

Restoration of Wyoming big sagebrush to intact rangelands within a Greater Sage-grouse Core Population Area, Converse County, Wyoming¹

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Abstract: Natural recolonization and regeneration of Wyoming big sagebrush (*Artemisia tridentata* ssp. *Wyomingensis*) within wildfire-impacted landscapes of eastern Wyoming can take decades or even centuries. For this reason, active efforts to preserve and restore the sagebrush ecosystem are integral to conservation efforts for Greater Sage-grouse (*Centrocercus urophasianus*) and other sagebrush-obligate species in this area. In 2014, the Douglas Core Area Restoration Team (Team) began to investigate strategies for restoring sagebrush to post-wildfire sites within a Greater sage-grouse core population area in eastern Wyoming. Projects have consisted of outplanting 100,000+ greenhouse-grown sagebrush seedlings across 5000+ acres. Results from annual project monitoring highlight the importance of using locally collected seed to grow sagebrush seedlings, and directly confronting environmental challenges such as competition, soil moisture constraints, and herbivory in project design and implementation. We will present results on seedling survival, growth, and reproduction during the initial years following project implementation. In addition, we will describe ongoing research into the longer-term persistence of sagebrush seedlings after project infrastructure is removed and seedlings are exposed to ambient environmental conditions and land management practices.

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