

Project Summary

Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: Develop Spatially Explicit Gunnison Sage-grouse Winter Habitat Models

Discipline: Natural
Type of Project: Research
Funding Agency: National Park Service
Other Partners/Cooperators: Colorado State University
Effective Dates: 2/28/2013 - 3/31/2014
Funding Amount: \$5,000

Investigators and Agency Representative:

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Project Abstract: Research focusing on the closely related species, Greater Sage-grouse (*Centrocercus urophasianus*), has shown that large losses of key winter areas can result in dramatic declines in sage-grouse populations. More recently, anthropogenic developments within sage-grouse winter habitats in Wyoming and Alberta have been linked to population declines, and telemetry studies have shown that birds avoid such developments during winter. In severe winters, a lack of suitable winter habitat may be a limiting factor for grouse populations. Thus, winter habitat could be critical to the long-term persistence of Gunnison sage-grouse (GUSG), particularly within the Gunnison Basin, the only remaining population that may be viable.

To date, no assessments of winter habitat requirements for GUSG have been conducted. To address this, we have collected a limited number of winter locations from radio-collared GUSG during nine winters of this study. Our CSU-NREL/USGS cooperators believe that we have adequate winter data to assess winter habitat requirements and produce rigorous statistical models. Winter models will help to identify key resources that are required to ensure winter habitat is not limiting to this population. Such models will provide a better understanding of year-round habitat needs for GUSG.

Our objective is to initiate a new analysis project using the technical assistance of CSU-NREL researchers to develop spatial variables thought to be important predictors of GUSG winter habitat selection using the existing GUSG location data and the CSU-NREL/USGS-BRD- developed sagebrush habitat map products. These spatial variables will ultimately be used as covariates in a winter habitat modeling analysis, and developed models will be spatially applied to the study area to map critical GUSG winter habitat.

Outcomes with Completion Dates:

The finalized winter habitat use models and scientific manuscript will be delivered upon completion of this project. Ultimately, a peer-reviewed scientific journal publication will be developed.

Keywords: Colorado State University, Natural Resource Ecology Laboratory, Curecanti National Recreation Area, Gunnison sage grouse, models, winter habitat