

Vegetation Response of a Wyoming Big Sagebrush (*Artemisia tridentata* ssp. *wyomingensis*) Community to 6 Mechanical Treatments in Rich County, Utah

Daniel D. Summers¹, Bruce A. Roundy¹, Scott C. Walker² and James N. Davis³

¹Brigham Young University, Provo, Utah; ²Utah Division of Wildlife Resources, Ephraim, Utah;

³Utah Division of Wildlife Resources, Provo, Utah

Sagebrush manipulation has historically focused on maximizing control to increase forage for livestock. More recently, decadent stands of sagebrush need thinning to improve sagebrush vigor and to increase diversity and production of the understory for wildlife habitat. We examined the effects of 6 mechanical treatments on a big sagebrush (*Artemisia tridentata* ssp. *wyomingensis*) community in northern Utah. Treatments included: 1) disk plow followed by a land imprinter, 2) 1-way chaining using an Ely chain, 3) 1-way pipe harrow, 4) 2-way pipe harrow, 5) meadow aerator (all installed Fall 2001), and 6) meadow aerator (Spring 2002). A mixture of forbs and grasses was broadcast seeded before each treatment. The experiment was a randomized block with three blocks of each treatment plus an untreated-unseeded control. Treatment plots were 1.1 ha. One year after treatment sagebrush cover was reduced to < 5% on all treatments. Sagebrush mortality was higher for the disk plow and 2-way pipe harrow (> 70%) compared to the other treatments (< 54%). Disk imprinting produced the greatest frequency of seeded grasses and forbs, but the least frequency of native residual forbs. Data from the second growing season (2003) will be presented.