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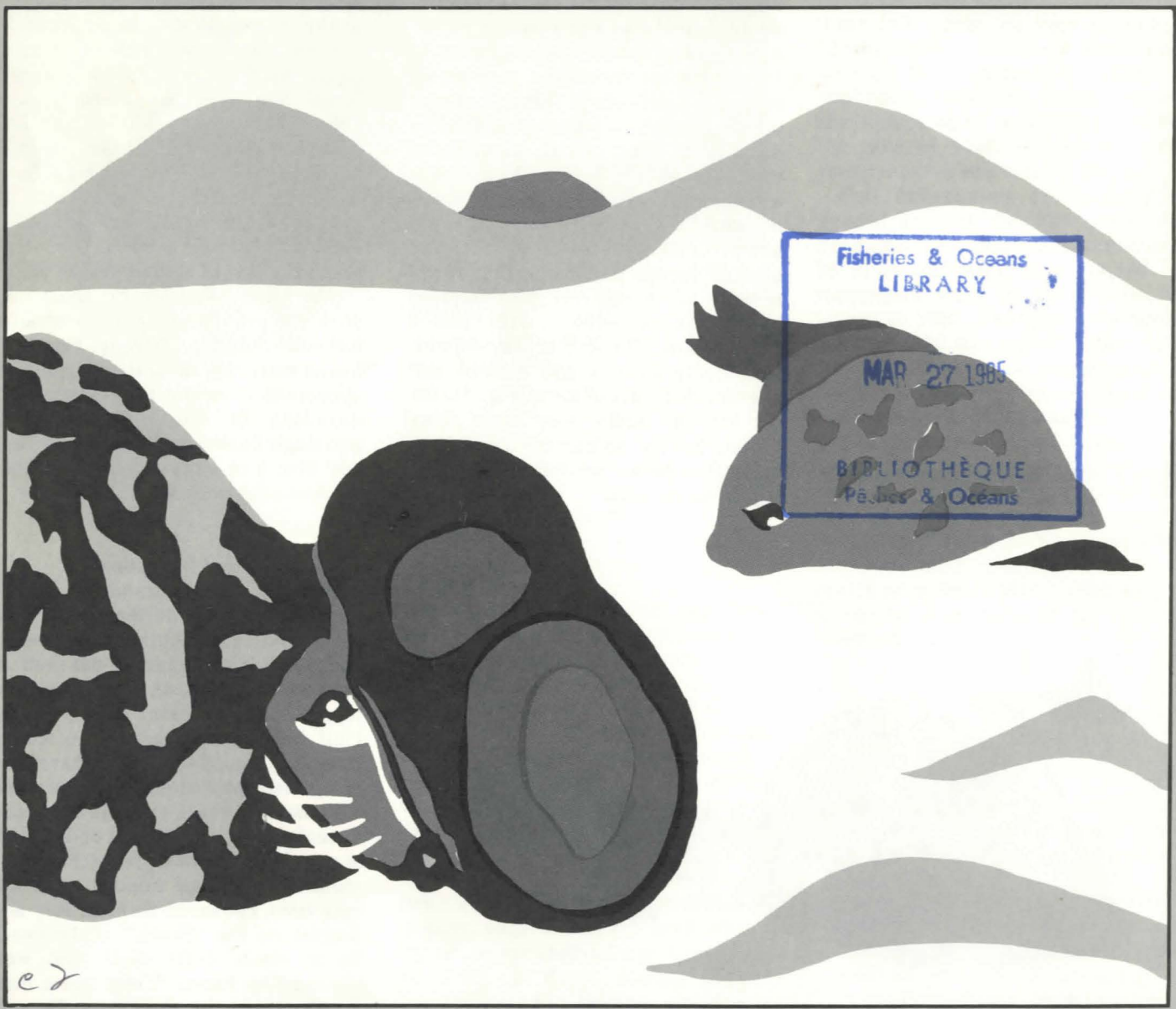
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# Underwater World

## The Hooded Seal



# The Hooded Seal

The Hooded or Bladdernose Seal (*Cystophora cristata*) is a large member of the hair seal family. While not the most numerous, it is individually the most prized quarry of the sealer among the North Atlantic ice floes.

## Description

Hooded seal adults are large and fierce-looking seals coloured with large black blotches on a grey background (Figs. 1,2). Males reach about 3 m in length and 400 kg in weight, females about 2.4 m and 270 kg. This sexual dimorphism tells us that we can expect a polygynous animal. One may often in fact find what appears to be a mated pair at the icefields in spring, but also often a female and pup surrounded at a distance by from one to seven males waiting to mate with her. The male has a remarkable proboscis (Fig. 2) which he alternately inflates with air and allows to collapse, evidently a feature used in display to other males. Additionally an orange-red nasal septum may inflate, balloon-like, out of one or other nostril. The skull is massive with formidable incisors and canines and peg-like post-canine teeth (Fig. 3). On the ice, the adults may make short lunges, but are no hazard to a reasonably active person who is careful not to trip as he retreats!

## Life History

Hooded seals, like harp seals, whelp in early spring on the pack ice. Unlike harp seals, which whelp at slightly different dates in different regions according to the onset of spring, hooded seals whelp in the second half of March, wherever they occur, with a peak about March 17. They whelp either in loose concentrations (patches) or in scattered families. The pup, the prized "blueback" of commerce, is a beautiful animal, its hair coat a lustrous blue-black on the back and a creamy white on the belly (Fig. 1), and weighs at birth about 20 kg. This coat, unlike the temporary white coat of the newborn harp seal, is the permanent coat of the first year. The hooded seal's foetal hair coat or *lanugo* is shed before birth. Apparently a loose hair coat shed *in utero* could interfere with breathing at birth, for it is swallowed by the late foetus and passed into the embryonic sac, so that one finds it on the ice in pellets 3 cm in diameter, about the size of a silver dollar piece.

The blueback, born on short-lived pack ice even later (in the Canadian icefields) than the whitecoat harp seal, has an extremely rapid suckling period, apparently no more than about eight days long. The female then deserts it, and single bluebacks can be met with in late March or early April before they too leave the pack ice for the water.

## Distribution and Migration

Some tens of thousands of hooded seals whelp off northeastern Newfoundland and southern Labrador, and about a thousand in the Gulf of St. Lawrence (Fig. 4). Pups have been tagged in this region, mostly in the Gulf because there is now no sealing there for hooded seals. They have been recaptured from shore fisheries around extreme southwest and off southeast Greenland between March and August at ages from one to six years (Fig. 4). A moulting patch of hooded seals has long been known to form in July and August on the "Storis" of Denmark Strait which drifts south and west around Kap Farvel. There was a hunt for these seals by ships from Norway until 1961.

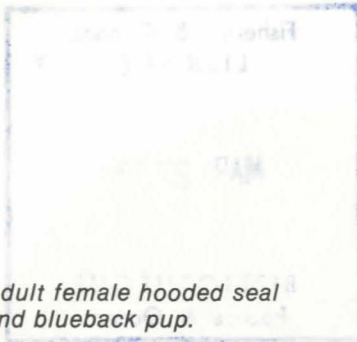


Figure 1. Adult female hooded seal and blueback pup.



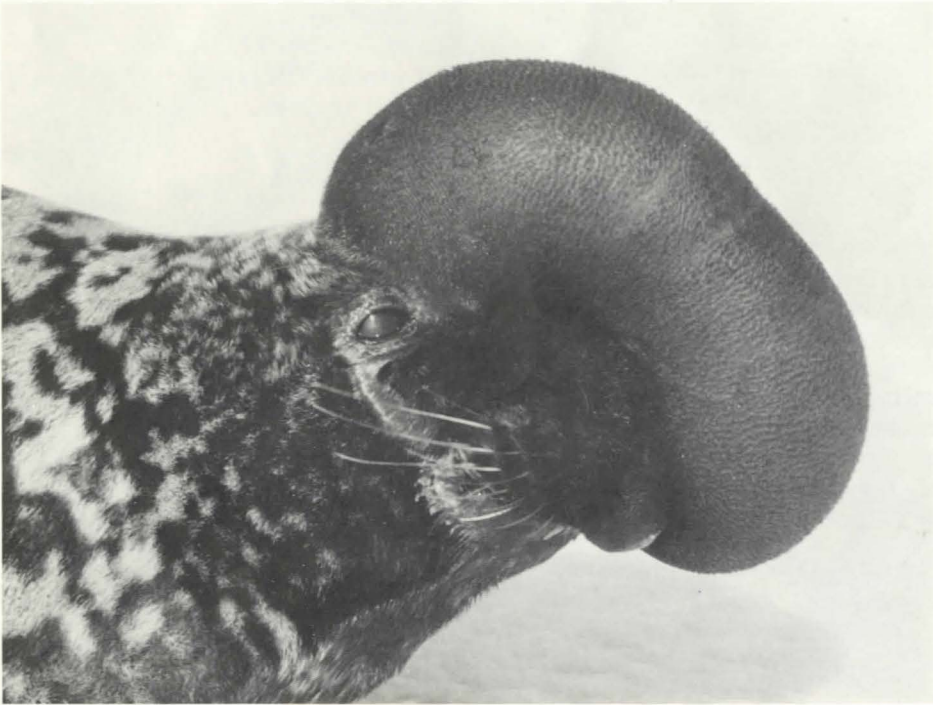


Figure 2. Adult male hooded seal with inflated proboscis.

Figure 3. Side view of skull and jaw of adult male hooded seal.



Besides whelping in the Newfoundland region, hooded seals, again together with harp seals, whelp on the ice around Jan Mayen Island (lat. 71°N, 8°W). Rather surprisingly, tags put on here have not been picked up from the hunts in south Greenland and Denmark Strait. But tags put on in Denmark Strait have been returned from Newfoundland, which confirms the relationship of these two areas of hooded seal distribution.

A third concentration of whelping hooded seals occurs at about 64°N on the pack ice in Davis Strait, about midway between Baffin Island and west Greenland. This patch, known to whalers in the 19th century, was rediscovered in 1974 from aerial reconnaissance by Canadian researchers, and has been photographed from the air in order to gain an estimate of numbers (about 10,000 pups). In March 1984 a major research program was mounted by Canadian and Danish researchers on hooded seals. Aircraft were chartered to census whelping patches of hooded seals in the Gulf, on the Front, and in Davis Strait. Ships equipped with helicopters were chartered to go to Davis Strait and the Front, and a land-based helicopter in the Gulf, in order to determine the sequence of whelping in time (in order to interpret the aerial census), to tag hooded seal pups, and in Davis Strait, to collect a sample of adult females to study their age frequency and reproductive rate. For this a special Greenlandic permit was obtained, since the whelping patch in Davis Strait is protected from sealing. Results, now being worked up, will greatly increase our knowledge of hooded seal numbers and biology.

Hooded seals show a great tendency to wander. After they leave the pack ice in spring most young animals move north, but animals in their first summer frequently remain in the Gulf or estuary of the St. Lawrence, and may move up river as far as Québec, Montreal, and even to the locks at Ste. Anne de Bellevue which lead to the Ottawa River. A few individuals wander south, having reached as far as Cape Canaveral, Florida, and in Europe as far south as Portugal. Although hooded

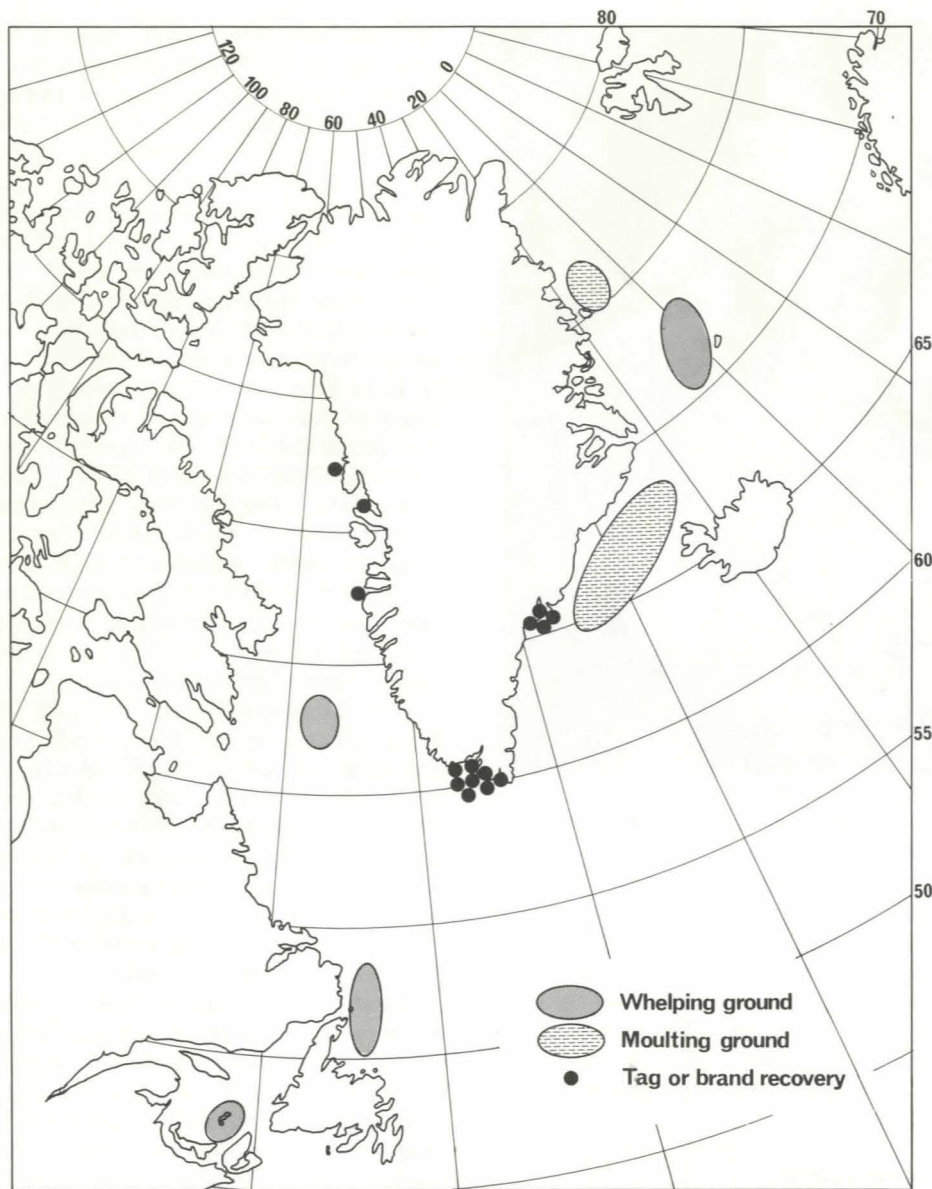


Figure 4. Whelping and moulting grounds of hooded seals and sites of recovery of hooded seals marked around Newfoundland.

seals are much scarcer than harp seals in the Gulf of St. Lawrence, their wandering behaviour is much more pronounced. Taking into account this wandering tendency together with the uniform whelping season and a lack of evidence of stock discrimination shown from body and skull measurement, one could expect a good deal of mixing between different whelping groups of hooded seals. So far, however, limited tagging has not demonstrated such mixing. The recent large-scale tagging described above will give much better information.

### Growth

Hooded seals grow rapidly, females reaching sexual maturity and whelping between three and seven years, and mostly at four to five years. Males mature at rather older ages, near 10 years, as typical of polygynous species. Information on age is derived from sectioning the canine teeth, which show very regular layering in both the dentine and thick cementum (Fig. 5), and has been confirmed from two tagged females which returned to whelp in the Gulf of St. Lawrence at four and five years of age.

### Feeding

Hooded seals live over deep water and dive to considerable depths to feed on the spiny redfish *Sebastes marinus* and Greenland halibut *Reinhardtius hippoglossoides*, as well as squids. This fact explains their scarcity in the Gulf of St. Lawrence, which has only a single deep channel, and absence from the Barents Sea, in both of which areas the shallower-feeding harp seals are common.

### Economics

Hooded seals supply about half the seal catch (currently about 10,000 animals) to Norwegian and Russian ships at the West Ice, near Jan Mayen Island. They provide about 10 per cent of the catch in terms of pelts (in 1982, 12,000 animals) to Canadian and Norwegian ships and Canadian small craft and landmen at the icefields

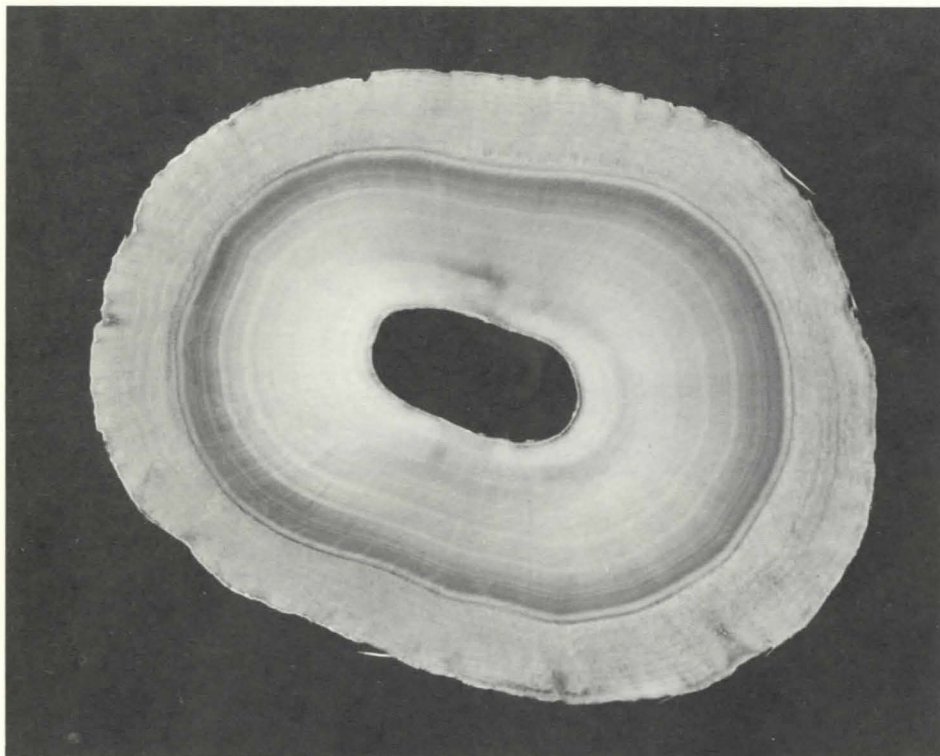


Figure 5. Cross section of canine tooth of hooded seal showing growth layers in inner dentine and outer cementum layers.

northeast of Newfoundland. They provide a catch of about 5,500 animals to Greenlanders, mostly in the region between Julianehaab in the southwest and Angmagssalik in the southeast. The catch at the Canadian icefields now mostly consists of pups, the catch of adults being set at 5 per cent of the total in order to protect the adult females. The Greenlandic catch is mostly of animals aged two to six years.

#### Conservation

Since not a great deal has been known about stock size, restrictions on catch have been precautionary. Up to 1960, there was a catch of moulting hooded seals in Denmark Strait in July and August (together with Greenland sharks *Somniosus microcephalus*, caught for their liver oil). The ending of this hunt by Norway in 1961 removed the damaging twice-a-year hunting on the stocks. A steady rise in catches of hooded seals at South Greenland since this time, under a constant effort by hunters, suggest that the stock whelping at Newfoundland has benefitted. In 1983, a direct census of the Newfoundland whelping stock was attempted, but results were incomplete

with at least 5,000 pups counted in two out of three patches. However, during the 1960s, catches of young hooded seals fluctuated greatly from year to year. Subsequent sampling of females after full recruitment (at ages six years and older) allowed comparison of the numerical strength of the year-classes that had been caught at these very different levels. Plotting catch against year-class strength allowed an estimate to be made of the number of pups born, on the assumption that most of the variation in recruitment was due to the catch. The figure obtained for the 1960s was about 33,000 pups. Since 1975, there has been a quota of 15,000 hooded seals at the Newfoundland ice fields, reduced to 12,000 in 1982 and 6,000 in 1983. Due to progressive tightening of regulations reducing the take of adult females in recent years, most of this catch is of pups.

Full information on catching of hooded seals at the West Ice is not available, but quotas have been reduced in recent years, from 34,500 for Norwegian ships in 1976 to 16,700 young in 1980. The quota for Soviet ships in 1976 was 5,500 hooded seals. In this region also, the permitted catch of adult animals has been reduced to a low percentage of the total.

Further knowledge of hooded seal biology has required an international research effort between sealing nations. A meeting to pool existing knowledge was held in Norway in November 1983, and the joint Canadian-Danish research program in March 1984 marked a major step forward in research achieved.

#### Further Reading:

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