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Forest Service

Research
and Development

Monthly News and Highlights from
the World Leader in Forestry Research

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The banner features a green and orange color scheme. On the right side, there is a graphic of a globe with two leaves sprouting from it. The text is arranged in a clean, modern layout with a white border around the main content area.

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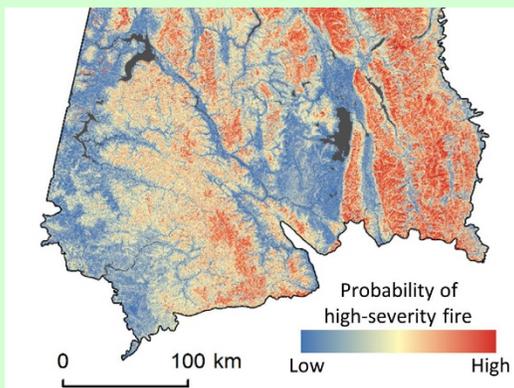
U.S. Forest Service R&D Newsletter: February 2020
News from the Washington Office and Research Stations



FEATURED NEWS

Threats to the "Tree of Life"

From Appalachian Voice: Oak trees have helped to shape culture, diet and ecosystems around the world, but now these trees are facing significant [threats](#) to their ability to thrive. Today, oaks are struggling to regenerate, and diseases spreading in the West and Midwest could bring ecological devastation if they take root in Appalachia. The Oak Conservation Alliance has a network of researchers, non-governmental organizations, educators, foresters, hunters and concerned citizens to monitor Appalachian forests and learn from other regions. The Forest Service is contributing research on managing oak systems.



MITIGATING WILDFIRE

A Double Whammy: Climate Change and Disappearing Forests

In the Intermountain Region of the western U.S., most forested landscapes are fire prone and adapted to a semiarid climate. With the severity of wildfires increasing as a result of excessive fuels, land managers are concerned about forests [converting](#) to shrubland or grassland. When you throw climate change into the mix, the wildfire conversion risk goes even higher.



CLIMATE RESEARCH

Warming in the Cold North

Arctic and boreal regions are warming more than twice as rapidly as the rest of the world. The timing of plants' flowering and fruiting is changing, with implications for insects, wildlife, and people who rely on these resources for food and livelihoods in Alaska. Forest Service scientists are contributing groundbreaking climate [research](#) in Alaska, with global implications.



OUTDOOR RECREATION

Climate Change Adaptation Strategies and Approaches for Outdoor Recreation

Using a combination of in-depth interviews of recreational managers and a review of peer-reviewed literature and government reports on outdoor recreation, Forest Service scientists developed a [synthesis](#) of impacts, strategies, and approaches, and a tiered structure that organizes this information.



MITIGATING WILDLAND FIRE

In the Eye of the Fire

Video: Observing phenomena inside of a fire is critical for improving decision support tools and training for fire managers. Forest Service research ecologist Mike Gallagher and Matt Hoehler, a research structural engineer at the National Institute of Standards and Technology, [partnered](#) to overcome that hurdle.



SUSTAINABLE FOREST MANAGEMENT

Forest Soils Recovering from Effects of Acid Rain

From American Society of Agronomy: Jennifer Knoepp, a research soil scientist with the Forest Service, has been [studying](#) how the reduction of air pollution and acid rain is affecting forests in the southern Appalachian Mountains. Her interest is to see how soils are recovering as the air gets cleaner.



SUSTAINABLE FOREST MANAGEMENT

Forest Service Report Provides a Comprehensive Look at Pinyon and Juniper Woodlands

Pinyon and juniper woodlands across the Western U.S. are changing, and this affects the communities and people who depend on them. A new [publication](#) about these woodlands will help land managers, working collaboratively with stakeholders and citizens, prioritize areas for treatment and identify strategies best suited to meet local needs.



WILDLIFE HABITAT

Northern Spotted Owls Threatened by Anticoagulant Rodenticides

Exposure of nontarget wildlife to anticoagulant rodenticides is a global conservation concern typically centered around urban or agricultural areas. Recently, however, the illegal use of such rodenticides in remote forests of California has exposed sensitive predators, including the federally threatened northern spotted owl, Forest Service scientists [report](#).

WILDLIFE HABITAT

Barred Owls Invade the Sierra Nevada

Scientific American [podcast](#): By listening to the sounds of the forest, Forest Service biologists identified an invasion of barred owls in spotted owl habitat.



WILDLIFE HABITAT

How Human-made Beaver Dams May Support Habitat Restoration

From Montana Public Radio: Ecologists are researching human-made beaver dams as a potential habitat restoration tool. Early case studies show the dams could dull the impacts of climate change on rivers and streams. The Forest Service, which is funding the [research](#), is looking to use the simple structures on new sites in Montana, but first, officials want to better understand the science behind simulated rodent engineering.



RIVER RESTORATION

A Model to Integrate Urban River Thermal Cooling in River Restoration

River water quality and habitats are degraded by thermal pollution from urban areas. A new Forest Service [study](#) updates the i-Tree Cool River model to simulate restoration of these processes to reverse the urban river syndrome.



SUSTAINABLE FOREST MANAGEMENT

Bumble Bees' Favorite Flowers Identified to Aid Bee Restoration



Bumble bees are essential pollinators for plants, and their ability to fly in colder temperatures make them especially important pollinators at high elevation. Researchers from The Institute for Bird Populations, the University of Connecticut, and the Forest Service [compared](#) which species of flowers the bees used relative to the availability of each flower species across the landscape.



SUSTAINABLE FOREST MANAGEMENT

Emerald Ash Borer Threatens Minnesota's Black Ash Forests

A nonnative insect that has killed millions of ash trees in more than 25 states is edging closer to Minnesota's black ash forests. Forest Service scientists and partners report new [findings](#) that are changing the way black ash wetlands are managed by state and federal agencies and tribes in Minnesota and Wisconsin.

The cover features the USA and Forest Service logos, the title 'Science FINDINGS', and the subtitle 'Working Together: How Science Partnerships Can Help Prioritize Rare Species for Conservation'. It includes a photo of a lizard and a small text box with the quote: 'These hands-on efforts show us that science can be a powerful tool to help us understand the world around us and make better decisions about the future.' The article is by Linda Thomas.

PARTNERSHIPS

How Science Partnerships Can Help Prioritize Rare Species for Conservation

Researchers from the Forest Service and partners developed an [index](#) that can help rapidly assess the vulnerability of Oregon's native freshwater fish, reptiles, and amphibians. The index can be used to assess inherent climate sensitivity across entire taxonomic groups using existing data.

DID YOU KNOW?



Sixty percent of family-owned forests in the U.S. are between 1 and 9 acres.

Forest Service scientists used data from the National Woodland Owner Survey to understand small-area family forest ownerships and compare them to larger area family forest ownerships. Information from this [study](#) will help the professional forestry community assist small-acreage family forest ownerships.

Messages from the Forest Service R&D Washington Office



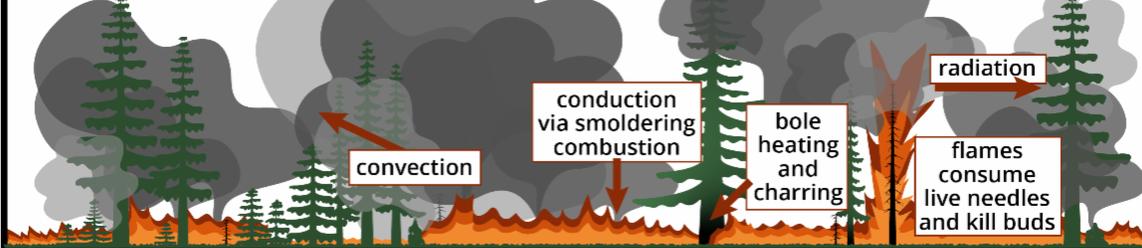
Read a [message](#) from Alexander Friend, Forest Service Deputy Chief for R&D, on the value of research.



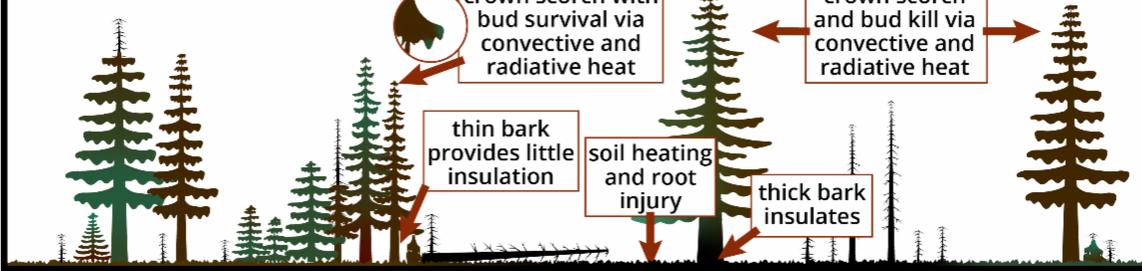
The Forest Service's Urban Forest Connections [webinar](#) series brings experts together to discuss the latest science, practice, and policy on urban forestry and the environment.

FOREST SERVICE RESEARCH: HOW FIRES KILL TREES

During Fire



After Fire



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