

Survey of bowhead whales (*Balaena mysticetus*) in the Northeast Atlantic in 2010

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The Spitsbergen stock of bowhead whales is believed to number in the tens (Christensen *et al.* 1992) and is considered Critically Endangered by the IUCN (Reilly *et al.* 2008). During the period 1940-2009 46 sightings of bowhead whales have been reported from the Svalbard area (Wiig *et al.* 2010). We have recently reported the results from two surveys for bowhead whales in the Northeast Atlantic along the ice edge between Svalbard and Greenland in April 2006 and March 2008 (Wiig *et al.* 2007, 2008). Here, we report results from a survey in the same area conducted in March-April 2010.

From 29 March to 14 April 2010, we searched the southern edge of the Polar Ice Cap in the Fram Strait and north and northwest of Svalbard for bowhead whales from the research vessel Lance (Norwegian Polar Institute, Tromsø) between 79° - 81°N and 3°W - 24°E (Fig. 1). The survey started and ended from Longyearbyen, Svalbard. The position of the edge of the drifting pack ice varied considerably during the survey depending on wind direction. Throughout the survey, we continuously monitored the sea acoustically with a towed hydrophone array or sonobuoys and in addition at least two persons equipped with binoculars were actively searching for whales from the bridge of the vessel (~10 m above seal level) at all times (see Wiig *et al.* 2008). The observation conditions varied considerably during the survey, and outside air temperatures ranged between -10 and +2 degrees C.

We were equipped with crossbows for taking skin biopsy samples. Additionally, we had satellite transmitters (Spot5, Wildlife Computers, modified by M. Willum) for tagging whales using an ARTS airgun (Aerial Rocket Transmitter System) at 15 bar pressure. The tags were programmed to send up to 200 uplinks every day between 0800 and 2000 UTC (The tags were provided by M.P. Heide-Jørgensen - Greenland Institute of Natural Resources).

The total distance of the survey lines was 3616 km during the 19 days at sea. We observed one bowhead whale in the ice close to a distinct edge on 3 April at 79°54'N 1°03'E over the continental slope at 2300 m depth. The whale was tagged in top of the whale's back from the bow of the expedition vessel at about 5 m distance. We also took a skin biopsy. The tag started to provide positions 30 April and has continued to give daily positions after that date. We believe the tag's failure to send signals for a period was a technical malfunction. On 13 April at 80°23'N 2°18'E we had a second sighting. But, based on distinct scars on the head of the whale we identified it as the same individual we had encountered 10 days earlier. We did not get close enough to tag it a second time. No other bowhead whale observations were made during the trip. However, we recorded two short upsweep calls within the bowhead frequency range on 8 April at 80°30'N 02°00'E. Visual detection of a pod of 3+ killer whales (*Orcinus orca*) was made 3 April at 79°54' 2°13'E a few hours before we tagged the bowhead.

The genetic identity of the biopsied whale will be compared to the biopsies taken in the same area in 2006. We believe that the Fram Strait is an important area for bowheads in late winter and spring and will continue our research efforts in this region on this endangered Spitsbergen stock.

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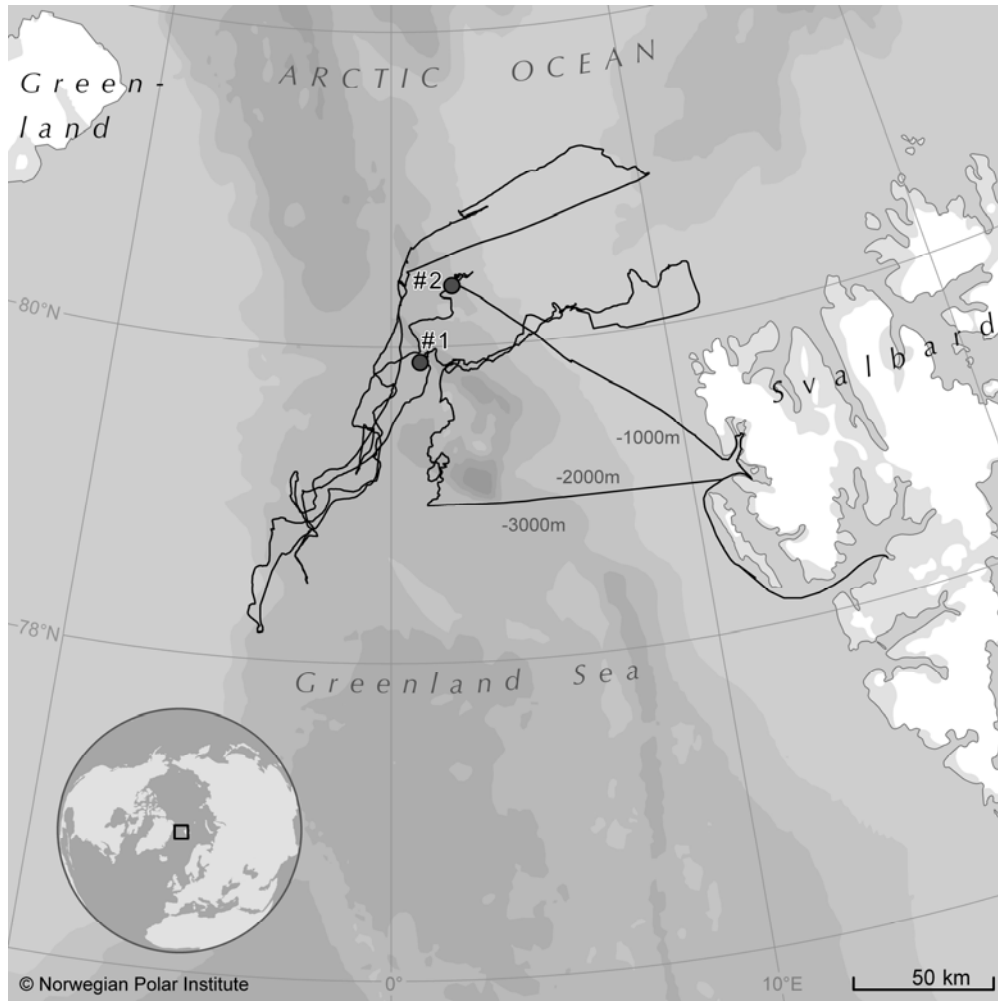


Fig. 1. Track line of RV Lance from 29 March to 14 April 2010 with two bowhead observations indicated.