

## **\*\*Natural and Anthropogenic Landscape Features Influence Greater Sage-Grouse Seasonal Habitat Selection in Carbon County, Montana**

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Quantifying resource selection by animals assists wildlife and land managers in making habitat decisions that can be used for restoration and conservation planning. Greater sage-grouse (*Centrocercus urophasianus*; hereafter ‘sage-grouse’) are the focus of much research and conservation efforts owing to their obligate relationship with sagebrush (*Artemisia* spp.) and dramatic population declines over the last 50 years. Sage-grouse typically utilize different habitats during breeding, summer, and winter seasons and resource use varies throughout the home range of an individual animal. Our objective was to identify natural and anthropogenic landscape features that influence resource selection for female sage-grouse during breeding, summer, and winter seasons. We used data from 85 GPS-tagged female sage-grouse in Carbon County, Montana and Park County, Wyoming from April 2018–2020. We examined resource use based on intensity of use by implementing a Resource Utilization Function (RUF) for each season. We identified natural landscape features from remotely sensed data and identified anthropogenic features such as roads, oil and gas development, agriculture, and houses. We evaluated each variable at multiple scales ranging from 100 m to 3200 m across each season. We found differences in sage-grouse resource use based on scale and season. Wildlife managers should consider not only seasonal habitat used by sage-grouse, but also those areas that are used most frequently and the habitat characteristics associated with increased areas of sage-grouse use.