

**STRATEGIES FOR ESTABLISHMENT OF BIG SAGEBRUSH
(ARTEMISIA TRIDENTATA SSP. WYOMINGENSIS) ON WYOMING MINED LANDS**

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Abstract: Wyoming big sagebrush is one of the most widely distributed and adapted shrub species in Wyoming and the region. Sagebrush is difficult to reestablish from seed because of its low seedling vigor, inability of the seedling to compete with accompanying herbaceous species, seeding methods, ecotype adaptation, and altered edaphic conditions. A field study was undertaken to evaluate the effects of topsoil management alternatives, mulching practices, and competition of accompanying herbaceous species on sagebrush establishment. The study also addresses the role of a pioneer plant species for enhancing edaphic properties and microsite presence leading to natural recruitment of sagebrush. Research showed that fresh stripped topsoil resulted in significantly greater sagebrush seedling establishment compared to 5-year old stockpiled topsoil. It also demonstrated the importance of a mulch in the creation of microsities for enhancing sagebrush germination and establishment. Perennial grass competition reduced sagebrush seedling establishment by over 60%. The pioneer plant phase of the research is in its initial phases and data is too preliminary to draw conclusions. Research findings indicate that sagebrush can best be established by using fresh stripped topsoil, a mulch, and limiting herbaceous species competition.

Additional Key Words: Wildlife, habitat, topsoil, VAM

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