

OBSERVATIONS ON THE SEALS OF ELEPHANT ISLAND, SOUTH SHETLAND ISLANDS, 1970-71

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ABSTRACT. Several thousand elephant seals haul out at Elephant Island in the summer and breeding was confirmed by the presence of pups of the current season. Seven elephant seals tagged at South Georgia and one from the South Orkney Islands were seen. Evidence of fur seal breeding was obtained and at least 19 pups were born in the group this season at two locations. Over 300 fur seals, mainly adult bulls, were seen during the summer, the majority in four large concentrations. Other species are uncommon but observations were made on leopard seal hunting behaviour.

A GENERAL account of the Joint Services Expedition to Elephant Island has been given by Burley (1972). The expedition was on Elephant Island from 10 December to 25 March and almost all the coastline of the island was visited at least once during the expedition. This coastline is extremely rugged, consisting in the main of alternating glacier snouts and steep rock cliffs of considerable height. The foreshore is generally rocky and the beaches when they occur are usually small and of glacial sand. A few inaccessible stretches of coast (shown in Fig. 1) were not examined. However, no appreciable numbers of seals could have been present in these areas. Clarence Island was largely unexamined for seals and the coastline of the other small islands was examined only cursorily.

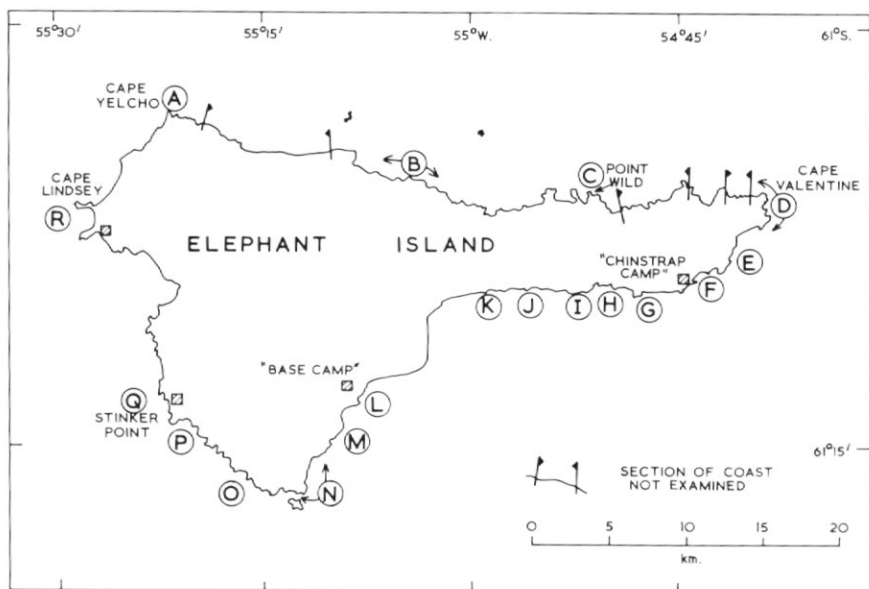


Fig. 1. Elephant Island showing coastal areas for seal counts.

The expedition moved around the island and as each section of the coast was first visited seal counts were made and subsequently repeated whenever possible. When large numbers were encountered, hand-tally counters were used. If identifiable, seals in the water were included and as experience was gained the sexes were recorded separately when possible. Repeated counts on small beaches showed considerable daily variations, not necessarily related to weather and brash-ice conditions, and there were also seasonal variations in numbers hauled out.

Elephant seals (Mirounga leonina)

The results of the counts are shown in Tables I and II. In some areas only one count was made and in most areas the counts were sporadic, but longer series of counts were made at Stinker Point and at "Base Camp" (areas Q and L, respectively). These give an indication of the relative numbers of bulls and cows hauled out. At "Base Camp" total numbers did not vary significantly but the proportions of the sexes did. Numbers of cows arrived in early January as bull numbers were decreasing, and in February and March the cow population declined as the second peak in bull numbers developed (Fig. 2). This pattern is similar to that described by Laws (1956, fig. 8) for the South Orkney Islands. It was not possible to obtain a reliable estimate of how long the seals were hauled out and therefore no estimate for the total number of individuals hauling out during the summer. A total in excess of 6,000 seems likely from consideration of the actual counts, and the separate maxima for bulls and cows (Fig. 1). My impression was that considerably more adult bulls were hauled out than adult cows, in contrast to Laws' (1956) findings in the South Orkney Islands.

TABLE I. ELEPHANT SEAL COUNTS, 1970-71

Area	Date	Bulls	Cows	Total	Comments
A	27 January			20	On small beach just east of Cape Yelcho
B	29 January	15	69	95	At five small headlands; concentrated mostly at the west one
C	2 March			22	Mostly cows. At Point Wild
D	8-9 February	1		4	Cape Valentine area
E	5 March	3	1	4	Walker Point
	17-20 February			2	
F	28 December			23	Beach only covered
	5-6 February			40	Beach and rocks covered
	13 February		17	17	Beach and rocks covered
	20 February			21	Beach and rocks covered
G	10-17 February		2	2	First headland to west of F
H	29 December			107	Some cows but mostly bulls. Muckle Bluff beach
	16 February	23	23	46	
	27 February			50	Approximate count
I	28 February			80	Approximate count. First beach to west of H
J	5 February			30	Approximate count. First beach to west of I
K	10 December			30	No cows positively identified. Beach below first large bluff to east of main glacier
	27 December			47	Some cows
	4 February	2	1	3	
	16 February			14	
	28 February-10 March			15-40	On one occasion none seen
L					See Table II
M	13 December			40	Coast west of L
	18 December			46	No cows positively identified
N	17 December			138	No cows positively identified
O	15 December			190	No cows positively identified
P	6 January			56	Some cows. Small beaches 8 km. south of Stinker Point
Q	4 January			1,636	Mostly bulls but a lot of cows arrived by 9-10 January
	14 January	635	800	1,435	A lot less bulls
	18 January	480	970	1,450	
	21 January			1,383	More cows than bulls
	21 March	1,480	80	1,560	Only juvenile cows
R	20-26 January	57	87	166	A total count of all beaches around Cape Lindsey

See Fig. 1 for location of various areas.

About 100 elephant seals were reported on one beach in the Seal Islands on 13 December.

TABLE II. ELEPHANT SEAL COUNTS: "BASE CAMP" BEACHES—AREA L

<i>Date</i>	<i>Bulls</i>	<i>Cows</i>	<i>Total</i>	<i>Comments</i>
<i>1970</i>				
11 December			320	No cows positively identified
13 December			310	No cows positively identified
18 December			278	No cows positively identified; much brash ice inshore
19 December			283	Less brash ice
20 December			304	A few cows identified
25 December			283	
<i>1971</i>				
2 January			202	Large numbers in the water; still mostly bulls
3 February	107	170	277	
14 February	116	134	250	
23 February	241	73	314	Influx of adult bulls
28 February	260	60	320	
12 March	293	30	323	Many young bulls
15 March	290	22	312	Many young bulls
16 March	230	24	254	
18 March	241	30	271	
20 March	233	14	247	
23 March	225	25	250	More seals in water than usual
24 March	237	15	252	
25 March	216	14	230	

When hauled out, cows remained on land in their pools and wallows until the moult was complete, whereas the bulls moved in and out of the sea. Some bulls which were painted for recognition or had distinctive features were seen to move over the 3 km. of beaches at Stinker Point, but others were always found ashore in the same location. Closely packed pods of up to 300 seals were counted, usually of one sex with only a few of the other sex in them; juveniles were not usually found among the pods of adults. Although the amount of brash ice close inshore showed great variability, the number of seals hauled out was not obviously affected, nor did weather conditions appear to influence the number hauled out. Sand throwing (Laws, 1956) was often seen. Tracks were occasionally seen in the snow some distance inland; on one occasion they were 500 m. from the shore and 100 m. above sea-level, when they were still going inland.

Breeding was over by the time we arrived, but a number of pups born during the recent season were seen in December and January, the smallest about 1.3 m. long on 10 December. Attempts were made to measure lengths of the living animals. Although the results are

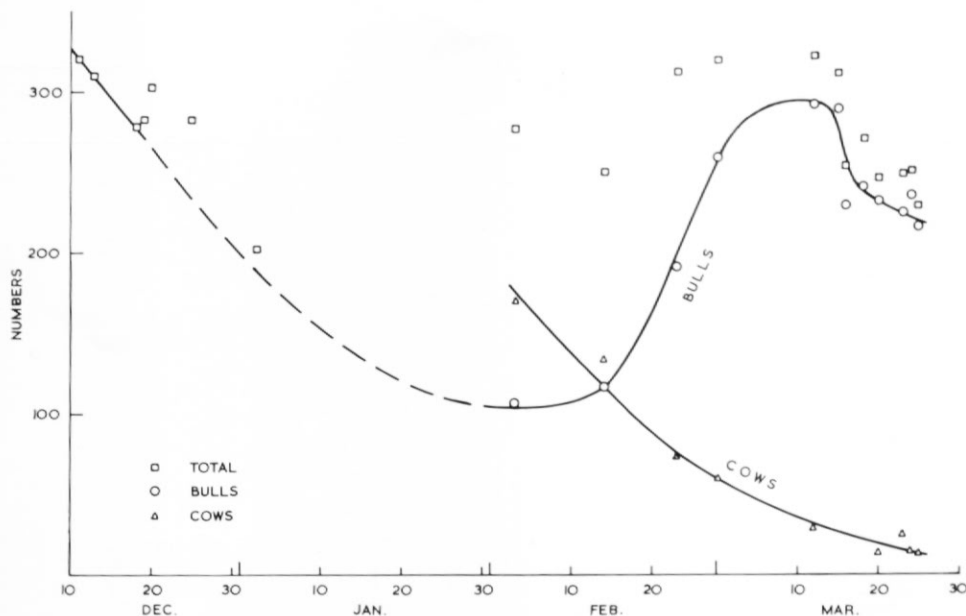


Fig. 2. Graph showing counts of elephant seals, December to March; Elephant Island, "Base Camp" beaches.

approximate, they indicate that all age classes were present; the largest bull measured 5.5 m. and the largest cow 3.4 m. (nose to tail in a straight line).

On occasion elephant seals and Weddell seals were lying touching each other, but elephant seals avoided other species when on the move and even gave way to quite small fur seals.

Eight different tagged elephant seals were seen and we were able to reach and touch seven of the tags but because the numbers were hidden the tag numbers could be read in only three cases; details are given in Table III. The others were bulls of 3.4-4.3 m. length bearing tags in the left (4) or right (1) fore flipper; from the nature of the tags and their location these were almost certainly tagged at South Georgia between 1957 and 1965. The recovery of the 3 year old cow, tagged as a pup at Signy Island, South Orkney Islands, was particularly interesting. These records add to the recoveries listed by Dickinson (1967).

TABLE III. DETAILS OF TAGGED ELEPHANT SEALS SEEN AT STINKER POINT; ALL WERE TAGGED AS PUPS

Tag number	Tagged at	Date tagged	Date recovered	Remarks
H 1916	Signy Island, South Orkney Islands	6 Nov. 1967	4 Jan. 1971	Female
21036	Undine Harbour, South Georgia	5 Nov. 1963	7 Jan. 1971	Male
21127	Undine Harbour, South Georgia	5 Nov. 1963	21 Mar. 1971	Male

Leopard seals (*Hydrurga leptonyx*)

No estimate of total numbers is possible but we sighted 32 representing possibly 15 different individuals. In late December a watch was kept at the largest chinstrap penguin (*Pygoscelis antarctica*) rookery below the "Base Camp" for one 24 hr. period. A pool in the rocks, traversed by a stream of penguins entering and leaving the sea, appeared to provide a convenient hunting

area for three leopard seals. In this period 20 penguins were definitely caught and eaten by the seals operating in turn. For short periods the striking rate was one every 15 min. The seals may have also fed elsewhere along the beach, though nowhere else were there such easy targets. The penguin eggs had just begun to hatch and leopard seals were only seen in this area from 25 December to 2 January. The only other occasion when a prolonged watch was kept was on Clarence Island in March; one leopard seal was seen to kill seven chinstrap penguins in a period of 5 hr. The hunting behaviour invariably followed a definite pattern. The seal approached the shore openly at the surface, until near the rocks, when it dived and completed its approach under water. The capture took only a few minutes and the seal then moved out 50–200 m. from the shore, where the bird was shaken violently at the surface for 3–10 min. while being consumed.

No encounters between leopard seals and other species were observed, nor any intra-specific encounters.

Crabeater seals (Lobodon carcinophagus)

This was by far the least common species and single individuals were seen on only five occasions, only once after mid January.

Weddell seals (Leptonychotes weddelli)

These were present in small numbers on most beaches and in all at least 150 were seen ashore, the sexes equally represented. We were too late for the pupping season and there was no evidence of breeding, but animals small enough to be pups of the year were seen. Concentrations, of about 40 in each case, were seen in the vicinity of Cape Lindsey in January and Cape Valentine in February.

Fur seals (Arctocephalus gazella)

Bonner (1968) has summarized the re-colonization by fur seals of islands of the Scotia Ridge. During the present expedition one breeding colony was found on the largest of the Seal Islands during a cursory examination on 13 and 14 December. On one beach there were at least 12 small bull, cow and pup groups with one or two cows in each totalling 17 bulls, 24 cows and 16 pups. Another beach contained five bulls.

At Cape Valentine, on 9 February, three pups were seen among a group of over 100 adults most of which were undoubtedly bulls. No cows were positively identified. At Point Wild, a similar group of 80–100 animals was found in late February and early March; no pups were seen and no cows identified. At Cape Lindsey 30 bulls were seen in February. In addition to these concentrations, fur seals were seen frequently, either singly or in small numbers, around most of the island from mid January onwards. They were almost invariably young or adult bulls which rarely stayed ashore for more than a few hours. These sightings were more frequent towards the end of the expedition. At the large Stinker Point beaches, where fur seals were only occasionally seen in January, 60 young bulls were ashore in late March.

No fur seals were seen on other islands except for Cornwallis Island where two were seen in December and six bulls in March. However, the other islands were only visited briefly and more fur seals may have been present. No tagged fur seals were seen.

This appears to be the first record of this species breeding in the Elephant and Clarence Islands group in recent years, although Aguayo (1970) reported about 257–297 fur seals from Elephant, Cornwallis and Clarence Islands and about 200 from Livingston Island, while Erickson and others (1970) counted 206 in other parts of the South Shetland Islands.

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