

Project Summary
Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: Novelty in a Predator-Prey System Facilitated by Humans and Climate: Polar Bears, Grizzly Bears, and Muskoxen

Type of Project: Research
Discipline: Natural Resources
Funding Agency: National Park Service
Other Partners/Cooperators: Colorado State University
Effective Dates: 4/1/2015 - 12/30/2019
Funding Amount: \$153,157

Investigators and Agency Representative:

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Project Abstract: The rarest large mammal in any NPS unit is muskoxen, a species that once roamed Beringia with woolly mammoths. Now, however, muskoxen confront twin challenges - warming temperatures and long-instilled 'once-adaptive' behaviors that today create conflicts with humans. Although muskoxen are becoming an increasingly visible and a celebrated Arctic species, their populations are no longer uniformly increasing. This project capitalizes on three key opportunities developed by the research efforts during the past 7 years to enhance and inspire an understanding of Beringia systems: 1) expanding infrastructure, trust, and shared expertise, that involves local citizens and scientists within and beyond protected areas in both Chukotka and Alaska; 2) the novelty of a challenging predator-prey system with bears (polar and grizzly); and 3) assessment of effects from harvest-based manipulations of adult sex ratios, and discovery of pre-conditions leading to additional human-muskoxen conflicts. The common thread here is predator-prey interactions. If it can be first understood why and how the ecology of muskoxen changes, expected outcomes of management actions can be amplified to improve conservation.

Outcomes with Completion Dates: December 30, 2019

Keywords: muskoxen, polar bears, grizzly bears, predator-prey systems, human influences, Trans-Beringia, United States, Russia, climate change, National Park Service, Colorado State University