

Ringed seal *Phoca hispida* fright behaviour caused by walrus *Odobenus rosmarus*

IAN GJERTZ



Gjertz, I. 1990: Ringed seal *Phoca hispida* fright behaviour caused by walrus *Odobenus rosmarus*. *Polar Research* 8, 317–319.

Other marine mammals tend to avoid walruses. The present paper describes two incidents of avoidance behaviour displayed by ringed seals in the presence of a walrus.

Ian Gjertz, Norsk Polarinstitutt, P.O. Box 158, N-1330 Oslo Lufthavn, Norway; February 1990 (revised April 1990).

Walruses (*Odobenus rosmarus*) are at the top of the interspecific social hierarchy among northern pinnipeds (Hediger 1955, in Fay 1960, 1981). They are omnivorous and forage mainly on benthic prey, but it is well documented that some walruses eat other marine mammals (Fay 1960, 1981; Lowry & Fay 1984). It is a matter of dispute whether walruses actively prey upon these, or merely are carrion feeders (Fay 1960, 1981). It has only recently been verified in the scientific literature that walruses actively catch and kill mammalian prey (Timoshenko & Popov 1990). Marine mammals are known to desert or avoid areas occupied by walruses (Collett 1911–12; Freuchen 1921; Pedersen 1930, 1951; Fay 1960), but it is not known whether this is caused by a predator-prey relationship or is due to interspecific dominance (Pedersen 1951; Fay 1960, 1981).

Edgeøya, in Svalbard, is historically an area of walrus occupation. Andrétangen (Fig. 1) is a peninsula on southern Edgeøya, along which there are some islands. The narrow sound between Andrétangen and the closest island is fairly shallow and has strong tidal currents. The benthic fauna in the sound is obviously abundant, as can be deduced by the eiders (*Somateria mollissima*), bearded seals (*Erignathus barbatus*), belugas (*Delphinapterus leucas*) and walruses that feed there. At the northern entrance to the sound on the Andrétangen side there is a beach used by walruses to haul out. The waters off this beach

are shallow with many large rocks which are submerged during high tide.

At Andrétangen in 1987 I witnessed two incidents of different ringed seals (*Phoca hispida*) apparently frightened by the presence of a walrus.

On 31 July, while observing the haul-out beach at 2255 hr and mid tide, I noticed a young walrus, which according to its small teeth, was an estimated 4 years old, swimming northwards along the shore of Andrétangen towards the haul-out beach. At the same time a ringed seal (estimated weight 40 kg) was approaching along the coast in the opposite direction. When they were still about 100 m apart, the ringed seal appeared to become aware of the walrus because it stopped swimming and lay still for a few seconds. It then swam straight to a nearby rock and climbed, except for its hind flippers, out of the water. All the time it looked in the direction of the swimming walrus. It remained on the rock until the walrus had passed, at a distance of 30–40 m, and surfaced some 60 m farther up the coast. The ringed seal then carefully slid backwards and sideways into the water and continued swimming southwards out through the sound. The walrus swam up to the area in front of the haul-out beach and remained in the shallow water there until 2320 hr when it swam offshore and started diving, apparently feeding. This activity was continued until 2350 hr. While this was going on, a second ringed seal came swimming southwards along the coast heading for the sound. The seal was observed for

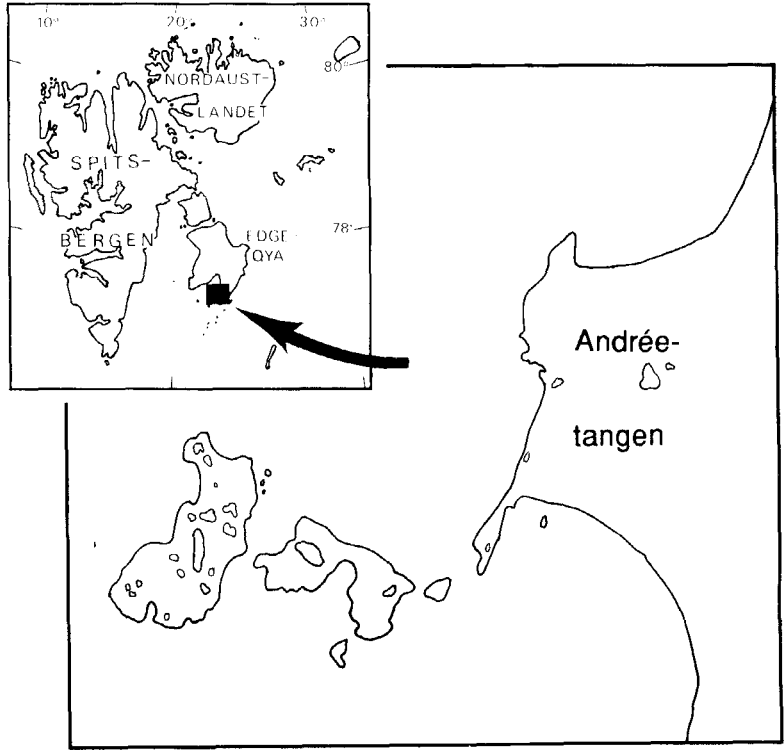


Fig. 1. Map of Andrécangen (Edgeøya), with map of Svalbard enclosed in upper left corner.

about 10 minutes, swimming largely at the surface making short regular dives. When it was about 150–200 m away from the walrus, its mode of swimming suddenly changed, as its surfacing time was reduced to a minimum. The seal just shoved its nose above the water, made one or two short breaths and submerged. The ringed seal surfaced 4 times while in the area where the walrus was and surprisingly it only surfaced while the walrus was at the surface. They passed each other at a distance of approximately 60–70 m, the seal being closer to shore. When the seal was about 150 m past the walrus, it resumed its former mode of swimming and was seen swimming into the sound.

Though little evidence exists to show that walruses catch and kill live seals, there are indications that this does occur. The well known sealer Waldemar Kraemer, in his unpublished diary kept at the Norwegian Polar Research Institute library, claims to have seen this happen. Hantzsch (1977), from travels in Baffinland 1909–1911, writes that his eskimos repeatedly had seen walruses catch seals in the water, embrace them and kill them. Iversen (1927) mentions seeing a walrus surfacing with a harp seal (*Phoca groen-*

landica) pup between its flippers. When it saw people, the walrus let go of the pup, which was still alive. The pup had a hole in its gut and a large part of the intestines were hanging out. Timoshenko & Popov (1990) summarize several observations of walruses preying on seals in the White Sea. Seals obviously have reason to fear walruses.

Pedersen (1962) claims that the apparent fear that ringed seals exhibit towards walruses indicates that incidents of walruses preying on ringed seals are not infrequent. Pedersen (1934) writes that walruses catch seals by swimming underneath them and grabbing them with their foreflippers when the seal surfaces to breathe. One of the seals observed in this study did not surface while the walrus was submerged and this may indicate that the seal feared the submerged walrus. The observations reported here may indicate that ringed seals fear walruses and that they possibly through active and/or passive acoustic means detect their presence, direction and when they have surfaced.

According to Pedersen (1934), walruses also catch seals that are hauled out on ice. This is done

by suddenly surfacing in front of the seal and grabbing it. This has been supported by Timoshenko & Popov (1990). Phocid seals should be able to outswim walruses (Perry 1967), something that is also indicated by the swimming velocities given for walruses (Fay 1981) and the largha seal (*Phoca largha*) (Bigg 1981). If this is correct, it is surprising that the seal first observed did not stay in the water, where it should be more able to detect the whereabouts of the walrus, thus facilitating an escape.

If the ringed seals could detect the presence of the walrus, then the opposite may probably also be true. However, I could not notice any change in the behaviour of the walrus.

The two incidents observed at Edgeøya are too few to give more than an indication of how ringed seals react to walruses. The apparent increase in the number of walruses in Svalbard in recent years may provide ample opportunity to observe this in the future.

References

- Bigg, M. A. 1981: Harbour seal *Phoca vitulina* Linnaeus, 1758 and *Phoca largha* Pallas, 1811. Pp. 1–27 in Ridgway S. H. & Harrison, R. J. (eds.): *Handbook of marine mammals* 2. Academic Press, London. 359 pp.
- Collett, R. 1911–12: *Norges Pattedyr*. Aschehoug & Co. (W. Nygaard), Kristiania. 744 pp.
- Fay, F. H. 1960: Carnivorous walrus and some Arctic zoönoses. *Arctic* 13, 111–122.
- Fay, F. H. 1981: Walrus *Odobenus rosmarus* Linnaeus, 1758. Pp. 1–23 in Ridgway, S. H. & Harrison, R. J. (eds.): *Handbook of marine mammals* 1. Academic Press, London. 235 pp.
- Freuchen, P. 1921: Om hvalrossens forekomst og vandringer ved Grønlands vestkyst. *Vidensk. Medd. Dansk naturh. Foren.* 72, 237–249.
- Hantzsch, B. 1977: *My life among the Eskimos: Baffinland journeys in the years 1909–1911. Mawdsley Memoir III*. 395 pp. (translated by L. H. Neatby. University of Saskatchewan, Saskatoon).
- Hediger, H. 1955: *Studies of the psychology and behaviour of animals in zoos and circuses*. Butterworths, London. 166 pp.
- Iversen, T. 1927: Drivis og selfangst. *Aarsb. vedk. Norges Fiskr.* 1927 (1), 1–84.
- Lowry, L. F. & Fay, F. H. 1984: Seal eating by walruses in the Bering and Chukchi Seas. *Polar Biol.* 3, 11–18.
- Pedersen, A. 1930: Fortgesetzte Beiträge zur Kenntnis der Säugtier- und Vogelfauna der ostküste Grönlands. *Medd. Grønland* 77, 341–507.
- Pedersen, A. 1934: *Polardyr*. Gyldendalske Boghandel, Nordisk Forlag, Copenhagen. 150 pp.
- Pedersen, A. 1951: *Rosmarus, en beretning om hvalrossens liv og historie*. Gyldendal, Copenhagen. 98 pp.
- Pedersen, A. 1962: *Das Walross*. A. Ziemsen Verlag, Wittenberg Lutherstadt. 60 pp.
- Perry, R. 1967: *The world of the walrus*. Cassell, London. 162 pp.
- Timoshenko, Yu. K. & Popov, L. A. 1990: On predatory habits of Atlantic walrus. *The International Workshop on Population Ecology and Management of Walruses. 26–30 March 1990, Seattle, Washington, USA*.