

Winter Sightings of Marine Mammals in Arctic Pack Ice

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(Received 5 March 1987; accepted in revised form 28 May 1987)

ABSTRACT. There is limited information about the winter distribution of some arctic marine mammals. In February-March 1976 six species of marine mammals were sighted in the pack ice of Baffin Bay and Davis Strait. Hooded seals were sighted along the ice edge in February, but in late March adults with pups were seen. Large numbers of narwhals were sighted throughout southern Baffin Bay in a variety of ice conditions, which suggests that this species winters in the pack ice. Belugas, bowhead whales, walrus and ringed seals were occasionally sighted in the pack ice.

Key words: Baffin Bay, Davis Strait, pack ice, marine mammal sightings

RÉSUMÉ. Il existe peu d'information sur la répartition hivernale de certains mammifères marins de l'Arctique. En février et en mars 1976, six espèces de mammifères marins ont été aperçues sur le pack de la baie de Baffin et du détroit de Davis. On a repéré des phoques à capuchon le long du bord de la glace en février et, vers la fin mars, on a vu des adultes avec des petits. On a observé un grand nombre de narvals dans toute la partie sud de la baie de Baffin, dans des conditions de glace très variées, ce qui semble indiquer que cette espèce passe l'hiver dans le pack. On a aperçu à l'occasion des bélougas, des baleines franches, des morses et des phoques annelés dans le pack.

Mots clés: baie de Baffin, détroit de Davis, le pack, observations de la présence de mammifères marins

Traduit pour le journal par Nésida Loyer.

INTRODUCTION

There is limited information about the winter distribution of some arctic marine mammals. Because large areas of Baffin Bay are ice covered, it has been suggested that an undetermined number of narwhals, belugas and bowhead whales winter in the open "North Water" of Baffin Bay (Dunbar and Dunbar, 1972; Stirling, 1980). Finley and Renaud (1980) surveyed North Water in the late winters of 1978 and 1979. Both narwhals and belugas were seen in the area; however, the authors concluded that it is not a major overwintering area for marine mammals. I made numerous sightings of marine mammals from the ice-breaker *Northwind* and from helicopters during an oceanographic cruise in Baffin Bay during February-March 1976.

METHODS

Animal sightings were made opportunistically from the bridge of the *Northwind* and from the ship's helicopters during a 29-day period in winter pack ice. The position of animals sighted was back calculated based on the ship's log entries at the time of the sightings. To interpret the location of sightings from the helicopter, I used TACAN (Tactical Air Navigation) readings of the range and bearing of the helicopter relative to the ship. These were converted to latitude-longitude positions using the ship's log entries. For each sighting, the species, number of animals, age (adults vs. young), sex (when possible) and ice features (concentration, thickness, forms, topography, stages of development and types of openings) were logged by the observer. The ship's records provided information on weather and ice conditions at 6-hour intervals during the in-ice portion of the cruise. Population density estimates could not be made because data were collected during ice reconnaissance flights and the cruise track was not systematic.

RESULTS AND DISCUSSION

Eighty percent of the observations from the *Northwind* were in pack ice concentrations of $\frac{7}{8}$ or greater. Medium-size ice

floes were prominent. Ice thickness was somewhat greater in southern Baffin Bay than in Davis Strait. Because the ship took advantage of refrozen leads and areas of thin ice, the average ice thickness recorded by the ship's personnel was probably low (Newton and Lovett, 1977).

The location of narwhals (*Monodon monoceros*), belugas (*Delphinapterus leucas*) and bowhead whales (*Balaena mysticetus*) are plotted in Figure 1. Hooded seal (*Cystophora cristata*), walrus (*Odobenus rosmarus*) and ringed seal (*Phoca hispida*) sightings are plotted in Figure 2. Each figure includes a cruise track based on the ship's position at noon (local time) and the approximate position of the ice edge.

Narwhals were the most frequently sighted marine mammals in the pack ice. The numbers ranged from single individuals to one group of approximately 100 animals swimming in a lead. On two occasions a calf was seen in a group of about 25 animals. There was one sighting each of belugas and bowhead whales. Walrus and ringed seals were sighted on several occasions.

Narwhals have been observed in Baffin Bay in February (Davis, 1876). It has been suggested that a small number of narwhals winter in Baffin Bay (Vibe, 1950, 1967) or in the North Water (Mansfield *et al.*, 1975). My sighting of belugas confirms that small numbers of belugas stay in Baffin Bay in the winter, as suggested by Kapel (1950) and by reports of belugas in pack ice in the Soviet Arctic (Tomlin, 1967; Kleinenberg *et al.*, 1969).

In late February, hooded seals were sighted between 63°00' and 63°20'N. Only adults were seen on medium-size ice floes or swimming in leads. On 18 and 19 March, adults and pups were seen between 63°18' and 62°16'N. There were large bloody patches on the ice, which indicated recent births of hooded seals.

Sergeant (1974) reported hooded seals in Davis Strait during March between 63°30' and 64°20'N and 56°00' and 56°30'W and said, "there were adults, pups and blooded patches, indicating that births had taken place recently." This sighting of hooded seals at the same latitude and longitude indicates that this is a whelping area. The walrus sighting supports Vibe's (1950, 1967) conclusion that this species winters in the Holsteinberg region.

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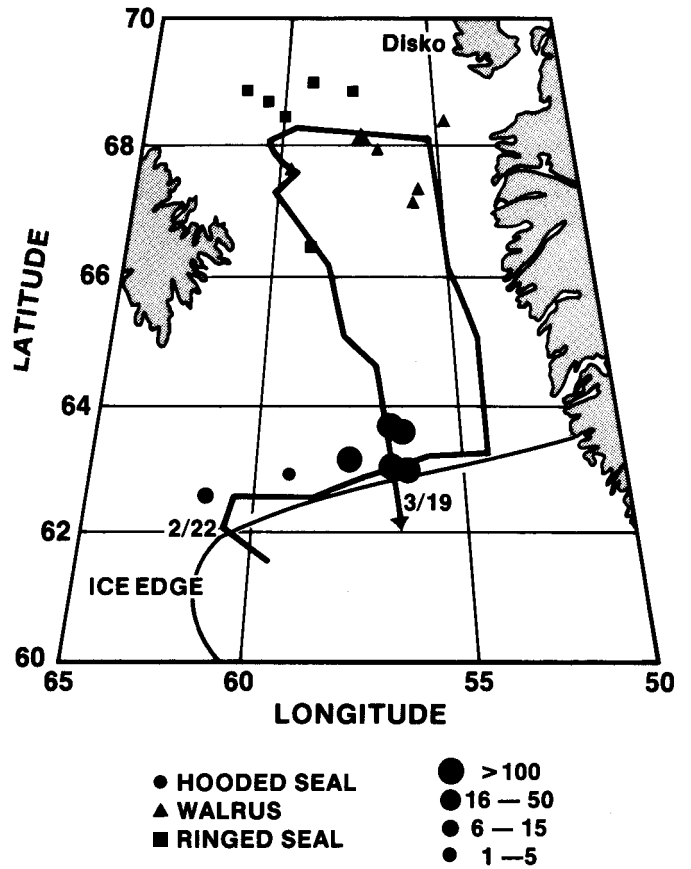
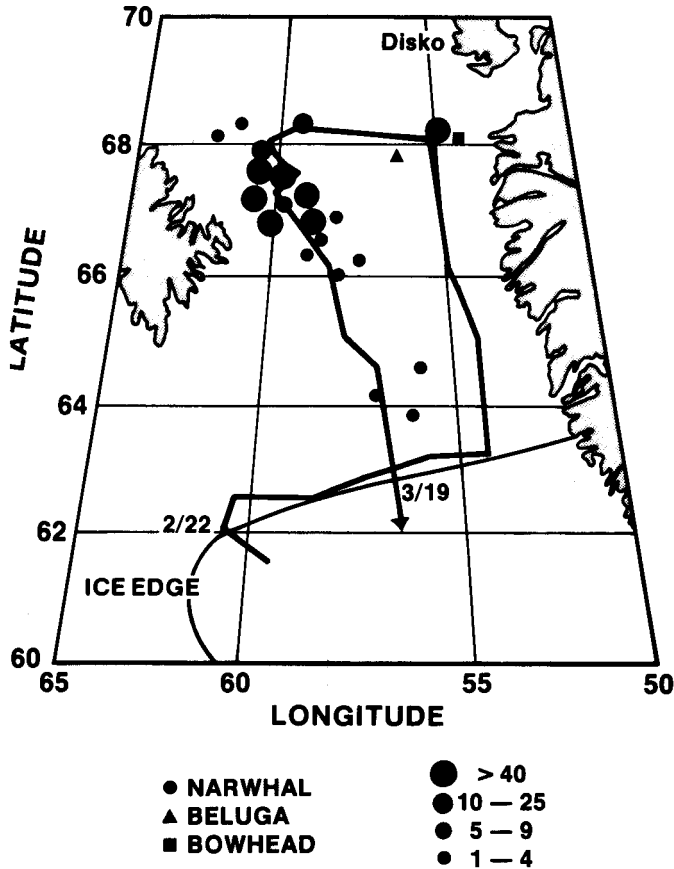


FIG. 1. Locations of narwhals, belugas and bowhead whales sighted in Baffin Bay.

FIG. 2. Locations of hooded seals, ringed seals and walrus sighted in Baffin Bay.

SUMMARY

In northern Baffin Bay, isolated areas of open water are found in the winter. Since the areas to the south are covered with ice, it has been suggested that marine mammals may inhabit North Water in the winter. In February-March 1976 pack ice covered southern Baffin Bay, and although there were occasional open leads, these were seldom extensive. The sightings of narwhals and, to a lesser extent, of belugas and bowhead whales indicate that these species may winter in the pack ice.

The winter distribution of some marine mammals in ice-covered regions suffers from lack of data; however, from the sightings of marine mammals described in this note, about as many marine mammals have been seen in winter pack ice as have been reported in the open water of North Water in winter.

ACKNOWLEDGEMENTS

This work was under the direction of the Arctic Submarine Laboratory of the Naval Ocean System Center, San Diego. I thank, in particular, W.K. Lyon and Sarah Hopkins. Jeanette Thomas provided helpful suggestions in the preparation of this manuscript.

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