

Sexual Behavior of Bowhead Whales Observed Off the North Coast of Alaska

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From 30 April to 30 June 1976, aerial surveys were conducted off the north coast of Alaska to delineate migratory patterns of bowhead whales (*Balaena mysticetus*) in the Chukchi and Beaufort Seas. At 1620 hours on 8 May 1976 approximately 32 km east of Point Barrow (71°24.4N, 156°11.0'W) we observed and photographed a group of six bowhead whales engaged in sexual behavior in an open water "lead" in the pack ice. Pack ice appeared to be solid east of the region where sightings occurred, suggesting that the animals were detained during migration.

A series of 15, 35mm photographs taken with a motor drive attachment provided a clear record of the observation. To facilitate discussion of the sequence of events, the whales are numbered from left to right in a sketch (Fig. 1a) made from a representative photo (Fig. 1b). The aspect of each whale will be described as dorsal, lateral, or ventral, depending on which surface of the whale was toward the observer.

Whale 1 was positioned laterally with its dorsal surface toward the outer edge of the photograph. Its head was partially out of the water. Whale 2 was positioned dorsally, and both 1 and 2 were moving slowly in a counter-clockwise direction toward the bottom of the photograph. Whale 3 was approximately two meters beneath the surface, with its head directly beneath whale 5, possibly pushing up 5's head. Later in the sequence of photographs whale 3 moved out from under whale 5 as whale 5 rolled forward and downward.

The position of whale 4 was partially obscured, though a partial lateral view of the whale was visible beneath whale 5. The left flipper of whale 4 was partly out of the water touching the flank of whale 5. At other times this flipper was highly visible.

Whale 5 was floating in a belly up posture, its ventral surface mostly above the water line and its white chin patch was underwater. A white spot, visible on the photographs two-thirds of the way back from the anterior edge of the whale, is believed to be the umbilicus. The right flipper was held flush against its side while the posterior edge of the left flipper was raised and touching the left flipper of whale 6. The entire sequence of photographs showed that whale 5 was sinking beneath the water, apparently initiating a dive, backwards.

Whale 6 was positioned laterally in the water, grasping whale 5 with its left flipper. The penis of whale 6 was protruded (arrow on figure), with both the penis sac and pars intrapraeputialis (terminal cone) clearly visible on the photographs. The pars intrapraeputialis was breaking the water surface as

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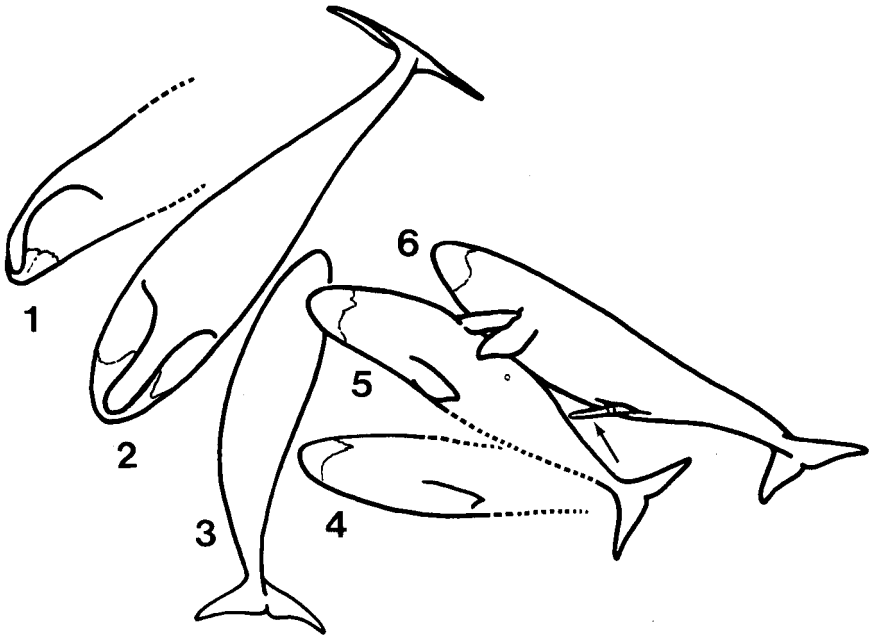


Fig. 1a. A sketch of six bowhead whales exhibiting possible copulatory behavior in the Beaufort Sea near Barrow, Alaska, on 8 May 1976. Dotted lines indicate portions of whales obscured below the surface, arrow points to the penis of whale 6.

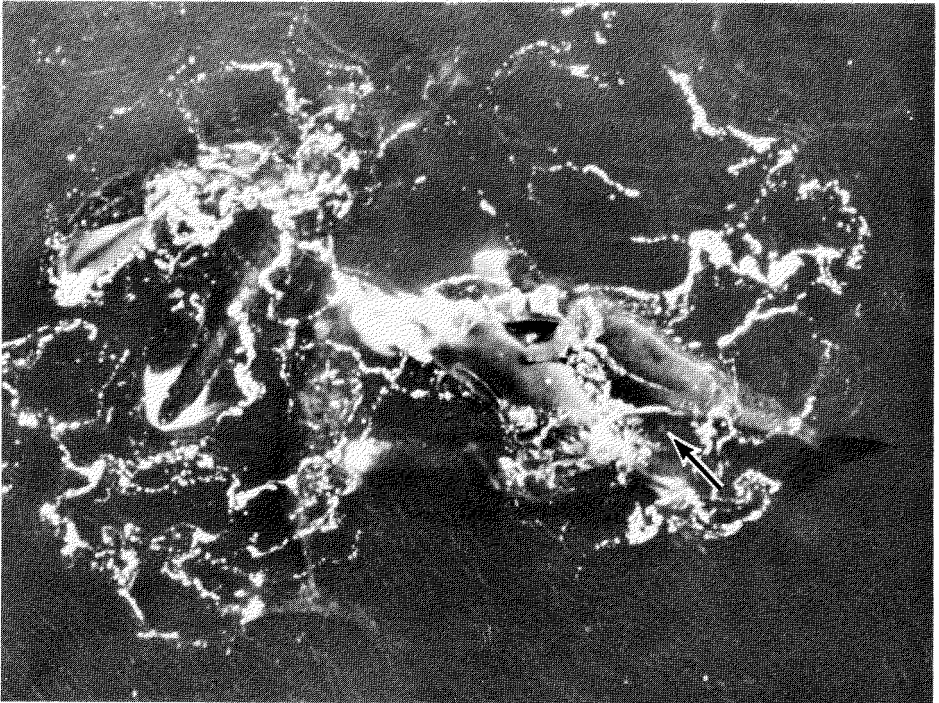


Fig. 1b. Photograph of six bowhead whales from which the sketch depicted in Fig. 1a was made.

whale 6 moved slightly backward. Apparently whale 6 was trying to copulate with whale 5, which may have been a female, but whale 5 was not in a position which would allow intromission to occur.

The entire aggregation of whales appeared on the surface for a few minutes and then sank, reappearing a short time later. Time of observation directly over the whales was about 2 minutes; however we remained in the area long enough to verify that these behavioral events lasted for about 10 minutes.

Foote (1964) observed similar behavior in bowheads on 11 May 1962 near Point Hope, Alaska. His observations were made from a boat for more than an hour and were summarized as bowheads "surface swimming for 5 to 10 minutes, followed by head bobbing or the sideways position with a flipper twisting and turning above water and one fluke exposed." He concluded that the animals were mating.

Similar behavior associated with mating has been observed in other right whales. Donnelly (1967, 1969), Payne (1972, 1976), and Cummings *et al.* (1974) made observations of southern right whales (*Balaena glacialis australis*) which included: 1) more than one male with one female; 2) the female rolling over on her back as an avoidance response to males; 3) males clasping the female attempting to bring her into suitable posture for intromission.

Since intromission was not observed during our sighting the assumption that whale 5 was a female may be incorrect. Sexual interactions between males have been reported in captive dolphins (McBride and Hebb, 1948). Darling (1977) reported a group of male gray whales (*Esrichtius robustus*) engaged in sexual behavior which included clasping, rolling, and exposing heads and flippers above the surface. The possibility that our observation was of a group of males cannot be discounted. Its value is in documenting group sexual behavior in bowhead whales that is similar to behavioral observations made of other mysticetes.

These observations help support the conclusions of Braham and Krogman (1977) that bowheads may mate during the spring migration. It is not known if mating occurs only during the northward migration but, because of ice conditions during this period, the population may be more aggregated than in either the winter or summer, bringing about an increased number of social interactions which eventually lead to mating.

ACKNOWLEDGEMENTS

Funding was provided by the Bureau of Land Management, U.S. Department of the Interior, under contract numbers R7120807/808. The project was administered by the Environmental Research Laboratory, National Oceanic and Atmospheric Administration, Juneau, Alaska, and Boulder, Colorado. Logistic support was provided by the Naval Arctic Research Laboratory, Barrow, Alaska. Dr. Howard Braham critically reviewed this paper and provided additional insight into the observed behavior. Artwork was provided by Larry Foster.

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