



**NOAA** NATIONAL OCEANIC AND  
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## **Humpback Whales Sing Year Round in the Western North Atlantic Ocean**

Male humpback whales in the Northwest Atlantic Ocean sing complex songs not only on their winter breeding grounds but also on higher latitude feeding grounds, according to a new study on whale songs heard in one of their western North Atlantic feeding grounds.

Researchers at NOAA's Northeast Fisheries Science Center (NEFSC), Cornell University, and Stellwagen Bank National Marine Sanctuary report that humpback whales (*Megaptera novaeangliae*) sing year-round with peaks in singing during the spring and late fall months. The study was published online January 23 in the journal *Aquatic Biology*.

Continuous year-long recordings were made in 2006 and 2008 in the Stellwagen Bank National Marine Sanctuary (SBNMS) off the coast of Massachusetts, which is a part of the humpback whales' western North Atlantic Ocean feeding grounds. Bottom-mounted marine acoustic recording units deployed throughout SBNMS revealed that humpbacks sing throughout the year and over multiple years on the feeding ground.

"The presence of song year-round on this foraging ground is not too surprising because previous studies in both Pacific Ocean and Atlantic Ocean humpback whales have shown that singing occurs in higher latitudes on feeding grounds and along migration routes," said Elizabeth T. Vu, lead author of the study as a researcher at the NEFSC's Woods Hole Laboratory in Woods Hole, Mass.

"The novel finding of our study was the detection of year-round patterns of song in an area outside of the winter breeding grounds where songs are traditionally heard," Vu said. "We still don't know how northern feeding areas may contribute to the maintenance of dominance hierarchies in the population, to the attraction of females, or how songs on the feeding grounds relate to those on the breeding grounds."

Humpback whales in the western North Atlantic population migrate annually between higher latitude summer feeding areas, such as the Gulf of Maine and off Greenland and Iceland, and winter breeding grounds in warmer Caribbean waters. Between April and December, humpback whales forage in the waters of the SBNMS, feeding primarily on sand lance.

The number of humpback whales in SBNMS is highest from May to October and lowest from November to April, so researchers think the differences in song production are more likely the result of changes in singing effort than the number of individual whales present.

"It is unlikely that a single individual was responsible for all of the songs recorded over the year because groups of whales regularly move in and out of the sanctuary," said study co-

author Sofie Van Parijs of the Northeast Fisheries Science Center's Protected Species Branch in Woods Hole. "The shortest songs occurred in summer and early autumn months. Since foraging is the main occupation of humpback whales during these months, reduced singing in periods of intense feeding is not unexpected, although the presence of any song during this period is surprising."

Why do humpback whales sing if they aren't trying to attract a mate? Previous studies suggest that males sing outside of the breeding season to maintain dominance hierarchies and to advertise to females. Seasonal hormonal changes may also play a role, but there is no clear understanding as yet, especially since not all humpback whales, male or female, leave feeding grounds to migrate each year.

Being able to understand these behaviors and what causes them is something to look at in future studies," said Vu. "We are only starting to piece the puzzle together with increasing use of passive acoustic monitoring."

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Related Links:

Aquatic Biology article: [b014p175.pdf](#)

NEFSC's Protected Species Branch:

<http://www.nefsc.noaa.gov/read/protssp/mainpage/>

Passive acoustic research at NEFSC:

<http://www.nefsc.noaa.gov/read/protssp/mainpage/acoustics/index.html>

Researchers to Develop Ocean Sanctuary "Noise Budget" (April 2008 NEFSC Science Spotlight): [http://www.nefsc.noaa.gov/press\\_release/2008/SciSpot/ss0804/](http://www.nefsc.noaa.gov/press_release/2008/SciSpot/ss0804/)

Audio Clip #1 of humpback sounds: Humpback whale 2.wav

Audio Clip #2 of humpback sounds: Humpback whale 3.wav