



United States Department of Agriculture

[Home](#) [Publications](#) [Locations](#) [Blog](#) [About Us](#)

Forest Service
**Research
and Development**
Monthly News and Highlights from
the World Leader in Forestry Research

#SoundScience

[Twitter](#) [Instagram](#) [Facebook](#) [YouTube](#)

[CLICK HERE TO SUBSCRIBE](#)

U.S. Forest Service R&D News: December 2020 *News from the Washington Office and Research Stations*



FEATURED STORY

Planting More Trees Can Increase Carbon Storage Capacity in the U.S.

Around the world, tree planting initiatives are underway to help slow forest loss and climate change. A recent Forest Service study sheds light on how we can target reforestation efforts to maximize climate benefits. Harnessing data from the Forest Service [Forest Inventory and Analysis](#) program, the scientists

evaluated the potential to enhance carbon sequestration capacity on productive forestland. They found that concentrating tree planting in understocked forestland, particularly in western states, Florida, and the Northeast, may substantially [increase carbon sequestration capacity](#) in the United States.

WILDLAND FIRE



Post-Fire Recovery Support

After wildfires are extinguished, communities often face continued threats associated with hazardous post-fire flooding and erosion. To help private land owners and resource managers understand and reduce these risks, the Forest Service developed the [After Fire Toolkit for the Southwest](#). It offers analysis tools, guidance on risk assessment and treatment selection, as well as training videos.

Delivering Wildfire Risk Information to Communities



[Wildfire Risk to Communities](#) is a website designed to inform the public about wildfire risk and to connect communities with resources that can help manage exposure. It includes interactive maps and charts of risk to homes, wildfire exposure types and likelihood. This information can help community leaders understand how risk varies across a state, region, or county and prioritize actions to mitigate it.



Dead Wood, Insects, and Fire

About one-third of all insect species depend on dead wood during their life cycle. Forest Service scientists investigated the impact different prescribed burn intensities have on [insect populations living in fallen trees](#). They found the composition of beetle and ant communities differed significantly between treatments, suggesting that repeated fires over long periods of time may lead to changes in species groups. *Image credit: [Martin Vorel on Libreshot](#).*

SUSTAINABLE FOREST MANAGEMENT

A Treasure Trove of Climate Tools and Data

The Forest Service [Office of Sustainability and Climate](#) collaborates with R&D to develop powerful [resources for forest management planning and adaptation](#) around the United States. Many are available as Web Mapping Applications, including the [Climate Map Explorer](#), a [Drought Summary Tool](#), and several region-specific products. These intuitive and accessible resources connect the



best available science with land managers to help them anticipate and plan for changes in climate.

FOREST PRODUCTS



Tree Waste into Biochar: A Bit of Alchemy?

Biochar can be made from forest debris left after thinning, harvesting, or restoration. When applied to soils, it can improve crop yields and render climate benefits. With partners at [Oregon State University](#) and the [USDA Agricultural Research Service](#), a [Forest Service scientist](#) explored the [economic feasibility of expanding biochar](#) production in Oregon and found favorable prospects. For more information on biochar, check out the Forest Service [Biochar Webinar Series](#).

America's Forests with Chuck Leavell Features Forest Products Laboratory



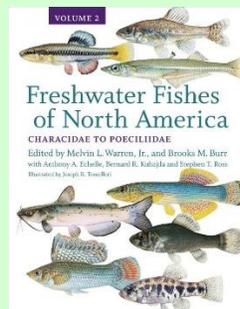
The Forest Service's Forest Products Laboratory (FPL) was recently featured on [America's Forests with Chuck Leavell](#), a series aired on the [Public Broadcasting Service \(PBS\)](#) celebrating sustainable forestry. In an episode featuring Wisconsin's forests and conservation work, Leavell, a rock-and-roll pianist and conservationist tree farmer, [explores FPL's past and present accomplishments](#). *Photo Courtesy of America's Forests with Chuck Leavell*

CONSERVING WILDLIFE



A Safer Passage for All

[Wildlife crossing structures](#), such as overpasses, effectively reduce animal-vehicle collisions on highways and allow wildlife to safely travel across landscapes. Forest Service scientists recently facilitated an exchange among experts to [develop strategies and design guidance](#) for expanding the use of these structures and help reduce costs.



New Reference Book on Freshwater Fishes of North America

The recently published second volume of [Freshwater Fishes of North America](#) is a definitive reference book on the ecology, morphology, reproduction, distribution, behavior, taxonomy, conservation, and fossil record for many fish families. The book was edited by a [Forest Service fisheries research scientist](#) who contributed to many of its 35 chapters.

DID YOU KNOW?



Kiss of Death? [Mistletoes Mar Forests](#)

Mistletoes are parasitic plants that rely on their tree hosts for water and nutrients. Though the type you kiss your sweetheart under during the winter holidays is the European *Viscum album* variety, the native dwarf mistletoe of the genus *Arceuthobium* [threatens forests in the western United States](#). The damage this plant inflicts is likely to increase with drier and hotter conditions associated with climate change.

Learn More!

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 is scheduled for January 13 at 1 p.m. EST.

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 fire impacts, management, and recovery, forest restoration, and wildlife management.

The Forest Service is a co-organizer of [National Biochar Week](#) taking place December 7 - December 11 from 11 a.m. - 2 p.m. EST each day. National Biochar Week spotlights the uses and implementation of biochar, with the goal to advance biochar/ biomass markets. Webinars will be presented daily focusing on "Biochar in the Real World - Why Biochar?"

Register for free access to the entire week of events at: <https://www.easternbiochar.org/>

Message from the Forest Service R&D Deputy Chief



Deputy Chief Alex L. Friend

A Fresh Dose of Optimism for 2021

As we wrap up the final days of December and look to next year, there is no doubt the tumult and trauma of 2020 will linger. But we can embrace the opportunity for renewal the new year provides and choose to step into 2021 with optimism and hope.

One doesn't have to look too far to find reasons for a positive outlook. In fact, it is at the core of the Forest Service R&D community's work. Every day, we go to work believing we can tackle some of our nation's biggest challenges – whether that's invasive species, climate change, drought, wildfire, or endangered species. Unflinchingly, our scientists and technicians chip away at unknowns, test different approaches, and find ways to deliver solutions to those that need them most.

This month's newsletter offers some great examples of this, underlining how R&D is providing the crucial science needed to bring about a brighter tomorrow. In our feature story, we

highlight new research that provides a powerful scientific basis for directing reforestation efforts to fight climate change. In the wake of this year's devastating wildfires, we also share how our researchers are supporting post-fire recovery and finding ways to more effectively share risk information with communities.

We hold dear the belief that we can contribute to a better future through our work. I hope this inspires you to bring in the new year with a fresh and renewed positive perspective on what we can accomplish together.

DECEMBER INFOGRAPHIC

CLEAN WATER FROM WAYNE NATIONAL FOREST

Natural water filtration services provided by vegetation in Wayne National Forest in Ohio are valued at about **\$3 million per year**—which is the avoided cost of using artificial water treatment for similar filtration services.



This estimate was included in the Draft Assessment for Wayne National Forest and was partly based on analyses from i-Tree Landscape—an online tool developed by Forest Service R&D, State & Private, and partners to help assess forestry benefits.

[Click here to download this infographic and dozens of other infographics on R&D research.](#)

[Click here for the archives of the U.S. Forest Service R&D Monthly Newsletter](#)



Forest Service

STAY CONNECTED

