

Project Summary

Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: Elk Sightability at Yellowstone NP

Discipline: Natural
Type of Project: Technical Assistance
Funding Agency: National Park Service
Other Partners/Cooperators: Utah State University
Effective Dates: 9/15/2014 - 6/30/2018
Funding Amount: \$100,000

Investigators and Agency Representative:

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Project Abstract: The northern Yellowstone elk herd is one of the most studied and controversial elk herds in North America. Much of the controversy emanates from disagreement over herd size followed by policy and management decisions. Debates about population size date back to the early 1900s and continue into the present. For example, the last official count (2013) reported 3,915 elk, yet other survey work (classification flights identifying cows, calves and bulls) counted well over 4,000 elk. Further, previous work in the 1980s assessed count accuracy and found on average 32% of the elk/survey were missed, but up to 50% may be missed depending on survey conditions. Currently managers have no idea how good a particular count is: 50-68% accurate (or even higher under good counting conditions). Therefore, the purpose of the proposed work is to develop a quantitative model to estimate accuracy of the annual winter northern Yellowstone elk count. This model will be used as a tool for managers to more accurately determine herd size and make better decisions about management.

Such a model was developed in the 1980s but is no longer useful. Since this first model was developed forest fires have altered vegetative cover, weather patterns reduced snowfall, and predators and human hunting have changed elk behavior - all factors that affect how many elk are observed on population surveys. Therefore a new model, factoring in these altered conditions, needs to be developed.

Preparatory work that involves Yellowstone National Park (YNP) and interagency partners (Montana FWP, USGS, and US Forest Service) should begin in late fiscal year (FY) 2014 and continue through the winter of 2014- 2015. This work will include selection of a graduate student to carry out model development, develop other relationships necessary to carry out the work, and gather preliminary data. Beginning in the winter of 2015-2016 continuing through the winter of 2016-2017 the Principal Investigator (PI) and graduate student will work in the field with YNP staff and other interagency elk managers to develop a model of elk sightability that is rigorously reviewed and compared against other such models. The finished model should not be overly complex with the goal of being easily used and interpreted by interagency elk managers.

Outcomes with Completion Dates: Products due to all interagency partners will be the software and/or program created to estimate northern Yellowstone elk herd size. In addition to a user friendly model, a report and/or MS Thesis detailing the work involved to create this model, with results from the two field seasons, due to interagency partners at the close of the project (June 30, 2018).

Keywords: Yellowstone National Park, Utah State University, elk, population survey