

## EVALUATING SEEDING TECHNIQUES AND NATIVE PLANT ESTABLISHMENT IN THE PINEDALE ANTICLINE, WYOMING

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### ABSTRACT

Critical wildlife habitat supporting mule deer, antelope, and sage grouse in high elevation rangeland and sagebrush ecosystems of southwest Wyoming is threatened by energy development, residential sprawl, and agriculture. The objective of the field studies is to evaluate the restoration of native plant species following disturbance. In October 2005, 72 entries of 50 native species were drill-seeded on a well-pad site, in single species plots in a randomized complete block design with four replications. Also, two seed mixtures were broadcast- and drill-seeded, and one seed mixture was hydro-seeded on disturbed areas adjacent to the plots. Cover and density were sampled in July 2006 and September 2007. The best performers in the replicated plots, determined by 2007 density counts, were 'Sodar' streambank wheatgrass, L-46 basin wildrye, Copperhead slender wheatgrass, Rocky Mountain beeblossom, yarrow, 'Appar' blue flax, Richfield Eaton's penstemon, 'Wytana' and Snake River Plains fourwing saltbush, and Open Range and Northern Cold Desert winterfat. Establishment of the broadcast-seeded plots in the Bridger and Shell mixtures was 1.0 and 0.7 plants/ft<sup>2</sup>, respectively, and of the drill-seeded plots 0.4 and 0.3 plants/ft<sup>2</sup>, respectively. Establishment of the hydro-seeded Shell mix was 0.09 plants/ft<sup>2</sup>. Low precipitation and high temperatures may have reduced establishment. On a second disturbed site, 25 shrub species were mechanically planted in single species, replicated plots in October 2006. Density counts taken in 2007 showed extremely poor establishment. Short-term results provide recommendations for native grass restoration; however, low establishment of forbs and shrubs indicate more work is needed to develop plant materials and technology.