Research and Application Highlights

Effectiveness of Postfire Seeding to Reduce Cheatgrass (*Bromus tectorum*) Growth and Reproduction in Recently Burned Sagebrush Steppe

Background: Millions of acres of the intermountain West are infested with the annual weed, cheatgrass, and several million additional acres are at risk of infestation. Cheatgrass reduces native wildlife habitat and produces other negative impacts, but more importantly, it increases susceptibility to wildland fire. Unless burned areas are stabilized and rehabilitated, the fire-cheatgrass cycle escalates. This project is addressing one aspect of the cheatgrass problem—the effectiveness of postfire treatments in reducing cheatgrass.

Approach: This project is evaluating several postfire treatments including the use of introduced vs. native seed mixes and grasses vs. grasses plus leguminous forbs. The project also is evaluating the effects of postfire soil conditions such as nutrient level and seedbank composition because these factors may influence the effectiveness of some or all postfire treatments. In addition, the effects of seeding treatments on species composition and abundance of native plants will be evaluated during the first 2 years following treatment. The findings will be presented to land managers as recommendations for consideration during the planning, design, and implementation of postfire treatments. Sites being used in this study include the nearly 23,000-acre Cannon Fire near Walker and Coleville in eastern California, and a 60-acre prescribed fire on Shivwitz Plateau in the Lake Mead National Recreation Area portion of the Parashant National Monument in northwestern Arizona.

Accomplishments: Work on the 23,000-acre Cannon wildland fire site near Walker and Coleville in eastern California included the collection of pretreatment soil seedbank samples, installation of seeding treatments and nutrient treatments, and collection of first posttreatment plant cover samples and soil seedbank samples. Work on the Shivwitz Plateau prescribed fire treatment site included collection of pretreatment soil seedbank samples and postfire installation of seeding treatments.

Application: Managers at the Lake Mead area of the Parashant National Monument have used the preliminary findings to include a mixture of native perennial grasses in seedings to reduce the dominance of cheatgrass and other invasive plants.

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