



2016 Northern Fur Seal Tracking Study

Report #1, August 5, 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 temporally and spatially 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 Saldrone Inc. to use two autonomous, wind and solar powered, research vessels (Saldrones) 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

Thirty adult female northern fur seals were captured on St. Paul Island between July 14 and July 22 (Figure 1). Mother-pup pairs were captured, weighed, and samples were collected for an additional health study. Each adult female fur seal was equipped with a tracking instrument to measure at-sea behavior. Instrument types varied and included SPLASH10-AF tags (Fastloc), SPLASH10 tags, and TDR10 Fastloc tags (manufactured by Wildlife Computers, Redmond, WA; use of trade names does not imply endorsement by the National Marine Fisheries Service, NOAA). All instruments store dive behavior including dive depth and dive duration. The SPLASH instrument models provide position estimates through Service Argos and the Fastloc models collect GPS locations at 15 minute intervals. The TDR10 Fastloc tags only record data (no transmissions) so those fur seals will not be included in any preliminary analysis until the instruments are recovered. We will attempt to recover all tracking instruments in late September to recover the recorded data. All data presented in this

report are preliminary analyses and subject to change.

Based on estimated movement tracks from Argos position fixes and GPS locations each fur seal completed one to two foraging trips between July 14 and August 1 (Figure 2). Foraging trips were generally to the north of St. Paul Island. The two Sairdrones started surveying the fur seal foraging area to measure walleye pollock abundance on July 15. They are working in opposite directions along a pre-set grid (Figure 2). If needed, this grid will be adjusted to encompass the foraging areas used by fur seals tracked this summer.

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/EhoIPRD-UJ4> (Project launch broadcast)

Figure 1. Study area (St. Paul Island, AK) and capture location (green circle) for the 2016 adult female northern fur seal tracking study.

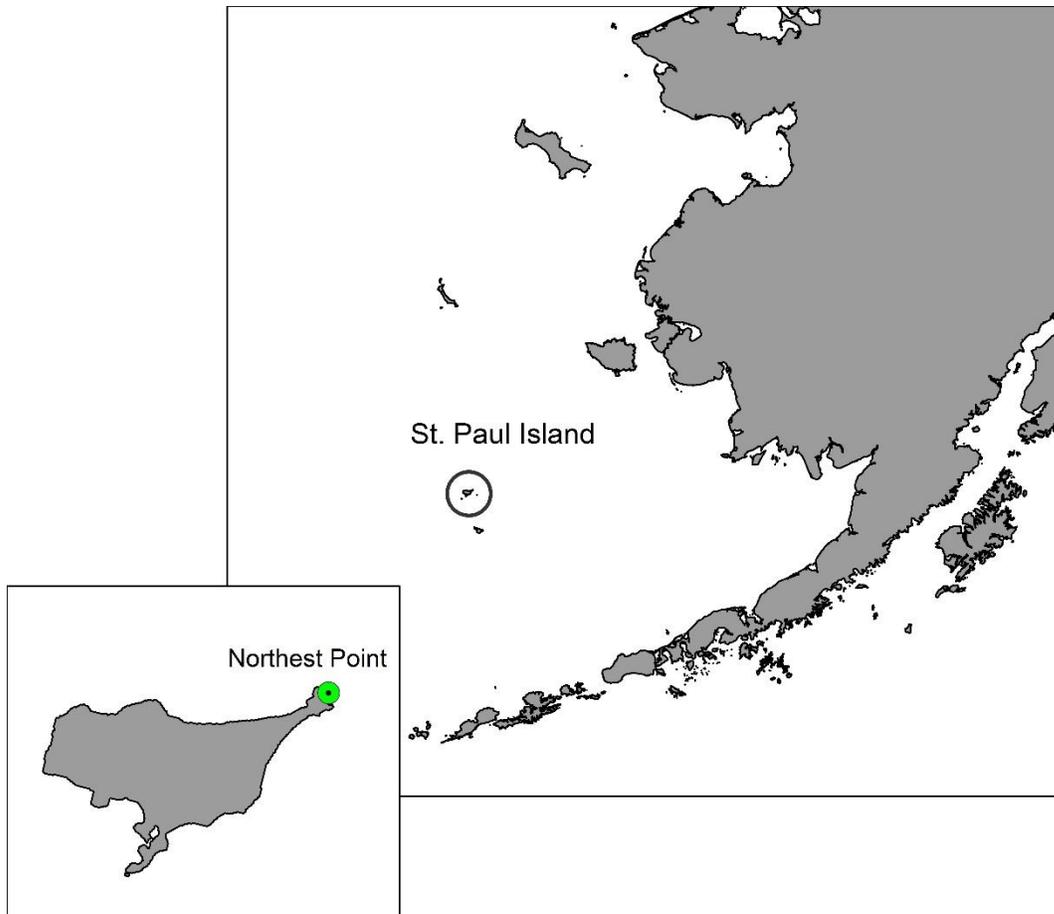


Figure 2. Estimated movement tracks of 8 adult female northern fur seals in relation to the Saldrone prey survey grid (orange thick lines) between July 14 and August 1. Fur seal tracks are based on Service Argos locations and GPS position fixes. Each colored track represents a different individual's movements over one or two foraging trips.

