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February 23, 2009  
SS09.01

## **Surveys Show Increasing Populations of Gray and Harbor Seals in New England** *Populations Rising After Stocks Nearly Eliminated by State Bounties*

After being severely depleted by bounty programs in the early 1900s, gray and harbor seal populations in New England are growing. Based on results from seasonal seal surveys in southeastern Massachusetts by NOAA's Fisheries Service, scientists say the seals are returning to areas they inhabited in the past.

The fisheries service conducts the surveys during December through February, the pupping season for female gray seals (*Halichoerus grypus*). It is an ideal time to count the populations since the animals are very visible onshore to give birth and wean their young. The surveys also count harbor seals (*Phoca vitulina*), which give birth in the late spring.

Muskeget Island, off the western tip of Nantucket, is the largest pupping area for gray seals on the U.S. East Coast. In recent years, more than 1,000 pups have been born in a single year on the island, where as many as 3,000 seals congregate over the winter.

Gordon Waring, who leads the seal program at NOAA's Northeast Fisheries Science Center (NEFSC) laboratory in Woods Hole, Mass., said the region's gray seal population has increased markedly since the first aerial surveys of the Cape and islands were conducted by the Manomet Bird Observatory 25 years ago. Back then, only a few dozen gray seals were seen in Nantucket Sound, while several thousand harbor seals were sighted. Today, harbor seals are primarily seasonal residents, migrating north in the summer, while gray seals are year-round residents.

"We do not know how many seals there are in New England because most seal surveys focus on a specific area, but we do know local populations – especially of gray seals - have increased rapidly during the last few decades," Waring said. "Before 1980, harbor seals were primarily found around Cape Cod and in Nantucket Sound. Gray seals, whose main pupping site in the western North Atlantic is on Sable Island in Nova Scotia, were rare, but this situation has clearly changed. Gray seals are opportunistic and take advantage of shifting environmental conditions to recolonize historic sites."

Waring says gray seals now inhabit Wasque Shoal, off the eastern end of Martha's Vineyard, and nearby newly created sandbars. Coastal storms can alter access to sandy haul-out sites, and lead to the sudden appearance of large numbers of seals in places where they have not typically been.

"Wasque Shoal may have been a historic haul-out area," Waring said. "Also, the recent breach at Chatham has given seals another access into Chatham Harbor and Pleasant Bay."

The storm that breached the barrier beach closed the ocean access channel between north and south Monomoy, and also affected the distribution of seals.

The last comprehensive seal abundance survey was conducted in 2001 and extended from the U.S.-Canadian border in Maine to Long Island. This survey also tagged some seals to determine movement patterns. Although another large-scale survey has not been conducted, current NEFSC survey efforts focus primarily on southern New England, with abundance surveys on Long Island conducted in collaboration with the Riverhead Institute. Several sites along mid-coast Maine are also being monitored.

NEFSC conducts monthly aerial surveys of harbor seals and gray seals between October and May from Plymouth and Race Point at the tip of Cape Cod to Nomans Land off the western end of Martha's Vineyard. If weather permits, Waring also visits known seal habitats monthly by small boat, usually going out at low tide and at mid-day when the greatest number of animals are likely to be hauled out.

Counts of seals on land confirm the increased abundance and expanding distribution of both harbor seals and gray seals seen in the aerial surveys.

Waring says there are few historical records of the abundance and distribution of seals in New England. In the late 1800s, Maine and Massachusetts enacted seal bounty programs that contributed to local depletion of seal populations. The Maine bounty program was rescinded in 1905, while the Massachusetts bounty program ceased in 1962. Passage of the U.S. Marine Mammal Protection Act in 1972 fostered the recovery of seal populations, and the populations subsequently began to expand and return to historic habitats like Cape Cod and the Islands.

In the early 1980s, naturalist Valerie Rough reported that some gray seals on Muskeget Island had marks indicating they had been born on Sable Island, and that gray seals were again pupping on the island. Her research provided the first evidence that Canadian gray seals were recolonizing historic habitats, and also documented the rapid increase and year-round presence of gray seals in Nantucket Sound through the 1990s.

Waring and graduate students soon initiated more intensive studies of seals in the Cape Cod region. Graduate student Stephanie Wood, a Ph.D. candidate at the University of Massachusetts, currently works with Waring in the NEFSC research investigations. Genetic analyses indicate that the gray seals that pup in Nantucket Sound are closely related to Canadian gray seals. Population assessments reveal that gray seals are the most numerous species in Nantucket Sound, and that they now are using habitats previously used by harbor seals.

Many questions, however, still remain. Is the increasing population of larger and more aggressive gray seals having an impact on the harbor seal population? Are there any harbor seal pupping sites in southern New England? Why are some haul-out sites selected and others avoided?

Waring says the year-round presence of gray seals and the seasonal presence of harbor seals in Nantucket Sound and adjacent waters have resulted in both positive and negative interactions with humans. "Some people worry about competition with commercial and recreational fisheries since the primary diet of seals is fish, or the possibility that seal populations will attract sharks into coastal areas. Other people enjoy 'seal watching' and view the return of seals to Nantucket Sound as a positive event."

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**Related web links:**

Local Seals at a Glance:

[http://www.nefsc.noaa.gov/press\\_release/2009/SciSpot/SS0901/Local seals/index 2.html](http://www.nefsc.noaa.gov/press_release/2009/SciSpot/SS0901/Local%20seals/index%202.html)

Gray Seals: <http://www.nmfs.noaa.gov/pr/species/mammals/pinnipeds/grayseal.htm>

Harbor Seals: <http://www.nmfs.noaa.gov/pr/species/mammals/pinnipeds/harborseal.htm>