

Rocky Mountains Cooperative Ecosystem Studies Unit
Project Summary

Project Title: An assessment of informal trails and visitor created sites in Rocky Mountain National Park

Task Agreement: P18AC01015 Mod: 1
Discipline: Interdisciplinary
Type of Project: Technical Assistance/Research
Funding Agency: National Park Service
Other Partners/Cooperators: Utah State University
Student Participation: Yes
Effective Dates: January 1, 2018 to December 31, 2021
Funding Amount: \$65,100

Investigators and Agency Representative:

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Project Abstract: Recent research has revealed that Grand Teton National Park sits at the center of at least 5 long-distance migration routes for mule deer (*Odocoileus hemionus*) that span two states. Migratory species face an increasing assortment of threats to their continued ability to make seasonal movements across the landscape from fencing, roadways, and continued human development and habitat loss. As a seasonal resident in the park, the long-term conservation of mule deer rests on identifying crucial migratory habitats, threats to their continued use, and implementation of actions to conserve them. Additionally, chronic wasting disease (CWD) is a contagious, fatal neurologic disease of cervids, for which there is no known treatment, and is endemic to the southeast portion of Wyoming. Over the last 30 years CWD has been slowly advancing westward toward the Greater Yellowstone Ecosystem (GYE) and recently has been detected in deer management units in or adjacent to where some Grand Teton mule deer spend the winter. Understanding the potential pathways through which CWD may spread to Grand Teton and Jackson Hole where elk are fed on the National Elk Refuge and 3 state operated feedgrounds would inform concurrent efforts aimed at mapping the spatial risk of CWD spillover from mule deer to feedground elk and identifying areas to focus disease surveillance.

Since 2013, the park has captured and radio collared 28 mule deer and amassed a large GPS location data set detailing their migratory movements. Through this project, we propose to enter into a cooperative partnership between the NPS and Utah State University to analyze the existing mule deer data set and collect additional data with the goal of identifying all of the major mule deer migration corridors leading out from Grand Teton as well as potential pathways for CWD transmission.

Substantial involvement is anticipated through the terms of this cooperative agreement between the NPS and the Recipient. NPS staff will be involved in field efforts (e.g. deer captures, collar recovery, etc.), data evaluation/analysis, and report/manuscript preparation and review. The Recipient will be essential to directing the work of the graduate student, selecting and performing appropriate statistical and spatial analyses, student development, and completion of final products. The NPS will provide logistical support, field supplies and equipment (e.g. radio collars, telemetry equipment, capture supplies, etc.), technical expertise and assistance, and transportation while working in the field. The NPS and the recipient will work together to refine field and analysis methods. Data and other information collected during this project will be the property of the NPS, but may be disseminated via a graduate student thesis, NPS reports, or peer-reviewed scientific publications, some of which may be jointly authored by NPS staff, the Recipient, and the Recipient's graduate student.

The public purpose of this project is the conservation, management, and protection of wildlife resources that are seasonal residents of Grand Teton National Park. This cooperative project will detail the migration routes that mule deer use to move between summer ranges in Grand Teton and winter ranges beyond park boundaries as well as identify pathways for transmission of CWD. Acquiring these data is the first step in estimating risk of westerly movement of CWD pathogen as well as ensuring that migratory mule deer continue to persist in northwest Wyoming and eastern Idaho.