Title: Evaluating native plant performance and seeding techniques in the Jonah Gas Field of southwest Wyoming.
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Abstract: A partnership in Wyoming is addressing the need to determine the best native plants and establishment techniques for restoring, enhancing, and maintaining native rangeland and sagebrush ecosystems. The cooperative agreement among several federal, state, and private entities considers plant diversity, forage production, and wildlife habitat. The first phase of the project, initiated in October 2005, included site preparation and seeding of the site with 32 grasses, 24 forbs, and 16 shrubs. The study area is an existing well pad leased by Shell Exploration on BLM land. A precision cone-seeder was used to seed each entry in a completely randomized block with four replications. Two different seed mixtures were each broadcast-seeded in ½-acre plots, and drill-seeded in 1-acre plots with a Truax range drill. A seed mixture was applied with a hydro-seeder on disturbed areas outside of the plots. The study was evaluated in July 2006, and the best performing grasses were Copperhead Germplasm slender wheatgrass, L-45 and L-46 basin wildryes, P-24 bluebunch wheatgrass, and Bannock thickspike wheatgrass. The two flax entries, Appar and Maple Grove, silverleaf phacelia, and several penstemon species were the best performing forbs. Wytana and Snake River Plains Germplasm fourwing saltbushes were the best performing shrubs. The establishment of the two broadcast-seeded plots was 621 and 7,519 plants per-acre, respectively. In the drill-seeded plots, establishment was 270 and 451 plants per-acre, respectively. On the hydro-seeded area, establishment was 119 plants per-acre. At the time of evaluation, average annual precipitation was less than 25% of normal and average temperature was above normal. The second phase of the project, in cooperation with Questar Exploration, is scheduled for installation in October 2006. It will be a 30-entry shrub planting on a site located in critical mule deer winter habitat that is presently under heavy development for oil and gas exploration.