Spatial and Temporal Habitat Characteristics Driving Greater Sage-Grouse (*Centrocercus urophasianus*) Habitat Use in Central Oregon

Mark T. Freese[1], Richard F. Miller[1], Steven L. Petersen[2] and Andrew C. Yost[1]; (1) Oregon State University, (2) Brigham Young University; Contact Author Email: freese_30@yahoo.com

Greater sage-grouse use a diversity of habitats to complete their life-cycle, during which they display complex movements across landscapes with home ranges that can exceed 2,700 km^2. Since seasonal habitat characteristics and habitat suitability are currently defined at the stand level, management of sage-grouse, a species utilizing broad landscapes, has proven to be difficult. The objective of this research is to test and describe multi-scale habitat characteristics associated with sage-grouse habitat use. Beginning in 2006, we radio collared 58 sage-grouse in Central Oregon and tracked them for two consecutive years across a 31,416 ha research area. Community cover types were mapped and site-scale habitat characteristics were measured, which included community cover, forb density, and shrub and grass height. Landscape-scale variables of slope, aspect, curvature, flow accumulation and direction, solar index, and an Integrated Moisture Index (IMI) were created using a digital elevation model (DEM). Community and landscape variables were combined to determine, which variables were associated with sage-grouse habitat use. By determining the multi-scale habitat characteristics associated with habitat use, we can better predict key habitat areas on the landscape. This allows us to allocate limited management resources more effectively, prioritize areas for restoration, and more effectively implement habitat conservation measures that benefit sage-grouse populations.

2009. 62nd Society for Range Management Annual Meeting. Paper No. 170-1.