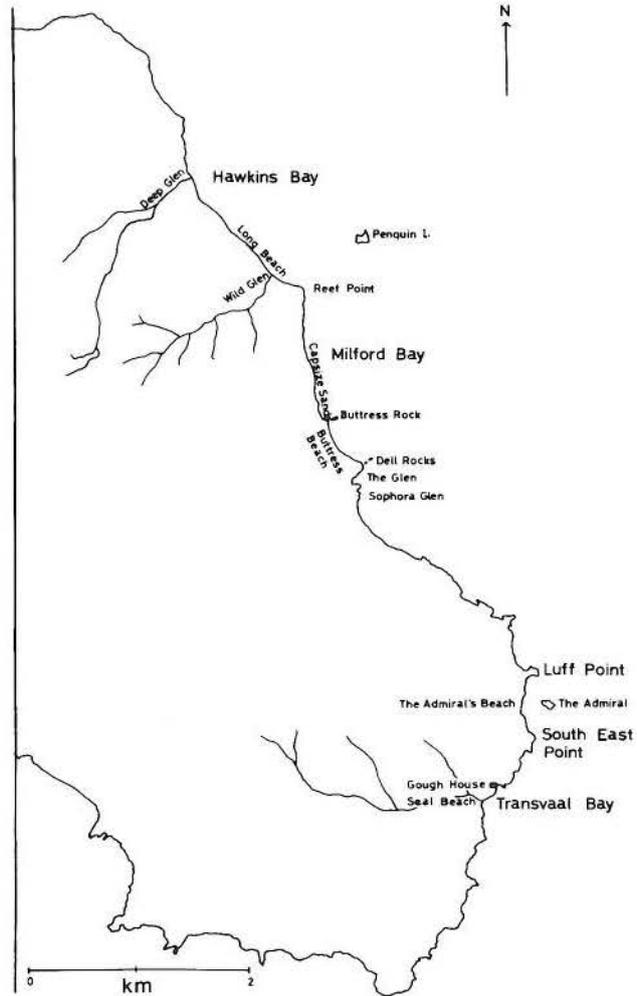


Fig. 1. Map of the east coast of Gough Island showing localities where observations of sub-Antarctic fur seals and southern elephant seals were made.

Hawkins Bay. The great number of seals (185) seen at The Glen suggests that this is a preferred location.

Table 2
Counts of sub-Antarctic fur seals *A. tropicalis* on the east coast of Gough Island at localities shown in Fig. 1. The counts in the first column are from Swales (1956) and the figures marked with an asterisk are estimates by Dr N. Fairall

	1956	18/10 - 7/11/73	8/1/74	Maximum
Seal beach and surroundings	50	10, 39, 22, 56, 28, 30	—	56
N. end of Transvaal Bay	—	12, 7	—	12
The Admiral's Beach	187	109, 150	—	150
Sophora Glen	10	116	—	116
The Glen	10	185	—	185
S. Buttress Beach to Dell Rocks	20	—	10	10
S. Buttress Beach	70	—	72	72
Buttress Rock	0	—	10	10
S. Capsize Sands	0	—	1	1
N. end of Milford Bay	0	—	15	15
Reef Point	7	—	50	50
Penguin Island	24	—	17*	17
Wild Glen	8	—	1	1
Wild Glen to N. end of Hawkins Bay	8	—	50*	50
Bay north of Hawkins Bay	0	—	50*	50
	394			795

Table 3

Counts of southern elephant seals *M. leonina* on the east coast of Gough Island, 8 November 1973

Locality	Bulls	Pups	Others	Total
Northern end Hawkins Bay	0	0	1	1
500 m north of Wild Glen	0	19	0	19
Wild Glen	1	5	0	6
100 m south of Wild Glen	4	6	2	12
Southern end Capsize Sands	1	0	0	1
Seal Beach*	1	0	0	1
Total	7	30	3	40

*Observation made 21 October

Elephant seals

The population of elephant seals at Gough Island was estimated at less than 300 in 1956 (Holdgate *et al.*, 1956). Altogether 40 elephant seals were seen on east coast beaches during the 1973 visit (Table 3), 38 of them in Hawkins Bay. The seven large males had open wounds on their proboscis, neck and axilla. Most of the remainder were weaned pups in excellent condition. The dorsal surface of one pup was covered with dark lanugo, three had less than 5 per cent of their dorsal surface covered with lanugo, and another 14 showed no traces of lanugo. The dorsal surface of a dead male pup 100 m north of Wild Glen among the tussocks retained some lanugo. No adult female elephant seals were seen; according to Carrick *et al.* (1962) they leave for sea soon after the pups are weaned.

Elephant seal wallows were seen in Hawkins Bay at Deep Glen and Wild Glen. Those immediately north of Deep Glen were the best developed. No elephant seal wallows were seen on any of the other beaches visited.

Gough Island has been included in the breeding range of the elephant seal in reviews of the species (e.g. Scheffer, 1958). Holdgate (1958) noted the presence of two cows with their pups at The Glen on 13 November 1955. Further evidence of a breeding population is provided by my observations near Wild Glen. The signs of fighting among adult males, together with the presence of pups retaining lanugo, indicate that mating and pupping do occur at Gough. Since lactation lasts for three weeks (Carrick *et al.*, 1962) it may be inferred that pupping occurs in the first half of October at Gough Island.

No elephant seals were seen at The Admiral's Beach, Sophora Glen, The Glen, South Buttress Rock, Reef Point, Penguin Island and the bay north of Hawkins Bay. Since no geographic breakdown of the 1956 population estimate is available, it is impossible to determine whether the population of elephant seals at Gough Island has changed in the intervening years.

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