

Landscape Ecologist

USDA-ARS, Rangeland Management Specialist GS-0454-12/13/14/15, Burns, OR

Assigned Responsibility

The incumbent is a Research Ecologist/Research Rangeland Management Specialist with the Range and Meadow Forage Management Research Unit in Burns, Oregon. The overall mission of the Research Unit is to provide service to private and public land managers. This research is a Component of the ARS National Program 215 - Pasture, Forage, and Rangeland Systems, and is directly related to NP 215 Action Plan Problem Statements B1, B2, and C1. The emphasis of the incumbent's program will be to conduct research that bridges our understanding of ecological processes and factors at the plant community scale with those operating at larger scales typical of vegetation management activities in the western US. The incumbent conducts independent research to identify environmental factors affecting success of rangeland vegetation management, develops ecologically-based strategies necessary to mitigate these factors, and predicts results of recommendations at the landscape scale. The incumbent establishes and maintains collaborations with scientists from university, private industry, and federal and non-federal agencies on technical matters and represents ARS in their own field of research expertise. Transfers technology through scholarly publications, popular press articles, patents, and presentations to scientific and industry groups.

Research Objectives and Methodology

The incumbent's research objectives are to use field research and modeling to identify variability in biotic and abiotic factors affecting success of rangeland vegetation management practices and treatments, develop ecologically-based management strategies to mitigate factors limiting management success, and evaluate and predict results of management recommendations at landscape scales. Methods and tools used to achieve objectives may include using knowledge of plant community ecology to develop and test hypotheses predicting ecological drivers of restoration success across spatial scales, measurement of climatic and edaphic factors from plot to landscape scales, predictive modeling of environmental factors influencing rangeland fuel abundance in space and time, and spatial and temporal optimization of management tools needed to produce multiple ecosystem services.

Expected Results

Results of this research will help managers to determine science-based strategies for large scale restoration and management, particularly as relates to post-fire rehabilitation efforts; management of rangeland fuels; and balancing the use of management tools such as prescribed fire, mechanical treatments, and herbicides with the needs of sagebrush obligate wildlife species across land ownership boundaries.