# Partnership fosters restoration using native seeds to mitigate wildfire risk

EcoSource collects native seeds for agencies to plant species specific to the Northern Great Basin

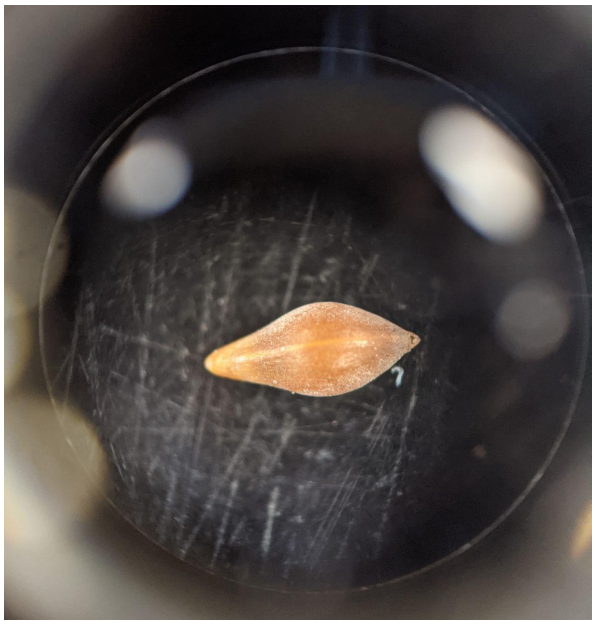
By Lauren Brown, July 2021

One of the reasons some wildfires turn into megafires in the Great Basin is because invasive annual grasses essentially create a carpet of fuel. When lightning strikes these degraded areas, this invasive annual grass fuel can enable fire to burn through a landscape.

One way to thwart such wildfires is to replace those invasive annual grasses with native plants that green up in the spring and stay green, said ecologist Roger Sheley. “The most fundamental goal for dealing with these wildfires is to incorporate something into the system that has the ability to grow later into the season and therefore would keep some green, moist material out there longer into the year to help minimize the chances of an igniting fire,” he said.

*Biotype specific*

The High Desert Partnership has been working on this angle of megafire prevention through its wildfire collaborative, the Harney County Wildfire Collaborative, and through its relationship with EcoSource Native Seed and Restoration.



EcoSource is a non-profit that collects, cleans, produces, and stores genetically appropriate native plant seeds. It also implements scientifically based restoration management plans and programs.

*Pictured left: An Indian ricegrass seed viewed through a microscope.*

It is a concept that started four years ago when the Wildfire Collaborative partners recognized a need for seed sources that would be successful in rangeland restoration, said Sheley, who is an EcoSource board member. It has evolved into a non-profit that employs a program manager, Jennifer Taynton, and seed specialist, Aurora Potts, as well as teams of seed collectors.

What EcoSource is doing that is different from other seed collection entities is that it seeks to restore landscapes using native seeds that are site-specific to a geographic area, so they have the best chance of thriving in that environment. Even

plants that are the same species have local adaptive characteristics that can differ from geographical area, Sheley noted.

For example, bluebunch wheatgrass seeds that come from plants grown in Nevada wouldn't necessarily thrive in Harney County even though bluebunch wheatgrass is native to the Great Basin. This is because the seeds found here and the seeds found in Nevada, while they are the same species, are different biotypes. "What we're focusing on with EcoSource is trying to find a way that restorationists can pre-collect native plants that are from very local adaptive populations and then grow them in large enough scale to put them back onto the ground," Sheley said. "The chances of them being successful and actually growing and emerging would be substantially better because they have locally-adapted characteristics."

While EcoSource is not the first non-profit to work with native seeds, it is paving the way in providing specific biotypes of genetically similar plants for restoration purposes, Sheley said. "We are working to create cooperative relationships with farmers and ranchers and land managers who all can have a part in restoring land," he said.

*Genetically appropriate seeds*

According to EcoSource program manager Taynton, this year EcoSource is focusing on working with local agencies on native seed collection. Potts, the native seeds specialist at EcoSource, is working with local agencies such as the Bureau of Land Management, the Forest Service, Oregon Department of Fish and Wildlife, Eastern Oregon Agriculture Research Center as well as the Burns Paiute Tribe to contract collecting seeds the agencies and the Tribe needs. She also manages the field crews that go out and harvest seeds.

The seeds EcoSource crews collect will be cleaned, tested for germination viability, and tracked so that they go to the agency that originally requested them. "What is unique about the seeds that we are collecting is that they are genetically appropriate to the Northern Great Basin and Harney County specifically. When the seeds are sown where they came from originally, they are going to have a much higher chance of being a successful restoration effort," she said.

*Pictured left: Burns High grads Garret Goss and Tom Boyd examining Indian ricegrass.*

Potts said some of the plants they are working with include Douglas' dusty-maiden, bluebunch wheatgrass, bottlebrush squirreltail, lupin, Thurber's needlegrass, shaggy fleabane, annual hairgrass, western hawksbeard and curve pod milkvetch. Potts said that while these native plants are more resistant to wildfire, restoring a landscape also involves niche packing or making sure there is enough variety among the genetically appropriate native plants that they can establish themselves to the point that they don't get out-competed by invasive plants such as cheatgrass. "When you have multiple species working together without competing with each other for resources, that's the

very foundation of what begins to create a healthy ecosystem, which is exactly what you need in order to achieve a successful restoration," Potts said.

*Stimulating rural economies*

Taynton noted that another EcoSource objective is to stimulate the local economy by contracting with smaller businesses who want to grow and collect seeds as well as be involved in restoration projects.

Sheley said "We're actually working to try to make a shift in how rural economies work," he said. "We're trying to work with people to build businesses around the idea of collecting and cleaning and storing and farming native seeds so that it becomes an industry that's helping rural economies survive and grow through diversifying businesses and offering more options for producers," he said. This is a concept called the new natural resource economy and is a complement to traditional natural resource enterprises that can help diversify our rural, local economy.

"It's a win-win for everybody. It's a win-win for the collaboratives. It's a win-win for the agencies. It's a win-win for the economic viability of this community. It's a win-win for the wildlife and the habitat out there to have their native habitat restored." Taynton said.

*Everything working together*

Sheley noted that for a system or landscape to function properly, different species fill certain roles. "Some contribute to the nutrient cycling, and some contribute to the water cycling and some contribute to the energy flow," he said. Sheley likes to use a car as a metaphor for how it works. "These are the sparkplugs, and this is the carburetor, and this is the distributor, and this is the battery, " he said of different species in a landscape. "Each one of them has a different role that they play in the system, and if you want the system to be functionally sound or sustainable, you have to have all of the car parts to make the motor run."

Landscapes infested with a single plant such as cheatgrass or Medusahead have limited functions. Restoration can help establish parts of the system to broaden the functionality and make the landscape healthier, especially where wildfires are concerned. "When you're trying to interrupt fires, you need to have these species to play these different functional roles," he said. A healthy, functional system is resilient and can handle a wildfire disturbance. "That's one of the major reasons we're interested in putting native plants and native systems back together so that they're functioning at a sustainable level," he said.

*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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