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Forest Service
**Research
and Development**
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U.S. Forest Service R&D News: March 2021

News from the Washington Office and Research Stations



FEATURED STORY

Warnings from Warming Peatland

Beyond their critical role in hydrology and providing habitat for biodiverse wetland ecosystems, peatlands are important for climate regulation because of the large amount of carbon stored in their waterlogged soils. Forest Service research is shedding light on [how climate change will impact the carbon storage capacity of peatlands](#). As part of the [Spruce and Peatland Responses Under Changing Environments program \(SPRUCE\)](#), carbon loss rates were calculated in an experimental warming setup at the [Marcell Experimental Forest](#) in northern Minnesota. Under the warming scenarios tested, carbon loss rates were found to be 4.5 to 18 times faster than the rate at which carbon was stored historically.



WILDLAND FIRE



Post-Fire Restoration Framework for California's National Forests

The increasing frequency and severity of fire in Western U.S. landscapes requires a coordinated, science-based approach to post-fire management. A new Forest Service report seeks to meet that need, offering a [framework to guide postfire restoration on national forests in California](#). It is centered around a set of guiding principles and can inform project planning and monitoring.



Taking Stock of Prescribed Fire Impacts on Timber Quality in Eastern Oak Forests

New research is shedding light on [fire as a management tool in eastern oak forests](#). Forest Service researchers assessed timber quality across multiple national forests with varied prescribed fire histories. They found damage to timber was usually minimal, particularly compared to the costs of regenerating oak by other methods such as tree planting after more severe wildfires.

FOREST PRODUCT INNOVATIONS

Biochar for Mine Reclamation



The benefits of [biochar application in abandoned mine restoration](#) programs were recently explored by Forest Service scientists. Made from woody biomass debris, biochar has the potential to improve water quality, bind heavy metals or decrease toxic chemical concentrations, and improve soil health. Its positive effect on soils can also help establish plant cover, thereby preventing soil erosion, leaching, and other unintended, negative environmental impacts from mine sites. When applied at scale, the increased carbon it adds to soils also can help mitigate climate change.

INVASIVE SPECIES

Weeding Out Eurasian Watermilfoil

The [Eurasian watermilfoil](#) is an invasive plant that forms thick mats in shallow areas of a lake, blocking sunlight and killing off native aquatic



plants and fish. It spreads easily via fragments caught on the boats or fishing gear of unknowing recreationists. The Forest Service is [combatting Eurasian watermilfoil](#) by pairing up with local partners to remove Eurasian watermilfoil from lakebeds.



DID YOU KNOW?

Over 56,000 full-text publications produced by R&D scientists are available for free online!

The Forest Service [R&D publication repository Treesearch](#) is an online system for sharing free, full-text publications. Search by keyword, author, research station, or dates for R&D peer-reviewed products, including papers appearing in journals, conference proceedings, or books.

Learn More!

SCIENCE_x



The newly launched Forest Service [SCIENCE_x webinar series](#) brings together scientists and land management experts from across Forest Service research stations and beyond to explore the latest science and best practices for addressing large natural resource challenges across the country.

Tune in April 5-9, at 2 p.m. EST for the SCIENCE_x Post-Disturbance Restoration webinars which will feature daily presentations from Forest Service scientists on their research and best management practices for restoration after disturbances caused by fire, wind, insects and floods/erosion.

The Forest Service [Urban Forest Connections webinar](#) series brings together experts to discuss the latest science, practice, and policy on urban forestry and the environment. The next webinar titled "Tree Equity for Climate and Health: State and Local Applications" is scheduled for March 10 at 1 p.m. EST.

The Forest Service co-hosts a monthly [biochar webinar series](#) that covers basic information about biochar, its applications, and environmental benefits. Tune in on March 18 at 11 a.m. EST for the next webinar "Forest management and biochar: building resilient ecosystems."

The Forest Service's Rocky Mountain Research Station hosts a [Science You Can Use webinar series](#), with one hour webinars held twice each month. They feature the latest research from its scientists covering a wide range of topics, including wildland fire, forest restoration, rangeland management, and wildlife conservation.

Message from the Forest Service R&D Deputy Chief

Forest Service Research at the Nexus

Wildland fire. Climate change. Invasive species. Drinking water supply. Flood management. Sustainable materials. Endangered species. Restoration. Urban sustainability.

It is truly remarkable that the Forest Service is positioned at the nexus of all these major 21st century issues in the U.S. As



**Deputy Chief
Alexander L. Friend**

the research arm of the agency, our work is more important than ever in guiding our country through these monumental challenges with sound science.

Our work empowers agency counterparts, policy makers, other government entities, and the American public to be proactive, rather than just reactive in facing these issues. By combining over a hundred years of experience in research and data with the tools and technologies of the future, it is no exaggeration that we are national problem-solvers and champions of a sustainable future.

This month's newsletter offers a taste of the broad assortment of science R&D engages in, the challenges we take on, and the creative solutions we deliver.

MARCH INFOGRAPHIC



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