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Eric Thacker, Terry Messmer, Beth Burritt

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By Eric Thacker, Terry Messmer, and Beth Burritt

### THE PROBLEM

Herbaceous cover estimates obtained using the line-point intercept and Daubenmire canopy cover methods may not be comparable to monitor the habitat of greater sage-grouse (*Centrocercus urophasianus*; Figure 1). Monitoring sage-grouse habitat is important because sage-grouse populations have been declining over the last five decades<sup>1</sup> and habitat loss and degradation have been cited as major factors in this decline<sup>2,3</sup>. An important component of sage-grouse management is the evaluation of herbaceous vegetation response to projects implemented to improve habitat quality<sup>4</sup>.

Sage-grouse researchers recommended using standardized methods to assess sage-grouse habitat quality<sup>4</sup>. This would allow valid comparisons among years, areas and populations<sup>4</sup>. Sagebrush (*Artemisia spp.*) communities provide escape cover and forage for sage-grouse, thus assessing vegetation parameters related to escape cover and forage are critical for assessing sage-grouse habitat<sup>4</sup>. Common measurements used to describe sage-grouse habitat include cover, density, height, frequency and visual obstruction<sup>4</sup>. Canopy cover of shrubs and herbaceous vegetation are important because they are used as indicators of habitat quality<sup>4</sup>. Additionally, canopy cover of forbs has been used to estimate the abundance of plants used by sage-grouse for food<sup>4,5</sup>.

Connelly described three methods for assessing herbaceous cover (line transect, point-intercept, and quadrat)<sup>4</sup>. They suggested that all three methods were adequate with the point-intercept and quadrat methods being the most time efficient. They also noted that the Daubenmire canopy cover method was used more frequently by biologist studying sage-grouse to assess habitat conditions.

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