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## Scientists to Try Cape Cod's First Tagging and Sampling Effort on Adult Gray Seals

Marine mammal researchers from the Northeast U.S. and Canada plan to capture, tag, sample, and release adult gray seals on Cape Cod as part of on-going research to learn more about the gray seal population, including their movements, habitat use, health and diet. The six-day field study, the first sampling and tagging project involving adult gray seals on Cape Cod, will be conducted June 12-17 around North Beach off Chatham and near Jeremy Point in Wellfleet in Cape Cod Bay.

Gordon Waring, who heads the seal research program at the Woods Hole Laboratory of NOAA's Northeast Fisheries Science Center (NEFSC), will serve as chief scientist. "We need to know as much as we can about these animals now that they are living here in greater numbers. Over these six days, we hope to learn how to work with them effectively in the field, as well as begin to build a data set on their condition and behavior," said Waring.

Many of those on the scientific team have previously worked together on similar studies in Chatham and in Maine involving harbor seals, which are smaller than gray seals. Gray seals and harbor seals are the most common seal species on Cape Cod and the Islands; gray seals are resident year-round while harbor seals are primarily seasonal residents, present from fall through early spring before migrating north in the summer.

Objectives of the study are to describe gray seal movements, to examine how often they return to previously occupied locations, and to better understand diving behavior. This information can then be used as a basis for understanding gray seal habitat use, including possible identification of foraging areas or areas of overlap with human activities and important predators like white sharks. The study will also obtain health assessment data and improve live capture methods.

The team hopes to capture up to three adult gray seals each day from around haul-out areas using a research gillnet set from small boats - three from the NEFSC's Woods Hole Laboratory, one boat from the University of Maine and another from the International Fund for Animal Welfare. The seals are very skittish and spend most of their lives in the water; capturing them for the study will be a challenge.

Once captured, each seal will be pulled ashore onto the beach or sandbar, placed in a protective hoop net and transferred by boat to a land-based team for handling, sampling and tagging.

On land, the seals will be measured and weighed. Biological samples will be taken for use in health assessments, diet analyses, and genetic work intended to help distinguish this particular stock from others. Finally, the seals will be outfitted with flipper tags for identification. As many as seven seals will also be fitted with more sophisticated tags that will gather and report data over time.

Once the biological sampling and tagging work is completed and the seals have recovered from sedation required for safe handling, they will be released back into the water. The entire process for each seal, from capture to release, is expected to take roughly two hours. A marine mammal veterinarian licensed in Massachusetts will be present each day.

The team will have both GPS tags and a satellite tag. The GPS tags, developed by the Sea Mammal Research Unit at the University of St. Andrews (Scotland), work off a mobile phone, recording data on the

animal's dives, haul-outs, and locations. The information is stored in memory and also "phoned in" whenever the animal is above water and in range of a cell phone tower.

The satellite tag logs detailed information on behavior and location, relaying the data through polar orbiting satellites and then to a processing station. Both GPS and satellite tags typically stay in place until the animal molts.

The scientific team comprises researchers from the Northeast Fisheries Science Center (NEFSC)'s Woods Hole Laboratory, NOAA's Northeast Regional Office (NERO), Duke University, Woods Hole Oceanographic Institution (WHOI), Provincetown Center for Coastal Studies (PCCS), and Canada's Department of Fisheries and Oceans (DFO). Four stranding response organizations are also participating: the International Fund for Animal Welfare (IFAW) on Cape Cod; the Riverhead Foundation for Marine Research and Preservation on Long Island, N.Y., Marine Mammals of Maine, and the University of New England. The team has a marine mammal scientific research permit issued by NOAA's National Marine Fisheries Service (#17670) to the Northeast Fisheries Science Center, and special use permits issued by the National Park Service, Cape Cod and Monomoy National Wildlife Refuge.

The gray seal study on Cape Cod, part of the ongoing seal research program at NOAA's Northeast Fisheries Science Center (NEFSC), is also a component of a much larger, multi-year survey of marine mammals, sea turtles and seabirds along the entire U.S. East Coast which the NEFSC is leading on behalf of several federal agencies. The field work for that project, the Atlantic Marine Assessment Program for Protected Species (AMAPPS), includes aerial and shipboard surveys as well as field programs. The Bureau of Ocean Energy Management (BOEM) is providing funding for AMAPPS projects, including the seal work on Cape Cod.

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