

NEW RECORDS OF CRABEATER SEALS (*LOBODON* *CARCINOPHAGUS*) FROM SOUTH AFRICA

By

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(With 1 figure and 1 table)

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ABSTRACT

Information is provided on nine records of the crabeater seal in South Africa since 1968 and one previously recorded stranding in 1957. They occurred on the south and east coasts between False Bay and East London. Most of the strandings occurred during summer months, and most were of seals in their first year. It is suggested that these seals come from the western Atlantic sector of the Antarctic pack-ice, south-west of South Africa.

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INTRODUCTION

The crabeater seal *Lobodon carcinophagus* is a pelagic species with a circum-polar distribution in antarctic waters associated with the drifting pack-ice. On several occasions, however, vagrants have been recorded from islands in the Southern Ocean, Australia, Tasmania, New Zealand, South Africa and the Atlantic coast of South America. These records have been mapped by Erickson & Hofman (1974) as far north as latitude 30°S, though the locality of the northernmost record is Pontal, Rio de Janeiro, at latitude 23°S (Vaz Ferreira 1965).

Since Courtenay-Latimer (1961) reported the first South African specimen of a crabeater seal, nine more animals have been recorded on this coast. Details of all these records are reported here and their localities shown in Figure 1.

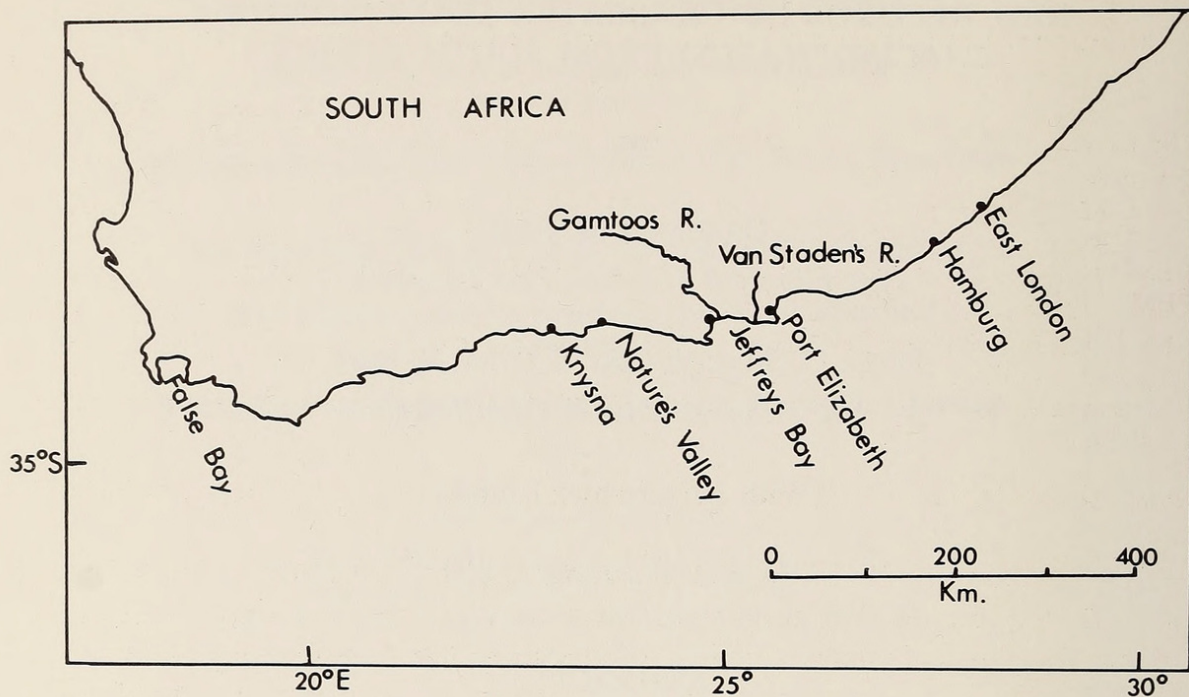


Fig. 1. Map showing the localities of crabeater seal strandings in South Africa.

RECORDS

On 22 July 1957 a female seal hauled out on the beach at Hamburg ($33^{\circ}17'S$ $27^{\circ}30'E$) (Courtenay-Latimer 1961). The authors have determined the condylo-basal length (CBL) of the skull as 241 mm, and the standard length of the mounted specimen on display at the East London Museum (ELM 572) as 1,69 m.

On 17 March 1968 the decomposed carcass of a crabeater seal was collected between the Gamtoos and Van Staden's River mouths ($33^{\circ}57'S$ $25^{\circ}08'E$). The skeleton was collected for the Port Elizabeth Museum (PEM 1513/101), but the skull has subsequently disappeared. The seal was not measured, but comparison of the length of its articulated vertebral column with that of another specimen (PEM 1519/25; 1,23 m) suggested that the standard length of this animal was about 1,9 m.

A male crabeater seal hauled out at The Strand, False Bay ($34^{\circ}07'S$ $18^{\circ}50'E$) on 26 December 1971, and was killed by bystanders the following morning. External measurements of this animal (and another three animals that were measured in a standard manner) are provided in Table 1. Each testis weighed 7,5 g, and measured 45×17 mm and 40×18 mm. The skin and skeleton are in the collections of the South African Museum, Cape Town (SAM-36357). The viscera and eyes are in the collections of the Sea Fisheries Branch. The stomach of this seal contained approximately 150 g of gravel and sand, and 15 g of algae identified by R. H. Simons (Sea Fisheries Branch) as *Dictyota intricata*, *Ploc-*

TABLE 1

Measurements of four crabeater seals that stranded on the coast of South Africa

Specimen number	Sex	Mass (kg)	Standard length (m)	Flipper length ¹		Axillary girth (m)	Thickness ² blubber and skin (mm)	Skull CBL (mm)
				Nov it. front (m)	hind (m)			
SAM-36357	M	77,3	1,66	0,33	0,32	1,01	24	fragments
SAM-36358	F	99,1	1,77	0,33	0,33	1,10	19	248
³ PEM 1518/42	F	64	1,67	0,33	0,33	—	—	247
³ PEM 1519/25	F	148	2,08	—	—	—	—	257

¹ Measured from anterior insertion of flipper to tip of first claw.² Measured at the posterior end of the sternum.³ Measured at time of death. On 6 February 1974 PEM 1519/25 measured 1,88 m in standard length.

mium corallorhiza and *P. rigidum*, all of which are common sublittorally in False Bay.

On 19 January 1972 a female crabeater seal came ashore at Kalk Bay (34°07'S 18°27'E) and was euthanized. External measurements are provided in Table 1. The skin and skeleton are in the collections of the South African Museum (SAM-36358). The stomach contained 30 small stones with a total mass of 5 g and a large number of tiny stones, sand and shells totalling 170 g. The shells have been identified by B. Kensley (South African Museum) as *Oxystele variegata*, *Turritella* sp. and *Burnupena* sp., all of which are common in South African waters.

A female crabeater seal was collected alive on 28 January 1973 at Jeffreys Bay (34°04'S 24°56'E) and taken to the Port Elizabeth Oceanarium where it was maintained on a fish diet (Ross *et al.* 1976). The seal was measured (Table 1) when it died on 25 April 1973 in an emaciated condition. The skull and ovaries are preserved in the Port Elizabeth Museum (PEM 1518/42).

On 26 January 1974 a female crabeater seal was collected at Seaview (34°03'S 25°30'E), near Port Elizabeth. It was also kept at the Port Elizabeth Oceanarium (Ross *et al.* 1976). It died on 15 April 1974 when it was measured (Table 1). The complete skeleton and ovaries are preserved in the Port Elizabeth Museum (PEM 1519/25).

A crabeater seal died on 15 April 1974 some 36 hours after it had been first reported at Nature's Valley (33°58'S 23°33'E). The total length including the hind flippers was 2,11 m and the maximum girth round the foreflippers and chest was 1,06 m. The seal had a mass of 85,2 kg. The fragmented skull and some vertebrae are preserved in the collections of the Tsitsikama Coastal National Park (TNP/B/1974/1). Comparison with the measurements of the captive animal that stranded at Seaview in 1974, which on 6 February 1974 had a standard length of 1,88 m and a total length including hind flippers of 2,10 m, suggests that the standard length of this seal was approximately 1,9 m.

A crabeater seal, thought to be a female, hauled out at Igoda (33°06'S 27°47'E), 17 km south-west of East London, on 11 January 1975. It survived in captivity for two days. The mounted skin with skull inside has been prepared

for display at the East London Museum (ELM 916). The standard length of the mounted animal is 1,68 m.

On 26 January 1975 a crabeater seal of unknown length and sex hauled out at Jeffreys Bay and died after several hours. Colour photographs in the files of the Port Elizabeth Museum show that the animal was unscarred. It was estimated by observers and from the photographs to be less than 2 m in standard length. No parts of the carcass were saved.

On 28 January 1975 a crabeater seal was found on Leisure Island, in Knysna Lagoon (34°05'S 23°03'E) where it remained for the day before swimming away in the late afternoon. The animal was approximately 2 m in total length and unscarred (M. J. Clarke *in litt.*). Two photographs of it are on file in the Port Elizabeth Museum.

DISCUSSION

Though few observations have been made of new-born crabeater seals, available records indicate that pups are born between the middle of September and early November at approximately 1,35–1,5 m in standard length (King 1957; Øritsland 1970*b*; Corner 1972). From an analysis of the standard length frequencies of 292 crabeater seals collected in the Antarctic between the months of January and April, Laws (1958) concluded that peaks of 1,88 m and 2,03 m represented the modal lengths of seals aged $\frac{1}{2}$ year and $1\frac{1}{2}$ years, respectively. Further, sexual maturity in females is attained at a standard length of 2,06 m and physical maturity in both sexes at 2,26 m. By comparison, the standard lengths of eight of the South African specimens for which reliable data are available (ranging from 1,66 to 1,9 m) indicate they were in their first year of life. Because the other two animals were not measured, their age-class cannot be determined, but it seems likely that they were considerably smaller than physically mature animals.

Laws (1958) determined the ages of crabeater seals from the number of dentine layers seen in a transverse section of a tooth when viewed by reflected light in water. Sections of upper canines of PEM 1518/42, SAM-36357 and SAM-36358, and lower canines of ELM 572 and PEM 1519/25 all showed a single, incomplete postnatal dentine layer, confirming that these five animals were less than 1 year old.

The origin of these seals is unknown. It is possible that they came from the nearest pack-ice some 2 000 km to the south of South Africa, though the West Wind Drift would have tended to drift the animals eastwards as they moved northwards from this sector of the Antarctic. It seems more likely that they came from west of the longitude of South Africa, possibly from the western Atlantic sector of the Antarctic, where crabeater seals are particularly abundant (Erickson & Hofman 1974). There the northern part of the pack-ice lies within the influence of the West Wind Drift, which would assist seals in their passage. Even so, the current could provide a drift of only some 2 000 km over a period of four

months, for its speed is about 0,7 km/h (Hydrographic Department 1961). Thus it seems that a recently weaned crabeater seal moving from the pack-ice to South African waters would have to swim actively in order to complete the journey in three or four months.

The South African records are markedly seasonal, with eight of them occurring between late December and early March, while six of these occur in January alone. The seasonal occurrence in the summer months contrasts with the statement by Scheffer (1958) that crabeater seals move outward from Antarctica in autumn. It also contrasts with the seasonal occurrence of records in Australia, where only two of the six animals hauled out during summer (one each in December and January) and the other four hauled out between June and September (Anon. 1946; Hall 1903; Ingham 1960; Le Soeuf 1929; Troughton 1965).

The only dated strandings of crabeater seals in the available literature for New Zealand and South America were for the months of April (Oliver 1921) and June (Berg 1898), respectively.

By comparison it is interesting to note that a seasonal influx of crabeater seal pups was observed in December and January at the Bay of Whales in Antarctica by Lindsey (1938), and several other authors have recorded the seasonal movement of crabeater seals towards the continent in midsummer (see Øritsland 1970a), though these seals are not always young animals (Bertram 1940). The timing of these two movements suggests that they are related: as seals begin to move southward with the retreat of the pack-ice in summer, an unknown proportion moves northward and eastward with the West Wind Drift.

The few South African records must be a small proportion of the number of crabeater seals reaching these waters, for the geographical distribution of the present records reflects that of interested biologists. Further, as South Africa lies on the northern edge of the influence of the West Wind Drift, those animals reaching South Africa can be only a fraction of those that do not land, but pass to the south.

It is likely that few of these animals survive. The presence of stones, sand and other indigestible matter in the stomachs of two animals suggests that the seals were unable to fend for themselves in South African waters. They may constitute a small but potentially significant part of total pup mortality. Studies of the movements of pups using radio telemetry during the break-up of the pack-ice to determine whether pup dispersal occurs randomly or in a fixed direction would assist in assessing the potential size of emigration from the population to the north and the east.

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