



2016 Northern Fur Seal Tracking Study

Report #4, October 19, 2016

Background

The northern fur seal population on the Pribilof Islands, Alaska has been experiencing an unexplained decline since the mid-1970s. Northern fur seals may be one of the most studied marine mammal species and yet significant data gaps still exist in our understanding of relationships between northern fur seals and their primary prey, walleye pollock. Because northern fur seals forage over a vast range (> 200km from the colony), one major obstacle is aligning studies of fur seal foraging behavior with concurrent measures of prey availability. As part of a larger research program, NOAA Office of Research and NOAA Fisheries have teamed up with Saildrone Inc. to use two autonomous, wind and solar powered, research vessels (Saildrones) to examine fur seal foraging behavior in relation to prey availability. If successful, this project could be a significant step forward for our understanding of how the distribution and abundance of prey influence fur seal behavior, foraging success, and population trends. And these data, integrated within our larger northern fur seal research program, will be used to help make informed management and conservation decisions, which is vital as this population continues to decline. This work was conducted under authority of MMPA Permit for Scientific Research No. 14327 issued to the NMFS/AFSC National Marine Mammal Laboratory.

Highlights

Twenty-nine of the 30 instrumented northern fur seals were recaptured between September 22 and October 3, 2016. The tracking instrument for the remaining fur seal stopped transmitting on September 14 while she was on a foraging trip. This individual was not resighted at the rookery during the recapture efforts. Seventeen of the recaptured females were caught with their pups, giving us the ability to use pup growth rate as a metric to compare foraging success among individuals. Over the tracking period, on average adult female fur seal mass remained constant (average mass change: -0.6 kg) and pups gained 5.5 kg (mean mass: 11.6 kg).

Based on estimated movement tracks from Argos position fixes and GPS locations the fur seals completed on average 9 foraging trips (range: 6-11) between July 14 and October 3 (Figure 1). All data presented in this report are preliminary analyses and subject to change.

Analysis of the detailed dive and movement data recorded on the tracking instruments is expected to take several months. Once complete, the fur seal behavior data will be merged with the walleye pollock distribution and abundance data collected by the Sairdrones echosounders.

[Additional Information](#)

Additional information about the 2016 Sairdrone Mission can be found at:

<http://www.afsc.noaa.gov/news/Sairdrone.htm> (Project press release)

<https://youtu.be/EhoI PRD-UJ4> (Project launch broadcast)

http://www.afsc.noaa.gov/Science_blog/FurSeals_2016_main.htm (Alaska Fisheries Science Center Dispatches from the Field)

<http://www.pmel.noaa.gov/itae/> (Pacific Marine Environmental Laboratory Sairdrone updates)

Figure 1. Estimated movement tracks of 22 adult female northern fur seals between July 14 and October 3 in relation to the Saldrone prey survey grid (orange thick lines, July – August). Fur seal tracks are based on unfiltered Service Argos locations and GPS position fixes. Each colored line represents a different individuals' movements over six to eleven foraging trips. All data presented in this report are preliminary analyses and subject to change.

