A Demonstration of using Partnerships and Private Lands Conservation to Evaluate Livestock Grazing as a Management Tool for Greater Sage Grouse in Central Montana.

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Partnerships across agencies and land ownerships established to maintain wildlife-compatible "working landscapes" are critical for conserving and managing wildlife in the West. Preliminary results from the first three years of a 10-yr study in central Montana demonstrate this management approach. We are evaluating prescribed grazing systems implemented by NRCS's Sage Grouse Initiative (SGI) that are designed to improve hiding cover and food availability for Greater sage grouse (*Centrocercus urophasianus*) during critical life stages via voluntary, incentive-based modifications of livestock grazing management. Extensive vegetation sampling across 8 SGI-enrolled ranches and 20 non-enrolled ranches in 2013 revealed significant increases in residual grass height, live grass height, and herbaceous vegetation cover on SGI-enrolled lands. In 2011-2013, we monitored adult female sage-grouse and chicks with radiotelemetry to measure vital rates and habitat use. Annual hen survival ranged from 57-74 percent, nest success ranged from 12-61 percent, and chick survival ranged from 9-23 percent. Using an information theoretic approach in program MARK, the top-ranked nest success model showed that grass height was positively correlated with nest success. During late nesting to early brood rearing periods of 2012 and 2013 we used pitfall traps to collected ground-dwelling arthropods from cattle grazed and rest-rotation phase pastures enrolled in the SGI program. Collected arthropods were identified and appropriate specimens were classified as sage grouse chick food items. During both years of study, food item catches were greatest ($P < 0.03$) in rested versus grazed pastures indicating that strategic pasture rest may increase the availability of sage grouse chick food resources.