



Predicting Sage-Grouse Nesting Habitat at Multiple Spatial Scales in Southeastern Oregon

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During the past century, greater sage-grouse (*Centrocercus urophasianus*) have declined in both population density (by at least 17-47% since 1930) and extent (by at least 57%). This has resulted in a heightened awareness of habitat suitability and availability, including conservation and restoration of nesting habitat. The purpose of this study is to characterize sage-grouse nesting habitat across a heterogeneous landscape comparing known nest sites with random locations. Habitat surrounding 250 random point locations were compared with the same number of nest sites identified and mapped between 1995-2003 in southern Oregon. Habitat patches surrounding each site were mapped in ArcGIS. Patch type, habitat patch richness, and fractal dimension were calculated for 25, 50, 100, 200, 500, and 1000 m radial distances surrounding each nest site and random point location. At broader scales, patch richness and fractal dimension increased compared to random locations. Mountain big sagebrush patches occurred more frequently at broad scales than random sites. These data indicate that scale significantly influences nest site prediction across heterogeneous landscapes. Managers can use these data to identify suitable nesting habitat and conserve sites important for sage-grouse recruitment.

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