The Nature Conservancy

# Innovative Restoration

## A multistate effort to restore one million acres by 2030

**TNC IS WORKING WITH PARTNERS AND COMMUNITIES TO IMPROVE SAGEBRUSH HABITAT IN 11 STATES ACROSS THE WEST.**

Six chapters have come together to create the Sagebrush Sea program—Idaho, Nevada, Oregon, Montana, Utah, and Wyoming. Connecting partners, leveraging projects, and sharing solutions across borders will help us reach our shared goals.

The vast, open spaces of the high desert stretch across more than a dozen states, creating a "sagebrush sea" from the Dakotas to California, an iconic landscape that defines the American West. Healthy sagebrush habitat is a complex network of vegetation—a rich, diverse mix that also includes bunchgrasses, and wildflowers. Together these native plants sustain thousands of animals from burrowing owls and pygmy rabbits to mule deer, pronghorn, and mountain lions. Many, like the iconic greater sage-grouse, can survive nowhere else.

Despite the rugged reputation of the range, it is imperiled. Every year we lose another one million acres to invasive species, catastrophic wildfire, development, improper grazing, and climate change.

**WILDFIRE HAS ALWAYS BEEN A PART OF THIS ARID ECOSYSTEM,** but rising temperatures and longer fire seasons are expanding the threat further each year. With each fire comes an uprising of invasive annual grasses, whose fast-germinating and far-reaching seeds crowd out the native species needed to sustain both wildlife and livestock. Even worse, these grasses are far more flammable, meaning each wildfire increases the risk and severity of the next one.

To combat this cycle, our scientists are working with federal partners and a seed technology company to leverage agricultural innovations for wildland restoration to help native plants reestablish, outcompete invasive grasses and regenerate the range.

This approach, known as Innovative Restoration, can double the success rates for native seedlings. The benefits are many for this landscape and the wildlife and people that depend upon it to thrive.

**learn more >**

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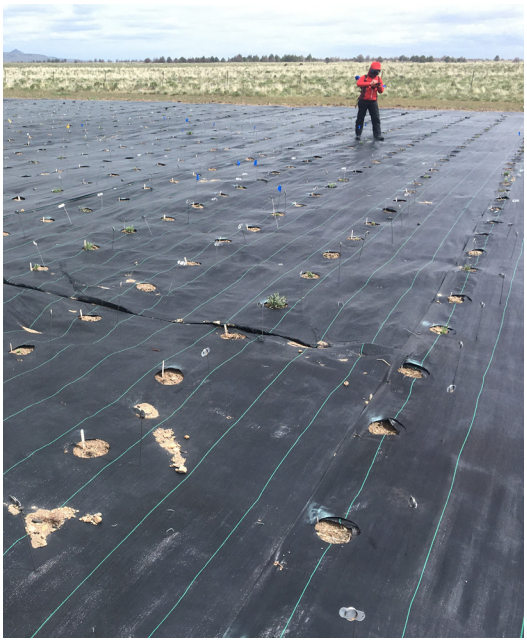
# An Innovative, Science-Based Solution Offers a Breakthrough

Since 2012, The Nature Conservancy has been partnering with the USDA Agricultural Research Service to pioneer groundbreaking restoration technologies designed to increase survival odds for native plant seedlings. We are now also working with Germains Seed Technology, a commercial company with materials engineering expertise and industrial supply-chain processes. Together we can develop, refine, and produce sophisticated new tools at the scale needed to meet the restoration challenges of the sagebrush sea.

This three-way collaboration connects seed laboratories in Burns, Oregon and Lander, Wyoming to the industrial research and development facilities at Germains, allowing for rapid design, testing, and refinement of seed coatings, pellets, and other treatments designed to help native seeds germinate and establish at high rates. Through a network of field-testing sites in multiple states, including at Conservancy preserves, we are ensuring that these new seeds perform in real-world conditions.

We are testing different technology ideas, each customized to address an aspect of native seed ecology that currently limits success. These include coatings that resist the herbicides used to control cheatgrass, allowing native seeds to begin life with less competition from invasives, and pelleting that better absorbs water and adds nutrients to give native seeds a boost in arid sagebrush sea conditions. We are also looking at techniques to delay seed germination to increase the chance that restoration seedings experience good conditions for germination and growth, and methods to encourage native wildflowers to germinate at higher rates.



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# Scaling Innovations to Meet the Dimensions of the Challenge

These technologies will give public and private land managers more effective tools to recover the range, especially the Bureau of Land Management (BLM), which is responsible for 78 million acres of sagebrush habitat. The BLM restores over half a million acres in a given year, and purchases millions of dollars of seed each year for post-fire restoration. With the commercial capacity of Germains, Innovative Restoration has the business dimensions to produce successful technologies for the "restoration marketplace" at the scale of the problem.

Saving the biodiversity of this imperiled ecosystem will help the more than 350 species that are rare, threatened, or endangered who depend on this landscape. It will also help the rural communities whose livelihoods depend on the health of this ecosystem. For ranch operators, the shrinking of the sagebrush sea impacts their daily lives. Invasive species put them at greater risk for wildfire and reduce healthy livestock forage.

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# Our Vision: Generous Support Fills the "Middle Million"

With the contributions of Conservancy members, this project has grown from a lunchroom brainstorm and experiments with a pasta maker to an integrated strategy involving six TNC chapters, federal partners, and a new private-sector collaboration. We are seeking additional support from generous donors who see the potential of a public-private partnership for ecosystem restoration, who care about the sagebrush sea and who embrace the idea of their generosity being leveraged for landscape-scale change.

Federal agencies know the problem is urgent and are investing in sagebrush ecosystem restoration accordingly, providing $1 million to support the research. To reach our goal of having our first effective seed technology in the hands of the BLM by 2025, we need to raise an additional $1 million to move the research to demonstration. Based on past fundraising experience, we expect to leverage private dollars for up to $1 million more in public grants to get our seeding innovations in the ground.

# Saving the Sagebrush Sea

As we help native plant species succeed, every restored acre becomes a more fire-resilient acre, able to avoid a fire's devastation, hold back the rise of cheatgrass dominance, and allow people and nature to thrive on the range. What we learn in the sagebrush sea could also help other landscapes thrive in the face of climate change. Successful techniques developed through Innovative Restoration could be transferable to other semiarid places, from California to Australia.

We have already lost half of the sagebrush sea. By joining together, we can work to heal this iconic landscape and support the people, wildlife, and communities that depend on it.

**THE NATURE CONSERVANCY** is a global conservation organization dedicated to conserving the lands and waters on which all life depends. Guided by science, we create innovative, on-the-ground solutions to our world's toughest challenges so that nature and people can thrive together. We are tackling climate change, conserving lands, waters and oceans at an unprecedented scale, providing food and water sustainably and helping make cities more sustainable. Working in 70 countries, we use a collaborative approach that engages local communities, governments, the private sector, and other partners. To learn more, visit www.Nature.org.

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**MATT CAHILL**
matthew.cahill@tnc.org | 541 241.1736
Sagebrush Sea Program Director