



Passive Acoustic Survey off Utqiaġvik Spring 2017

Background

The NSB-DWM has conducted acoustic surveys in most years since 1984. The acoustic data have been used to locate whales and make call counts through the spring migration and was used for abundance estimation.

Acoustic information can also be used to examine changes in the spring migration including:

- documenting the beginning and end of the migration based on first and last dates of calls recorded,
- estimating the number of “singers” and distinct songs by year,
- measuring the total “acoustic energy” as an index of the numbers of whales, and
- determining if other whales are present in the lead (for example, gray and killer whales).

We are now trying to determine if counting bowhead calls might provide a useful “population index” of migrating bowhead whales at Barrow. Starting in 2015, we have been putting out a single hydrophone-recorder off the shorefast ice west of NARL. We are still analyzing acoustic data from 1984 to present to determine if it is correlated with population abundance. During the spring 2017 bowhead whale migration near Barrow, we are proposing to put a hydrophone off the lead edge in late March or early April, depending on ice conditions.

Mooring deployment

The instrument recorded continuously underwater for 2.5 months. The instrument package consists of ~100 lbs. of chain shackled together for an anchor, a recovery mechanism, a hydrophone, and one or two 14” subsurface floats. The instrument itself makes no noise. Both the hydrophone package and the floats are white per request in 2015 from the Barrow Whaling Captains Association.

To deploy the mooring, we usually chop holes through thin ice near the lead edge. The mooring is deployed by lowering the anchor through the hole using a rope. Upon recovery of the acoustic recorder, the data is downloaded. From these data, hourly occurrences of bowhead whales, bearded seals and beluga whales will be determined. Hours with bowhead whale signals will be examined in detail to determine sound counts. The number of sounds per hour will be used to compare with past sound counts based on a review of past reports.

The bowhead sound files will be placed on the NSB-DWM website and available for distribution to anyone interested by contacting us.



Hydrophone being lowered into the water off Utqiaġvik in 2016 by Craig George, Billy Adams and Ross Burgener.

For more information contact Craig George at Craig.George@north-slope.org or 852-0350.