Sage-Grouse Habitat Monitoring: Daubenmire vs Line-Point Intercept

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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[1] and habitat loss and degradation have been cited as major factors in this decline[2, 3]. An important component of sage-grouse management is the evaluation of herbaceous vegetation response to projects implemented to improve habitat quality[4].

Sage-grouse researchers recommended using standardized methods to assess sage-grouse habitat quality[4]. This would allow valid comparisons among years, areas and populations[4]. 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[4]. Common measurements used to describe sage-grouse habitat include cover, density, height, frequency and visual obstruction[4]. Canopy cover of shrubs and herbaceous vegetation are important because they are used as indicators of habitat quality[4]. Additionally, canopy cover of forbs has been used to estimate the abundance of plants used by sage-grouse for food[4, 5].

Connelly described three methods for assessing herbaceous cover (line transect, point-intercept, and quadrat) [4]. 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.