



BELA Muskox Brief

Comparisons of Population Dynamics and Ecology of Muskoxen in and adjacent to Bering Land Bridge National Preserve and Cape Krusenstern National Monument

Field research for this project began in 2009 and will end in 2013. This project compares the reproduction, adult female survival, sex/age structure, health, and growth rates of the northern Seward Peninsula and Cape Thompson muskox populations. Both populations originated from re-introduced stock from Nuniuvak Island released in these two areas four decades ago, but have since experienced somewhat different population dynamics. Muskox populations on the Seward Peninsula continue to grow, while those in the Cape Thompson region appear to be declining. The project is run by Layne Adams of the USGS, in collaboration with Joel Berger of the Wildlife Conservation Society and the University of Montana, and NPS staff biologists Brad Shults, Marci Johnson, and Jim Lawler.

The studies on the northern Seward Peninsula are focused on areas east of Shishmaref including the Serpentine, Goodhope and Cripple River drainages, but some animals have traveled long distances since being collared. Similar long-distance dispersals have been noted by muskox from the Cape Thompson study area.

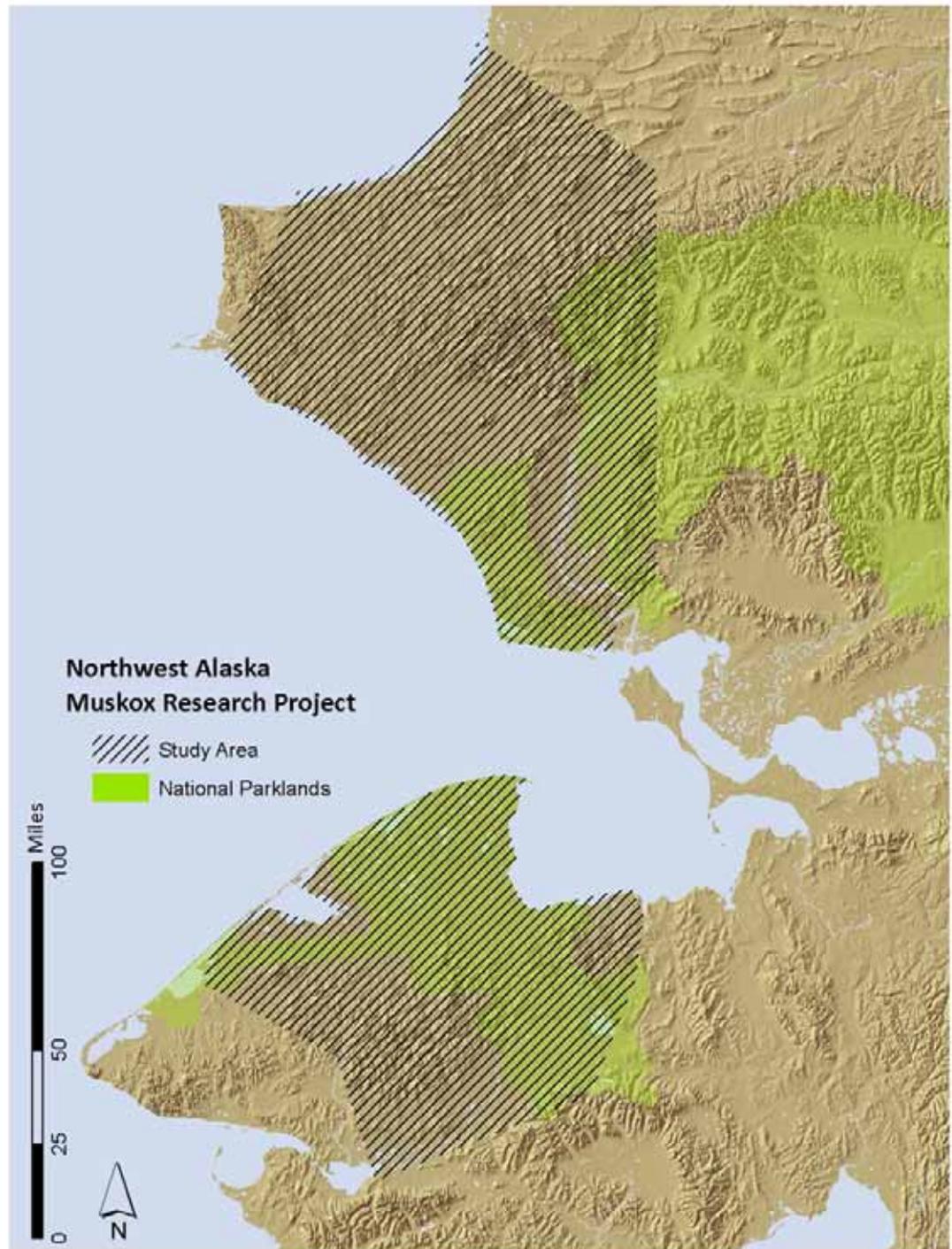
Currently, there are 24 radio-collared adult females in and around Bering Land Bridge National Preserve and 23 collars deployed in Cape Krusenstern National Monument. Sixteen of these collars record locations every four hours using very accurate Global Positioning Systems (GPS) technology. To date, the project has accrued over 1200 locations from aerial radio-tracking and almost 50,000 locations from the GPS collars. These animals can be identified in the field by a yellow or blue flag with a number that is attached to the collar.

Initial findings of the study included a surprising difference in dentition between the two study

areas. Since discovering that most animals captured from the Cape Thompson population had some broken incisors, investigators have developed more questions than answers as the study progresses. Muskox from the Seward Peninsula tend to be heavier than those from Cape Thompson, but productivity is similar in the 2 areas. Survival of muskox appears to be similar between the 2 population, but lower than expected for large, long-lived hoofed animals. In many instances, it appears brown bears were involved in the muskox deaths, but scavenging by bears is probably common, limiting our ability to determine the true cause of death. The project will continue to closely monitor the survival of the animals as a high priority.

The project will be capturing additional animals in late March of this year after the harvest season closes. This work will be preceded by a muskox population census and followed by a composition survey by NPS and ADF&G biologists. Radio-tracking collared animals will also continue every 2-4 weeks this year; NPS staff have notified the Shishmaref IRA prior to all flights in the area and try very hard to complete the work quickly and avoid areas being used by subsistence users.

Collars used in the study are designed to



A herd of muskox observed from an airplane, January 2010, during a herd composition survey flight.

automatically release at the conclusion of the study in June of 2013. A final report on the research, will be completed by March 2014. The project staff has been fortunate to work with individuals in Shishmaref including Fred Goodhope, Jr. who has assisted Joel Berger in the field and Fred Eningowuk of the IRA, encourages students and teachers to get involved, and appreciates the interest of local residents.