

Prescribed Burns

A DOI Nature-Based Solutions Roadmap Fact Sheet



Prescribed burns are fires that are intentionally set in a controlled manner in accordance with specified weather limitations, laws, policies, and regulations. Prescribed burns are used by management teams with fire expertise to restore health to fire-dependent ecosystems and reduce fuel loads to prevent ecosystem and community damage from catastrophic wildfires.^{1,2}

TECHNICAL APPROACH

The standard approach for prescribed fire planning and implementation involves:

- Determining if your site is a fire-adapted ecosystem that could benefit from prescribed fire³
- Creating a site-specific prescribed burn plan that takes into account fuel moisture, forest stand characteristics, historical fire data, terrain, soil type, and elevation³
- Conducting a burn only when conditions match the burn window described in the plan. The burn window is when all the environmental, weather, and projected fire behavior model conditions in the burn plan are met.³
- Monitoring and patrolling the perimeter of the burn to ensure the fire does not escape⁴
- Conducting outcome, technical, and action reviews to continually improve prescribed fire programs⁴

BENEFITS

Climate Threat Reduction

- Reduced wildfire risk
- Improved air quality

Social and Economic

- Public health and safety
- Property and infrastructure protection
- Jobs
- Firefighter safety

Ecological

- Supports native plants
- Supports wildlife
- Enhanced soil health
- Invasive and nuisance species management
- Improved water quality



Using a drip torch to start a prescribed burn. Photo credit: [Alabama Extension](#).

SITE SUITABILITY FACTORS

- ✓ Having community support
- ✓ Fire-adapted ecosystems
- ✓ High wildfire risk (i.e. burn is conducted to reduce this risk)
- ✗ Areas with strict air quality regulations
- ✗ Conditions that do not meet the burn window
- ✗ Sandy soils (high likelihood of erosion)

EXAMPLE PROJECT

The Lathrop Bayou Prescribed Fire was conducted by the Bureau of Land Management in partnership with the U.S. Fish and Wildlife Service and The Nature Conservancy on a 536 acre conservation area in Florida.⁵ The Lathrop Bayou is important longleaf pine habitat that supports the endangered Red Cockaded Woodpecker and rare plants. The burn was completed 1) to reduce the likelihood of wildfire, 2) to maintain and restore the pine habitat, and 3) to remove dead and downed trees that were damaged during a hurricane.



Prescribed fire at the site. Photo credit: [Bureau of Land Management](#)

KEY RESOURCES

Title and Link	Site Suitability	Design and Construction	Monitoring Guidance	Example Projects
Standards for Prescribed Fire Planning and Implementation	✓	✓	✓	✗
Confronting the Wildfire Crisis	✓	✓	✗	✗

LEARN MORE

Visit the DOI Nature-Based Solutions Roadmap for more information on prescribed fire, other nature-based solutions, and principles and considerations broadly relevant for nature-based solutions projects. The prescribed fire 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



Prescribed Burns Section

www.nicholasinstitute.duke.edu/roadmap

REFERENCES

- 1 “Prescribed Fire.” US Forest Service, December 6, 2016. <https://www.fs.usda.gov/managing-land/prescribed-fire>.
- 2 NWCG. “NWCG Glossary of Wildland Fire, PMS 205 | NWCG,” 2012. <https://www.nwcg.gov/publications/pms205>.
- 3 Avitt, Andrew. “Caldor Fire: Defending Lake Tahoe Basin.” US Forest Service, October 28, 2021. <https://www.fs.usda.gov/features/caldor-fire-defending-lake-tahoe-basin>.
- 4 “NWCG Standards for Prescribed Fire Planning and Implementation, PMS 484,” 2022. <https://www.nwcg.gov/sites/default/files/publications/pms484.pdf>
- 5 “The BLM-ES Fire and Aviation Program Conducts Prescribed Fire in Lathrop Bayou | Bureau of Land Management.” 2020. March 27, 2020. <https://www.blm.gov/blog/2020-03-27/blm-es-fire-and-aviation-program-conducts-prescribed-fire-lathrop-bayou>.

CITATION

Warnell, K., Mason, S., Siegle, A., Merritt, M., & Olander, L. 2023. “Fact Sheet: Prescribed Burns.” *NBS Roadmap Project*. Durham, NC: Nicholas Institute for Energy, Environment & Sustainability, Duke University. www.nicholasinstitute.duke.edu/roadmap.