Seeding the Sagebrush Steppe

Targeting sites for seeding grasses as part of the Southeast Oregon Wildfire Resiliency project is one piece of the puzzle toward making the sagebrush more resilient.

By Scott Barton
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The sagebrush steppe in Harney County appears endless and empty to the naked eye. But for those that live, work, and recreate in the seas of purple and blue, there's much more than what the casual observer finds. These vast landscapes are vital to Harney County residents' everyday lives and the wildlife that call them home, yet they remain some of the most fragile ecosystems in the Western US. In recent years, wildfire has proven a grave threat to these lands. It's a threat that looms large to this day somewhat in part due to the invasion of nonnative annual grasses.

Pictured: Sagebrush sea fall sunrise, photo by Brandon McMullen.

To help make the sagebrush steppe more vital, resistant to annual grasses, and resilient to wildfire, the Harney County Wildfire Collaborative is targeting strategic sites for seeding perennial grasses as part of the Southeast Oregon Wildfire Resiliency Project.

What is Range Seeding?

As generic as the phrase "range seeding" is, it's often met with a level of confusion. According to Dr. Chad Boyd, Agricultural Research Service Range Scientist and Research Leader, range seeding is "the intentional introduction of seed of a desired plant species to the rangeland environment." He goes on to say that "the purpose of seeding within a project like Southeast Oregon Wildfire Resiliency is to get perennial bunchgrass species in place to occupy the near-surface rooting zone. Annual grasses are adept at growing from seed but are not good competitors for space and nutrients in the rooting zone when stacked against mature perennial bunchgrasses."

What Are the Benefits of Range Seeding?

Perennial bunchgrasses are native to the sagebrush steppe; while wildfire kills some perennial bunchgrasses, the more well stocked the landscape is, the less room non-natives have to come in and take over. According to Boyd, "getting these perennial grass species established prior to wildfire allows the native plant community to bounce back when a wildfire does occur." In essence, the presence of perennial native bunchgrasses quickens the landscape's recovery as opposed to the presence of non-natives annuals that slow or stall the process.

Are There Nonnative Grasses that Are Beneficial for the Environment?

While the seeding of perennial bunchgrasses has proven a beneficial practice, ecologists and researchers have found that there are some species of non-native perennials that perform quite well in terms of protecting the landscape against wildfire, and helping it recover quickly in the aftermath. In fact, a lot of native perennial bunchgrasses struggle to reproduce from seed. That's where introduced species like crested wheat grass are being used in concert, or even instead of native grasses in some areas. Boyd says that "it's not that natives can't reproduce from seed, but in the lower precipitation and warmer zones often occupied by annuals, the necessary amount and duration of soil moisture is not available often enough to depend on their establishment from seed in these areas. In that circumstance, managers have to choose between seeding a native bunchgrass that may need to be seeded multiple times to achieve a successful stand versus seeding a species like crested wheatgrass that is more likely to be successful with a single planting." EcoSource Native Seed & Restoration is one Harney County Wildfire Collaborative partner who is currently doing native rangeland seeding in Harney County. They use site-specific data to develop a seeding plan to restore the ecological functions that they found to not be functioning properly. On top of restoration, they are also gathering native seed to grow locally to build a supply of locally-sourced seeds for future restoration projects.

What Have the Benefits of Rangeland Seeding Been So Far?

The practice of rangeland seeding and long-term results need more time to be determined, the benefits of rangeland seeding seem to point in a positive direction. Boyd says that "we do know that perennial bunchgrasses are our best defense against annual grasses. I say this because while someone might argue that we have herbicides that can kill annual grasses, just killing annual grasses doesn't solve the problem. Unless the site is occupied by perennial grasses, there will be room for annuals to encroach. Simply put, making plant communities resistant to annual grass encroachment with the establishment of perennial bunchgrass species is the best answer we have at present to the annual grass problem."

What Does the Future Hold?

While some might say rangeland seeding is still in its infancy, the results have proven successful in many areas of the Southeast Oregon Wildfire Resiliency Project, and the practice is here to stay for now. Moving forward, rangeland scientists are developing seeding technologies and varieties of native species that they hope will continue to increase odds of seeding success.

This article is provided by High Desert Partnership; a Harney County nonprofit convening and supporting six collaboratives including the Harney County Wildlife Collaborative.

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