

**Fall Movements of Bowhead Whales in the Chukchi Sea**

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Bowhead whales (*Balaena mysticetus*) from the western Arctic stock have been the focus of considerable research because they: 1) are critical to the nutritional and cultural health of Alaska Natives, 2) likely play a significant role as zooplankton grazers in the Bering, Chukchi and Beaufort seas, and 3) are vulnerable to possible effects of oil and gas activities during migration and in their summer range. General movements and behavior are known from aerial surveys and from the timing of whaling in coastal villages. Some specific feeding areas have also been identified from aerial surveys and the analysis of stomach contents; however, these locations are restricted to areas surveyed and near whaling villages. Information on the location of important feeding areas throughout bowhead range and how movements relate to currents, bathymetry, or ice cover is unknown. Working with other researchers and subsistence whalers we have attached satellite transmitters to bowhead whales. Here we describe the fall migration of 18 bowhead whales in the Chukchi Sea in 2006-2008. Using a Bayesian kernel density estimator, we also describe areas that might be important for feeding and calculate residence times. The earliest date any whale passed west of Barrow was 31 August. Most whales moved through the Chukchi Sea between 71 and 74°N. Seven whales spent time along the eastern side of Wrangel Island before going to the coast of northern Chukotka and following the coast southward. Three whales returned to Barrow; two whales returned after travelling 300 km west and one returned after travelling to Wrangel Island. Only one whale travelled south along the Alaskan coast. All whales that crossed the Chukchi Sea before transmitter failure (13 of 18) travelled through Oil and Gas Lease Sale Area 193. Of 11 whales still transmitting in late November 2008, one whale had passed through the Bering Strait while 10 others were still in the Chukchi Sea. The kernel density estimator identified Point Barrow, the east side of Wrangel Island, and the northern coast of Chukotka as areas of importance.

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