

## **Project Summary**

### **Rocky Mountains Cooperative Ecosystem Studies Unit**

**Project Title:** Understanding Future Scenarios Regarding Landscape Conservation for Sage Grouse in Relation to Habitat and Development of Energy Resources

**Discipline:** Natural  
**Type of Project:** Research  
**Funding Agency:** US Fish and Wildlife Service  
**Other Partners/Cooperators:** Montana State University  
**Effective Dates:** 8/23/2013 - 8/31/2015  
**Funding Amount:** \$100,110

**Investigators and Agency Representative:**

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**Project Abstract:** As climate changes across the range of the greater sage-grouse (*Centrocercus urophasianus*), it might be expected that grouse will be affected primarily by shifts in habitat presence and quality. Climate can also affect demographics more directly via fledging rates, as well as winter survival in northern parts of the range. Prime habitats may degrade with climate change, and marginal ones might improve. Modeling such projected changes will be critical to the spatial and temporal optimization of future habitat conservation efforts. Concomitantly, however, anthropogenic changes across the landscape will also occur. It will do little good for grouse if future prime habitats are degraded by activities such as road developments, exurban housing, sod-busting, intensive energy development, loss of ranching opportunities, and the like. Energy development is considered to be a key pressure on USDI-Bureau of Land Management (BLM) lands across the west, and these lands are critical to the conservation of greater sage-grouse. Energy development can have a somewhat direct demographic effect, as well as degrade and fragment habitats. Recently, these interactions have been thoroughly summarized and the need to better understand the future effect of energy development on greater sage-grouse has been identified (U.S. Fish and Wildlife Service, 2013).

Together the Montana Institute on the Environment and USFWS will investigate anthropogenic influences from energy development on greater sage-grouse. We will gather information from the BLM's Resource Management Plans (RMP) that project the future of leasing of lands for energy development. We will analyze to what extent the density of leases affects actual habitat degradation as measured by such parameters as acres of habitat developed (e.g., in well pads and roads), miles of roads constructed or improved, miles of new power lines, and number of turbines.

**Outcomes with completions dates: August 31, 2015**

**Keywords:** climate change, energy development, sage grouse, US Fish and Wildlife Service, Montana State University