Fisheries and Oceans Pêches et Océans

Underwater World

The Harbour Seal in Canada

Canada

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The harbour seal in Canada is widely distributed along the entire length of both the east and west coasts, with scattered pockets from Herschel Island in the western Arctic to Baffin Island in the east, and throughout Hudson Bay.

There are three distinct subspecies of harbour seals in Canada: *Phoca vitulina richardi* on the Pacific Coast, *Phoca vitulina concolor* in the Maritime Provinces, and a small isolated population, *Phoca vitulina mellonae,* living in certain freshwater lakes in Northern Quebec.

The harbour seal has a liking for fresh water, and is often found in estuaries, rivers and lakes, sometimes far from the sea. It is seen fairly regularly at Montreal on the St. Lawrence River. Another group spends much of its time in the freshwater lake systems of Northern Manitoba, and has been observed 240 km inland from the western shore of Hudson Bay. The number of seals in this system appears to be relatively low. The one specimen examined from Edehon Lake (in the N.W.T. west of Hudson Bay) showed no particular characteristic which could identify it as a separate species; thus it appears that this group of freshwater seals is the same as those in the closest salt water of Hudson Bay. There appears to be no impediment of movement between these areas via the Thlewiaza River which connects Hudson Bay with Lake Edehon.

Fig. 1 Adult harbour seals

Description

Free-swimming harbour seals are hard to distinguish from the young of the grey seal, although the massive "horse head" of the adult grey seals makes adult identification easier. Harbour seals can best be identified by their small round heads, slightly upturned tip of the nose, and by their distinctive white mottling. When viewed full face, the nostrils appear as a "V", whereas young grey seals, with which they may be confused, have a more parallel set to the nostrils. The white mottling is absent in the juveniles and young adults. This feature no doubt resulted in the trivial epithet of the scientific name for the East Coast sub-species *Phoca vitulina concolor.*

When out of the water, at rest, harbour seals frequently lie on one side, with their heads raised, their rear flippers elevated and pressed tightly together, giving them a "banana" shape to the observer. They are the smallest seal in the Maritimes, reaching a maximum of 170 cm in length, and weighing 100 kg. Harbour seals "in hand" are best identified by their distinctive tricornuate molars, closely set, and angled slightly across the line of the jaw.

As the name implies, harbour seals are a coastal species, preferring the quiet waters of bays and inlets. They generally use inshore rocks and sand bars for resting. There is some evidence that they form distinct sub-groups, with little exchange between areas. This discontinuous distribution leads to certain areas having large numbers of harbour seals, sometimes resulting in interference with fixed fishing gear.

Recent tagging studies of juvenile harbour seals have shown extensive movements of a few individuals (Fig. 3). Young harbour seals tagged at Sable Island, N.S., have been recovered from Manasquan, New Jersey, a straight line distance of 1,475 km. Other seals tagged in the same location have been recovered from the adjacent mainland areas of Shelburne, Lunenburg, and Guysborough counties. It is not known if these seals remain in the area as adults or if they return to their birthplace to breed.

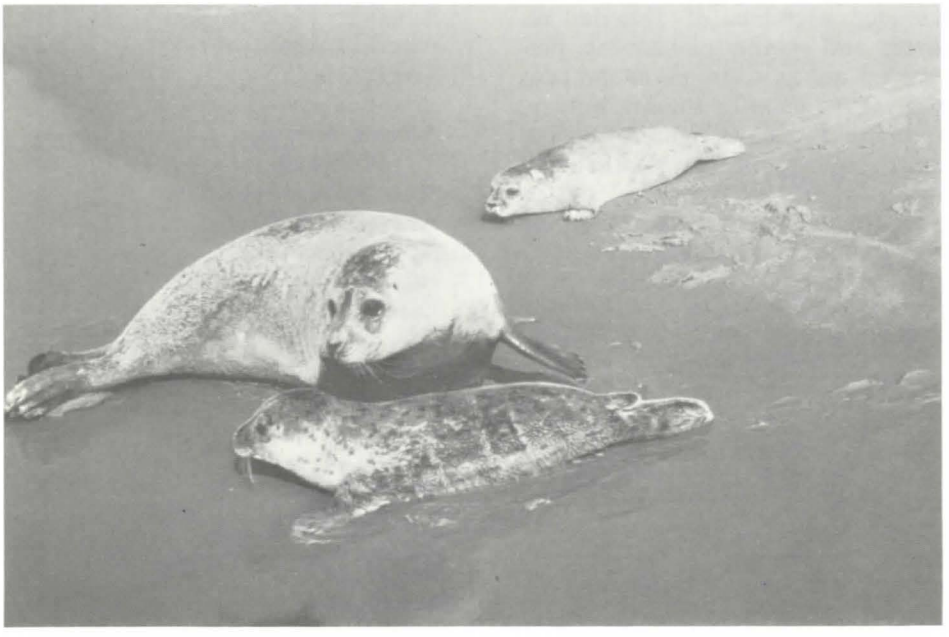

Fig. 2 Female adult with two young seals

Fig. 3 Movement of harbour seals from Sable Island

Feeding

Like the grey seal, harbour seals are opportunistic feeders. The food items listed in Table 1 probably represent the availability of the prey, rather than a food preference.

Table 1
Stomach Content of Harbour Seals

Species	Per cent Occurrence
Herring	24.2
Squid	20.6
Flounder	14.1
Alewife	6.8
Hake	6.0
Smelt	3.7
Mackerel	3.6
Sand lance	2.9
Capelin	2.9
Shrimp	2.2
Cod	2.1

Harbour seals appear to consume the equivalent of between three to six per cent of their body weight each day. This means that the present East Coast harbour seal population consumes about 10,000 tons of fish per year. When compared to the catches of the commercial fishery fleet, the amount consumed by harbour seals is insignificant.

Impact on Fisheries

A bounty was originally placed on harbour seals in response to complaints by inshore fishermen regarding damage to fixed gear, competition for fish, and the role of the harbour seal in the transmission of codworm. Damage to fixed fishing gear which can be attributed to harbour seals can be a costly nuisance for fishermen, although not a serious disruption to the fishery. As previously noted, the amount of fish consumed by harbour seals is small relative to total commercial fish catches. The role of the harbour seal in the transmission of codworm is not clear, although recent studies show it to be a non-preferred host. For these reasons, plus the fact that the population had been significantly reduced, the bounty was removed from harbour seals in 1976.

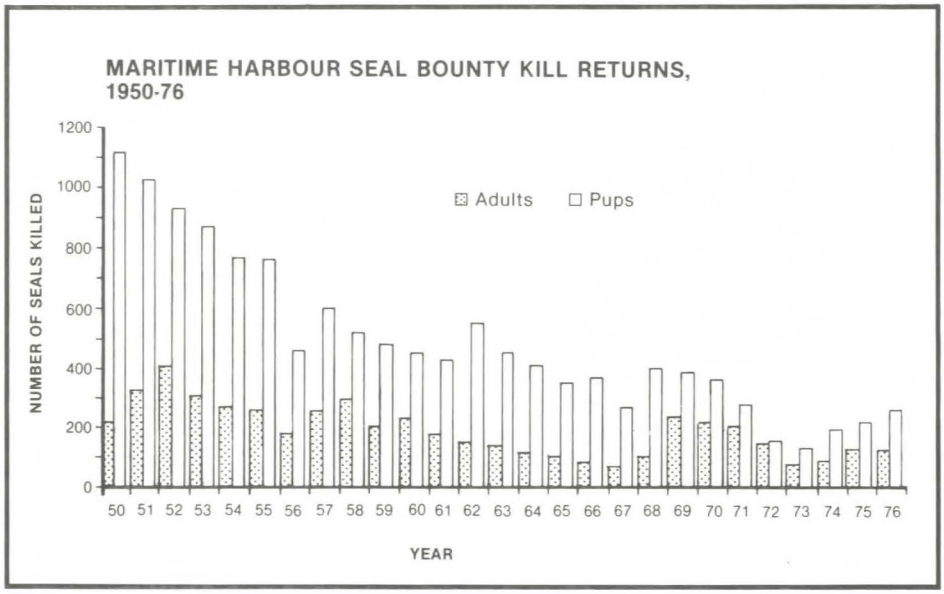

Fig. 4

Fig. 5 Typical "V" of nostrils in full-face view

Population

Fig. 4 shows the number of seal jaws submitted for bounty during the period 1950-76. The overall decline in returns is apparent, except for the periods 1968-71 and 1975-76. The increase during these years was the result of a special payment made to trained hunters, to collect scientific samples.

The last survey of the total east coast population was conducted in 1973, and the results are outlined in Table 2. Estimates of numbers for the west coast vary widely, but 35,000 would appear to be most likely.

Table 2

New Brunswick	1,000
Nova Scotia (including Sable Island)	5,000
Prince Edward Island	500
St. Pierre & Miquelon	300
Newfoundland	2,000
Quebec	4,000
Total	12,800

The removal of the bounty in 1976 will undoubtedly result in an increase of harbour seals in all areas. This increase will accelerate once the survivors of the post-1976 year classes reach sexual maturity and begin producing offspring of their own.

Reproduction

The mean age of sexual maturity for female harbour seals is between three and four years. They give birth to a single pup during May and June. The young are born with the short, stiff, hair coat of the adult, having shed their long fetal hair in the uterus; this is expelled with the placenta.

Once the mother-pup bond is established, harbour seals are very solicitous mothers. On calm days they take their young into shallow tidal pools to swim. Here the young seals take their first solid food, usually small coastal crustaceans, such as Gammarus. If danger threatens, the female will take the pup by the scruff of the neck and drag it into the sea. Here she will place herself between the incoming waves and keep the pup between her fore flippers. If a longer journey is necessary she will carry the young on her belly, holding it with her flippers. Journeys of several

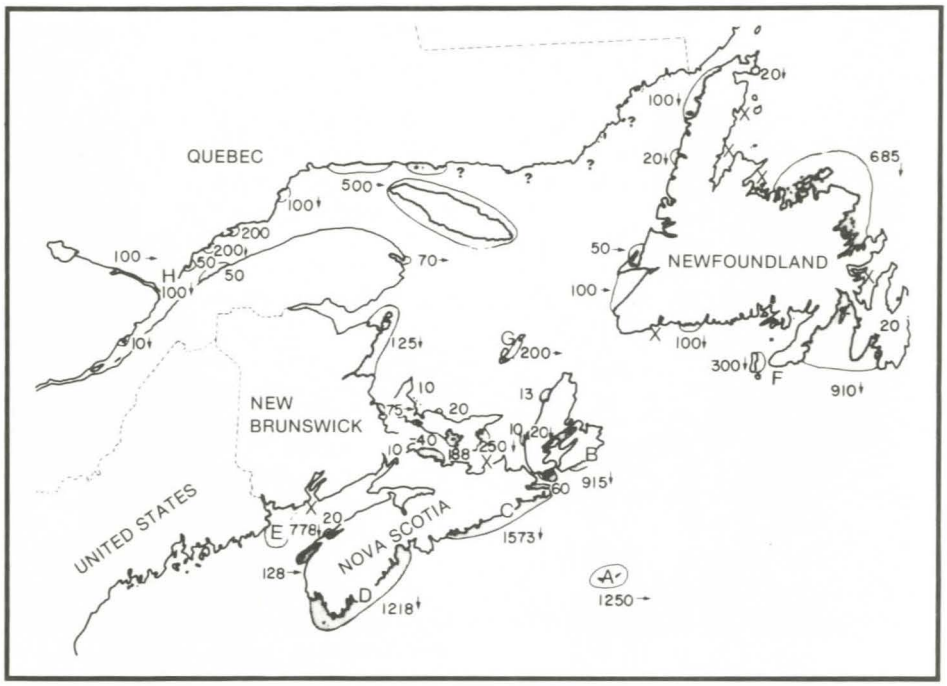

Fig. 6 Occurrence of harbour seals in eastern Canada, indicated by hatching. The estimated number of seals in 1973 in each area is given with the reported current trend: stationary (horizontal arrow) or decreasing (downward arrow). An X indicates that seals are reported to have disappeared during the last 15 years. Question marks mean absence of information.

kilometres can be made in this fashion.

The females suckle their young for about one month, and during this time the young double their birth weight of 10 kg. The new-born pups have the ability to swim within a few hours of birth. By the end of the second day they regularly go into the sea. Due to their naiveté they fall easy prey to sharks which are attracted to the large breeding groups. Dead pups, severely mutilated by sharks, are a common sight on Sable Island. As an example, in a three-day period during the 1980 breeding season, sharks killed 23 pups along an eight-kilometre stretch of the beach.

Males become sexually mature between five and six years of age; social maturity also apparently occurs at this age since harbour seals appear to be monogamous. They mate immediately after the pup is weaned; the beginning of the growth of the fetus, however, is delayed until mid-September.

Commercial Importance

Harbour seals in the Maritime Provinces are not hunted for their pelts, although they are hunted commercially along the North Shore of the Gulf of St. Lawrence. A few animals are taken in British Columbia for their skins, but most are shot by irate fishermen because of the seals interfering with fishing gear. The Inuit highly prize the pelt of "Kasigiak", although its value is prestigious, rather than economic, because of its rarity in the Arctic.

The removal of the bounty in 1976 has resulted in reduced interest in hunting, and the commercial value of the species is now negligible.

Harbour seal numbers are generally increasing or stable over most of their range, and apart from the occasional seal shot for interfering with fixed fishing gear, the populations are unmolested.

Further Reading:

Bigg, M.A. 1969. *The Harbour Seal in British Columbia.* Fisheries Res. Bd. Can. Bull. No. 172.

Boulva, J. and I.A. McLaren, 1979. *Biology of the Harbour Seal, Phoca vitulina, in Eastern Canada.* Fisheries Res. Bd. Can. Bull. No. 200.

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