



Contact: Shelley Dawicki
508-495-2378
shelley.dawicki@noaa.gov

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Researchers Return to Study Gray Seal Pups on Muskeget, Monomoy

Researchers from the Northeast Fisheries Science Center (NEFSC) and colleagues spent a week in January on Muskeget and Monomoy islands off the southeastern Massachusetts coast gathering data from gray seal pups for studies of abundance and distribution as well as the health of the animals. Similar studies have been underway on the islands each January for the past five years.

Gray seal pupping season generally runs from mid-December to early February, with peak time in mid-January. The team on Muskeget Island off Nantucket, the largest gray seal breeding and pupping colony in the U.S., collected samples from 50 pups during field operations January 15-19.

“This year we were able to reach our sampling goal of 50 pups on Muskeget,” said Kimberly Murray, coordinator of the seal research program at NOAA’s Northeast Fisheries Science Center (NEFSC) laboratory in Woods Hole, Mass. “We also used a drone fitted with a camera in a pilot project to test how we could use this technology to conduct a full survey of pups on the island.” In addition to documenting abundance and distribution, the images can also document adult seals, providing data on brand marks or entanglements.

The team on Monomoy, an island near Chatham on Cape Cod that is part of the Monomoy National Wildlife Refuge, captured and sampled 71 pups during two trips to the island this year, January 9-13 and January 30-31. Pups on Monomoy seemed a bit younger than those on Muskeget, prompting researchers to return to sample more animals in late January. No drones were used on Monomoy.

Once captured by project researchers, each weaned gray seal pup is measured and weighed. Biological samples, including blood, mucous swabs, hair and skin, are taken for use in health assessments and for stable isotope, contaminant and genetic research. The samples will reveal information about stock health, gray seal ecology, and habitat use.

Each captured seal is also outfitted with a numbered flipper tag for identification. The entire process, from capture to release, usually takes less than 20 minutes. Pups are captured on land; no captures are made in the water.

In January 2016, marine mammal researchers captured, tagged, sampled, and released 127 seals at the two locations. In January 2015, the teams collected samples from 126 weaned gray seal pups on the two islands.

Researchers from MIT expanded their health studies in 2016 with a focus on the seals at Monomoy. The researchers are conducting long-term studies of the influenza A virus in gray seals to understand the prevalence of the virus in the population, how it transmits, and if it potentially affects other wildlife populations.

“Our goal this year was to resample as many of the animals we tagged earlier as possible,” said Wendy Puryear of MIT, part of the Jonathan Runstadler Laboratory that is leading the project’s gray seal influenza work. The team has consistently found evidence of influenza A virus each year since their studies began in January 2013, although the specific subtype of virus has not yet been determined.

By recapturing and resampling seals tagged earlier in the season, researchers can learn more about the disease progression and transmission between animals, and why some animals are more susceptible than others.

The Monomoy seal team had hoped to capture, tag and release 150 unique, already weaned animals this year, but weather, scheduling and the departure of the weaned pups prevented sampling more than 71 pups.

Stephanie Wood, a seal researcher in the NEFSC’s Protected Species Branch, is using the drone imagery from Muskeget to continue research on gray seal abundance in the Northeast. She is also using a video taken by a remote camera made available by explore.org to monitor births and behavior on Maine’s Seal Island, the second largest gray seal pupping colony in the U.S. The goal is to monitor the timing and production of pups at different breeding colonies in Massachusetts and Maine.

Muskeget is a privately owned island six miles northwest of Nantucket. Monomoy National Wildlife Refuge is also a primary gray seal haul-out on the U.S. East Coast, although the number of pups born there is much lower than on Muskeget.

The scientific team for the 2017 gray seal pup studies comprised researchers from NOAA’s Northeast Fisheries Science Center (NEFSC), Massachusetts Institute of Technology, Marine Mammals of Maine, Atlantic Marine Conservation Society, National Park Service, and the Woods Hole Oceanographic Institution/Northwest Atlantic Seal Research Consortium. Monomoy National Wildlife Refuge is operated by the U.S. Fish and Wildlife Service.

The team has a marine mammal scientific research permit issued by NOAA’s National Marine Fisheries Service (#17670-03) to the Northeast Fisheries Science Center, and Monomoy National Wildlife Refuge special use permit (#16-MNY-01) to work on that island. This research was funded in part by the National Marine Fisheries Service Office of Science and Technology.

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Related links:

2016 Gray Seal Pup Study: http://www.nefsc.noaa.gov/press_release/pr2016/scispot/ss1602/

Seal research at the NEFSC: <http://www.nefsc.noaa.gov/psb/seals/>

Seal Cam on Maine’s Seal Island: <http://explore.org/live-cams/player/seal-pups-cam>