Evidence Targeted Grazing Benefits to Invaded Rangelands Can Increase over Extended Time Frames
Matthew Rinella and Susan Bellows

Using simulations to improve grazing-based leafy spurge control, we compared a sheep grazing treatment (spurge and grass defoliated) to a cattle grazing treatment (only grass defoliated). Simulated sheep grazing defoliated leafy spurge either prior to or during flowering. Leafy spurge declined most dramatically where defoliated prior to flowering, even though defoliation during flowering removed greater leafy spurge biomass. The difference in cumulative effect of simulated sheep compared to cattle grazing increased over time. Simulated sheep grazing prior to flowering was most effective, reducing leafy spurge biomass production 74% and increasing grass biomass production 40% after eight years of treatment.

Effects of Intermediate-Term Grazing Rest on Sagebrush Communities with Depleted Understories: Evidence of a Threshold
K. W. Davies, J. D. Bates, and C. S. Boyd

Millions of acres of sagebrush (*Artemisia* spp.) plant communities have been degraded by past improper management resulting in dense sagebrush stands with depleted herbaceous understories. Rest from grazing is often suggested as a treatment to promote recovery of these communities. We found intermediate rest (5–6 years) increased perennial herbaceous cover, but did not change herbaceous vegetation densities, diversity, richness, litter, and biological soil crust. These results suggest that intermediate-term rest does not promote recovery of the herbaceous understory compared to moderate grazing in these communities.

Effects of Using Winter Grazing as a Fuel Treatment on Wyoming Big Sagebrush Plant Communities

Though winter grazing is a fuel treatment that can reduce wildfire severity and risk in Wyoming big sagebrush (*Artemisia tridentata wyomingensis*) communities, its impact on plant community characteristics is largely unknown. We evaluated the effects of repeated winter grazing by cattle for five to six years at utilization levels of 40–60%. Winter grazed and ungrazed areas had similar vegetation characteristics, but grazing reduced herbaceous cover. Cover provides important habitat for some wildlife species. This study suggests that winter grazing can be applied without negatively impacting the native plant community; however, it should be strategically applied to reduce the possibility of adversely impacting wildlife.

Livestock Use Has Mixed Effects on Slender Orcutt Grass in Northeastern California Vernal Pools
Kyle E. Merriam, Meredith C. Gosejohan, Peter J. Weisberg, and Kirsten M. Bovee

Grazing has been considered a threat to rare species that inhabit springtime pools. We evaluated the effects of livestock use on the federally listed slender Orcutt grass (*Orcuttia tenuis*) in northeastern California. Livestock do not graze this plant, so effects of livestock are indirect. Livestock use may benefit slender Orcutt grass in some years by reducing litter accumulation, but in pastures where hoof print cover was high, including those grazed early in the season, livestock use had negative effects. By considering factors such as precipitation, site conditions, and season of grazing, land managers can balance the needs of sensitive