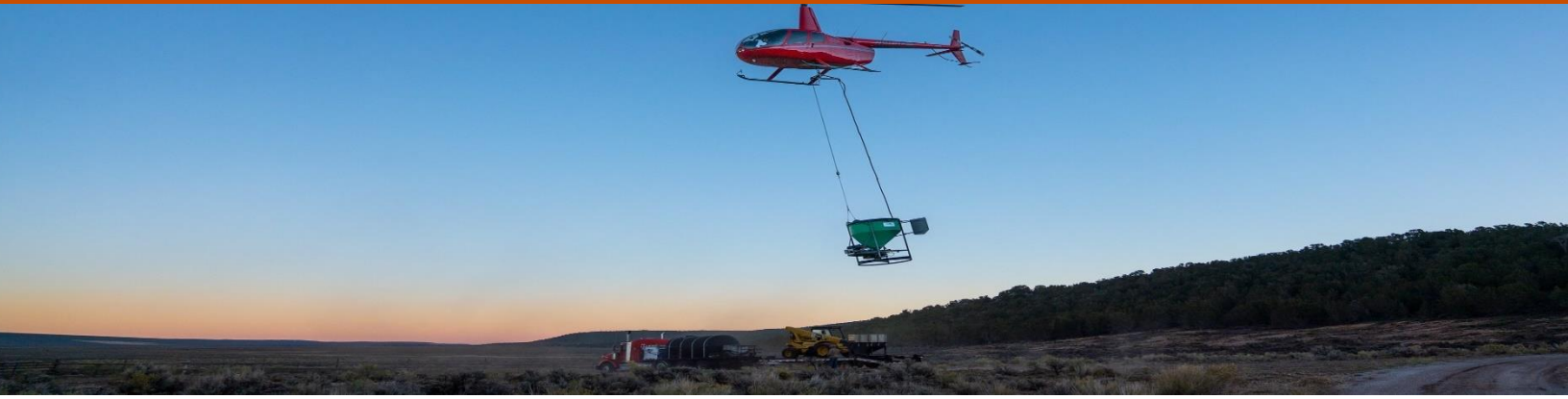


Sagebrush Conservation and Restoration

A DOI Nature-Based Solutions Roadmap Fact Sheet



Sagebrush habitats exist across the western United States in areas with hot, dry summers and cool, moist winters and are dominated by big sagebrush (*Artemisia tridentata*) vegetation and perennial grasses. Almost half of historic sagebrush habitat has been lost. Fire suppression, grazing and invasive plants in sagebrush habitats have also altered the historic fire regime, leading to increased tree cover and higher potential for severe wildfire. Remaining sagebrush areas are increasingly fragmented, making the ecosystem less suitable for dependent wildlife, most notably the greater sage-grouse.¹

TECHNICAL APPROACH

There are two primary approaches for sagebrush restoration:^{1,2}

- Passive restoration, which facilitates growth of desirable plant species by changing management to shift plant species composition. This is likely to be successful in less degraded habitats where native perennial grasses still exist. Passive restoration usually changes the grazing regime by adjusting the level and season of use for grazing.
- Active restoration, which directly modifies the plant community by removing undesirable species or adding desired species. This is required when native plant species have been degraded to the point that they are not likely to recover under passive restoration or when invasive or other undesirable species already dominate the site.

BENEFITS

Climate Threat Reduction

- Reduced wildfire risk
- Carbon storage and sequestration

Social and Economic

- Jobs
- Cultural values
- Recreational opportunities

Ecological

- Supports wildlife
- Invasive and nuisance species management
- Supports native plants



Sagebrush being grown in Utah. Photo credit: Rocky Mountain Research Station.

SITE SUITABILITY FACTORS

- ✓ Cool, moist climate
- ✓ Mean annual precipitation of at least 13 inches
- ✗ Steep slopes
- ✗ Stony soil
- ✗ High erosion potential

EXAMPLE PROJECT

The Kelly Hayfields sagebrush restoration project in Grand Teton National Park is a collaboration between the National Park Services, U.S. Fish and Wildlife Service and other local partners.³ The 4500 acres of habitat were converted to hay fields in the 1800s prior to establishment of the national park. Restoration involves removal of non-native plants, collection and propagation of native seeds on- and off-site, and replanting native species. The project has been ongoing since 2007, and the restored sagebrush habitat benefits bison, elk, pronghorn, sage grouse, and songbirds.



The national park’s vegetation management team takes inventory of native plants at the Kelly Hayfields. Photo credit: [Grand Teton National Park Foundation](#).

REFERENCES

- 1 Pyke, D.A., J.C. Chambers, M. Pellant, S.T. Knick, R.F. Miller, J.L. Beck, P.S. Doescher, et al. 2015. “Restoration Handbook for Sagebrush Steppe Ecosystems with Emphasis on Greater Sage-Grouse Habitat—Part 1. Concepts for Understanding and Applying Restoration.” Circular 1416. Circular. U.S. Geological Survey. <http://dx.doi.org/10.3133/cir1416>.
- 2 Pyke, D.A., J.C. Chambers, M. Pellant, S.T. Knick, R.F. Miller, J.L. Beck, P.S. Doescher, et al. 2017. “Restoration Handbook for Sagebrush Steppe Ecosystems with Emphasis on Greater Sage-Grouse Habitat—Part 1. Concepts for Understanding and Applying Restoration.” Circular 1426. Circular. U.S. Geological Survey. <https://doi.org/10.3133/cir1426>.
- 3 “Kelly Hayfields Habitat Restoration | Grand Teton National Park Foundation.” n.d. *Grand Teton National Park Foundation* | Jackson, WY (blog). <https://www.gtnpf.org/initiative/kelly-hayfields-habitat-restoration/>.

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KEY RESOURCES

Title and Link	Site Suitability	Design and Construction	Monitoring Guidance	Example Projects
Restoration handbook for sagebrush steppe ecosystems— Part 1 , Part 2 , and Part 3	✓	✓	✓	—
Grassland & Sagebrush Conservation Portal	✓	✓	✓	✓

LEARN MORE

Visit the DOI Nature-Based Solutions Roadmap for more information on sagebrush restoration, other nature-based solutions, and principles and considerations broadly relevant for nature-based solutions projects. The sagebrush restoration summary includes additional details on each section included in this fact sheet, plus information on operations and maintenance, common barriers, and more resources and example projects.

Explore the Roadmap



Full Roadmap Document



Sagebrush Section

www.nicholasinstitute.duke.edu/roadmap