

**Project Summary**  
**Rocky Mountains Cooperative Ecosystem Studies Unit**

**Project Title: Assessing the Effectiveness of Core Areas for Greater Sage-Grouse Conservation: Implications of Future Climates and Oil and Gas Development**

**Discipline:** Natural  
**Type of Project:** Research  
**Funding Agency:** USGS  
**Other Partners/Cooperators:** Colorado State University  
**Effective Dates:** 9/30/2014 - 9/30/2019  
**Funding Amount:** \$190,389 [FY15: \$94,458; FY14: \$95,931]

**Investigators and Agency Representative:**

USGS Contact: Zachary Bowen, USGS Fort Collins Science Center, 2150 Centre Ave, Bldg C, Fort Collins, CO 80526; 970-226-9218; bowenz@usgs.gov

Investigator: Cameron Aldridge, Colorado State University, 1499- Natural and Environmental Sciences, Fort Collins, CO 80523; 970-226-9433; Cameron.Aldridge@ColoState.edu

**Project Abstract:** The objectives of this research are to explicitly model 1) habitat loss and fragmentation resulting from future oil and gas and associated road infrastructure development and 2) changes in habitat suitability resulting from climate change scenarios, and 3) possibly include the effects of increasing fire resulting in habitat loss, pending data availability. Using this information to 4) assess the resulting population outcomes within the spatially explicit population model and 5) evaluate the adequacy of habitat protections (i.e., core areas) under individual and combinatory development and climate scenarios.

**Keywords:** sage grouse, model, fragmentation, habitat loss, oil and gas, climate change, USGS, Colorado State University