

THE STATUS OF THE WEDDELL SEAL (*Leptonychotes weddelli*) AT SOUTH GEORGIA

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THE Weddell seal is circum-polar in distribution and it is one of the most southerly of Antarctic seals. Its range has been summarized by Scheffer (1958). Breeding occurs on the Antarctic mainland, and in the South Shetland and South Orkney Islands; South Georgia represents the northern limit of the breeding range, with a small colony situated at the southern end of the island in Drygalski Fjord. The species has been recorded as a visitor to South America, the Falkland Islands, Iles de Kerguelen, Macquarie and Heard Islands, and even very rarely to Australia and New Zealand. Generally, it is found close to the shore for the greater part of the year.

The South Georgia colony was first noted by Wilson (1914), and since then it has been reported on by Matthews (1929) and Bonner (1958). The present paper is a review of observations made between 1961 and 1965 while the author was working as Sealing Inspector in South Georgia.

In the normal breeding areas the Weddell seal comes ashore towards the end of August and the females usually drop their pups about a day after hauling out. At Signy Island in the South Orkney Islands, Mansfield (1958) found that the breeding haul-out commences in the last week of August and pupping continues for about 1 month. Bertram (1940) reported that in southern Graham Land (lat. 65–68°S.) the Weddell seal breeds about 2 weeks earlier than at Signy Island, and Lindsey (1937) found that in the Bay of Whales (lat. 78°S., long 164°W.) the pupping season is about 1 month later than in the South Orkney Islands. Mansfield (1958) found that the haul-out at Signy Island was affected by the distribution of pack ice; an early break-up of the pack greatly disturbs breeding.

South Georgia has been well known as a sealing ground since its discovery by Captain Cook in 1775, and vast numbers of seals have been killed, almost to the point of total extermination of the fur and elephant seals. At the beginning of the twentieth century the Falkland Islands Government introduced a Seal Fishery Ordinance with a view to conserving the stocks. A sealing industry, based on the whaling station at Grytviken, was allowed to operate under licence, to take elephant seals mainly but some Weddell seals were also taken. Between 1910 and 1916, when the species came under total protection, a total of 97 was killed (Matthews, 1929). Some Weddell seals must almost certainly have been killed by the early sealers but no records are available of the kill in these early years.

Observations made on the South Georgia colony have been confined to counts made from a boat anchored nearby and one careful count from on shore. In addition, there are records of a few random sightings of Weddell seals around the coast of the island. The most accurate count was made when the seal boat *Petrel* was forced to lie in Larsen Harbour (Fig. 1) for shelter on 2 November 1964. 59 animals were seen ashore: 27 pups and 32 adults. Of the adults, 20 were females and six were males; it was not possible to determine the sex of the remaining animals without causing undue disturbance. In addition, there was a number of dead animals, comprising six pups and one adult female. Thus the total number of pups born in 1964 was at least 33. Some of the adult animals were probably at sea, as the observations were made in late afternoon and on previous occasions it had been noticed that the animals tended to leave the beach in the evenings.

The pups varied a great deal in size and, presumably, age. The smallest had only just started to moult their natal coats, while others had fully moulted. According to Lindsey (1937), the moult of natal coat commences at about 14 days and is complete by about 44 days after birth. On the basis of these estimates, the first pups would have been born in mid-September and the smallest pups would have been about 2 weeks old. Many of the pups, including oldest and youngest, were observed suckling and a few larger ones were seen to be lying apart from the adults.

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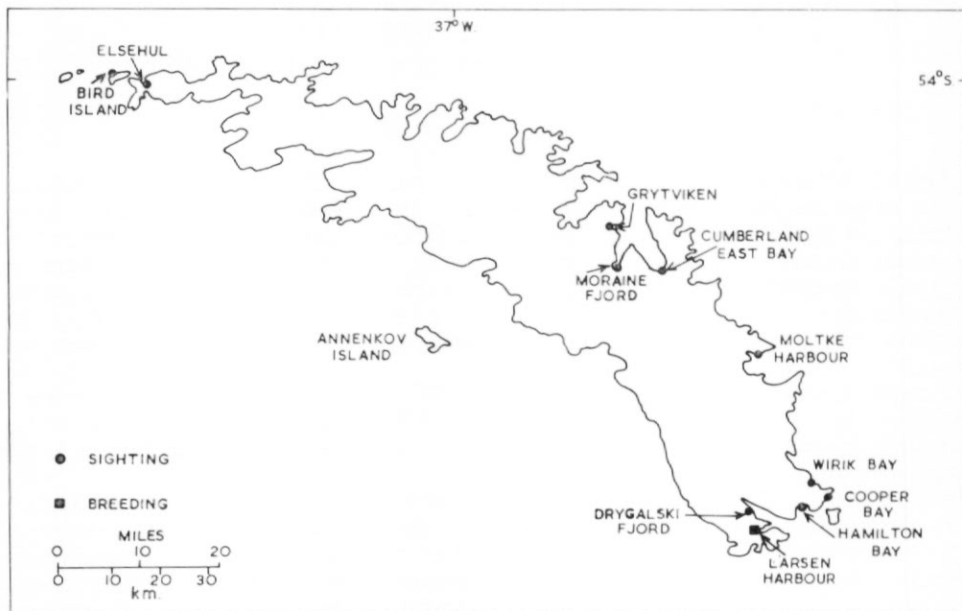


Fig. 1. Sketch map of South Georgia showing the breeding locality of Weddell seals and sightings during the period 1925-65 (see Table II).

The colony was spread along a narrow beach to the south side of Larsen Harbour which is probably the only place where they can haul ashore readily, although occasionally a few animals have been seen on a small rocky platform on the north side of the beach. Some of the animals were lying on snow and ice at the back of the beach, while others seemed to prefer the narrow rocky beach next to the water's edge.

Previous counts of the colony (Table I) in Larsen Harbour were made by Wilson, who reported about 30 seals including pups on 13 September 1914. Matthews (1929) reported between 20 and 30 animals, and he said that pups were born in January, although he found

TABLE I. COUNTS OF WEDDELL SEALS IN LARSEN HARBOUR, SOUTH GEORGIA

Date	Adult male	Adult female	Pups	Total	Author
13 September 1914	—	—	—	c. 30	Wilson (1914)
January 1925	—	—	—	20-30	Matthews (1929)
January 1947	—	—	—	5	Rankin (1951)
September 1956	7	32	25 (+1 dead)	65	Bonner (1958)
October 1958		35	26 (+1 dead)	62	Bonner (1958)
4 October 1961	—	—	—	c. 12	Vaughan
16 October 1961		13	4	c. 17	Vaughan
2 November 1963		11	—	11	Vaughan
6 October 1964		—	—	c. 45	Vaughan
2 November 1964	6	20	27 (+6 dead)	59	Vaughan

skeletons of pups in November. Rankin (1951) visited Larsen Harbour for a few days in January 1947 when he saw no more than 30 Weddell seals in the area. Bonner (1958) made a careful count in September 1956 and recorded seven adult males, 32 females and 26 pups including one dead, a total of 65 animals.

In addition to the small breeding colony in Larsen Harbour, there are always some Weddell seals to be seen on a beach on the south-west side of Drygalski Fjord. Up to a dozen animals have been seen but it has not been possible to confirm breeding in this group. Apart from these two groups, Weddell seals are not seen regularly on South Georgia but stray animals have been seen in several bays mostly along the south-east coast (Table II; Fig. 1).

TABLE II. SIGHTINGS OF WEDDELL SEALS AROUND SOUTH GEORGIA (FIG. 1)

Date	Place	Seals seen	Author
? June 1925	Grytviken	Yearling animal	Matthews (1929)
? October 1925	Elschul	Adult ♀, pregnant	Matthews (1929)
? January 1955	Cooper Bay	3 adults	Sutton (1957)
13 January 1960	Bird Island	1 adult ♂ (9 ft.; 2·7 m.)	Personal communication from W. N. Bonner
20 September 1962	Grytviken	Young male	Vaughan
16 August 1963	Cumberland Bay	Adult ♀	Vaughan
? September 1964	Moraine Fjord	Adult ♀	Vaughan
2 October 1964	Wirik Bay	2 adult ♀	Personal communication from A. B. Dickinson
2 October 1964	Cooper Bay	3 adult ♀	Personal communication from A. B. Dickinson
2 October 1964	Hamilton Bay	2 adults	Personal communication from A. B. Dickinson
3 March 1965	Moltke Harbour	1 adult	Down (1965)

These observations suggest that the Weddell seal colony in Larsen Harbour has increased slightly over the past 50 years with about 30 pups born each year recently.

The largest number of pups seen at any one time is 33. An average life span of 9 years, which has been suggested by Mansfield (1958), is likely to be a low estimate. If it is correct, the Weddell seal population of South Georgia is unlikely to exceed 85.

Pupping in South Georgia, which starts in mid-September and continues for about 1 month, is about 1 month later than in the South Orkney Islands, but about the same as in the Bay of Whales.

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REFERENCES

- BERTRAM, G. C. L. 1940. The biology of the Weddell and crabeater seals: with a study of the comparative behaviour of the Pinnipedia. *Scient. Rep. Br. Graham Ld Exped.*, **1**, No. 1, 1-139.
- BONNER, W. N. 1958. Exploitation and conservation of seals in South Georgia. *Oryx*, **4**, No. 6, 373-80.
- DOWN, S. 1965. Zoology. (In *Combined Services Expedition to South Georgia. Report to the Ministry of Defence. Appendix 4*, 8-10.) [Unpublished.]
- LINDSEY, A. A. 1937. The Weddell seal in the Bay of Whales. *J. Mammal.*, **18**, Pt. 2, 127-44.
- MANSFIELD, A. W. 1958. The breeding behaviour and reproductive cycle of the Weddell seal (*Leptonychotes weddelli* Lesson). *Falkland Islands Dependencies Survey Scientific Reports*, No. 18, 41 pp.

- MATTHEWS, L. H. 1929. Natural history of the elephant seal. *'Discovery' Rep.*, **1**, 233-56.
- RANKIN, N. 1951. *Antarctic isle*. London, Collins.
- SCHEFFER, V. B. 1958. *Seals, sea lions, and walruses*. London, Oxford University Press.
- SUTTON, G. 1957. *Glacier island: the official account of the British South Georgia Expedition 1954-1955*. London, Chatto & Windus.
- WILSON, J. I. 1914. Report by the stipendiary magistrate on sealing operations conducted at South Georgia during the season ended 30 September 1914. *Enclosure to Falkland Islands despatch No. 146*. [Unpublished.]