

## Research and Monitoring

# Humpback Whale Migrations

## Stellwagen Bank and Silver Bank – Endpoints in a 3,000-Mile Annual Round Trip

In 1976, during the first year of commercial whale watching on Stellwagen Bank, a large, easily identifiable humpback with a scarred dorsal fin was sighted and named. The individual was Salt, and she has become an annual summer visitor to the area. Whale watchers keep an eye out for this massive creature, and she doesn't disappoint, reappearing regularly, often with a calf in tow (12 that we know of as of 2010). A few years after that first sighting, when whale researchers began a photo identification program at Silver Bank in the waters off the Dominican Republic, they saw a familiar sight. It was Salt. She offered the first proof-positive of the migratory path of this massive global commuter.

This link between northern feeding grounds and breeding/calving grounds in the Caribbean Sea was again confirmed in 1992 and 1993 when scientists from seven countries worked together to conduct a unique study of North Atlantic humpback whales across their entire ocean range. The project was called the Years of the North Atlantic Humpbacks (YoNAH). Using photo-identification and biopsy sampling, YoNAH provided a detailed picture of the abundance, population structure and migratory movements of thousands of whales.

The study delineated four distinct feeding aggregations: Gulf of Maine, eastern Canada (Gulf of St. Lawrence, Labrador and Newfoundland), West Greenland, and eastern North Atlantic (five groups, if you separate the Iceland and Norway populations). All of the western Atlantic feeding groups traveled to the West Indies to mate and calve. Surprisingly, some Norway whales, once thought to migrate only to the Cape Verde Islands, were found in the Caribbean.



In 2004 and 2005, another international study called More North Atlantic Humpbacks (MoNAH) focused on photographing and sampling humpback whales in the Gulf of Maine and on Silver Bank off the Dominican Republic to provide updated information on this population. Scientists are able to conclude that humpbacks are loyal to their northern feeding grounds, yet mix with other groups of humpback whales on their tropical breeding grounds. Mixing genes from different feeding populations is believed, among other things, to contribute to the resilience of humpback whales.

At the end of the mating and calving season, humpbacks return to their respective feeding grounds with the newborns following their mothers. Calves learn the route to their mothers' feeding ground on the spring northbound migration and undertake the same 1,500-mile trip back by themselves every winter. Stellwagen Bank may be an especially favored stopping-off place for new mothers who stock up on quantities of fat-rich sand lance. These small, pencil-thin, schooling fish also offer a relatively easy target for the just-weaned calves.

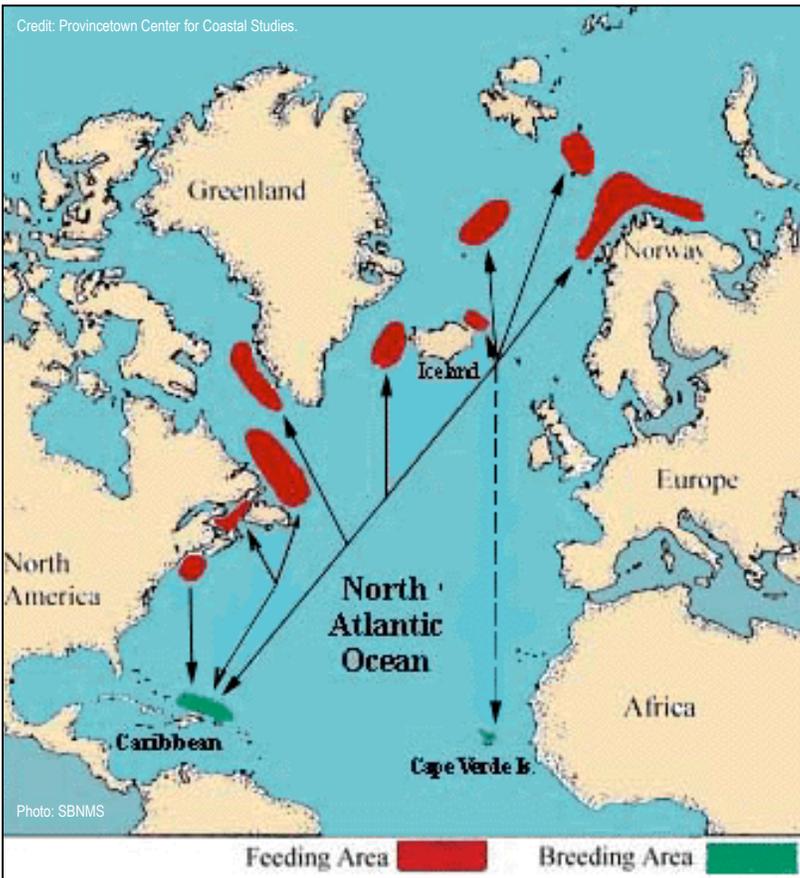




Studies also indicate that humpbacks not only breed and calve in the Greater Antilles (Cuba, Hispaniola, Puerto Rico), but along the Lesser Antilles chain to as far as Trinidad and Tobago, and Venezuela, although the most populous area is along the northern coast of the Dominican Republic. The sanctuary is working with its counterpart there to coordinate education, outreach and research programs, and is establishing similar arrangements with other Caribbean nations where humpback whales spend their winters.

Migration is not always without incident. There is a natural hazard of orca attacks, primarily on humpback calves. Not all attacks are lethal. Almost 15 percent of the humpback whales from the Stellwagen Bank sanctuary have orca tooth marks on their tail flukes.

Migrating from the tropics to colder waters, humpback whales pass a gauntlet of threats, especially in the western Atlantic Ocean. Major ports line the coastline, with heavy ship traffic passing in an east-west direction over the north-south whale path. The Caribbean and western Atlantic are also heavily fished. Fixed gear, nets and traps anchored or placed on the seafloor become an ever-present danger to a feeding or migrating whale.



Photos: (Top left) A feeding humpback whale surfaces near a whale watching vessel in Stellwagen Bank National Marine Sanctuary, SBNMS photo, taken under NOAA Fisheries Permit #605-1904; (Bottom left) Map of North Atlantic humpback whale migratory endpoints, courtesy Provincetown Center for Coastal Studies; (Bottom right) A humpback's flippers frame a distant shipwreck on Silver Bank in the Marine Mammal Sanctuary of the Dominican Republic, courtesy MMSDR.