



United States Department of Agriculture

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Forest Service

Research
and
Development

Monthly News and Highlights from
the World Leader in Forestry Research

#SoundScience

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The banner features a green and gold color scheme. On the left, the Forest Service shield logo is positioned above the text 'Forest Service'. Below this, the words 'Research and Development' are written in a large, white, sans-serif font. A gold-colored rectangular box contains the text 'Monthly News and Highlights from the World Leader in Forestry Research'. On the right side, there is a stylized white graphic of a globe with leaves. At the bottom right, the hashtag '#SoundScience' is displayed, followed by icons for Twitter, Instagram, Facebook, and YouTube.

USDA Forest Service R&D Newsletter - August 2019

News from the Washington Office and Research Stations



FEATURED NEWS

[Science Simulations Support Salmon and Other Species](#)

"To successfully conserve and restore one species, we need to know how the larger food web responds to our efforts," said J. Ryan Bellmore, a Forest Service research fish biologist in Juneau, Alaska. A [report](#) by Bellmore and partners describes an interactive model that can address specific river research and management questions. This model—the Aquatic Trophic Productivity (ATP) computer simulation—links the success of fish populations to their food webs and conditions that influence them.



SUSTAIN FORESTS AND GRASSLANDS

[Science-Based Forest Planning](#)

The 154 national forests and 20 national grasslands in the United States are managed according to forest plans that are based on "the best available science." A new [study](#) confirms that much of that "best science" stems from Forest Service research.



WATERSHED MANAGEMENT

New eDNA Method Reveals Stream Biodiversity

For the first time, a novel genomics-based [method](#) was used to detect the simultaneous presence of hundreds of organisms in a stream. Applications of this new method--which builds on methods for single species sampling--include monitoring for diseases, invasive species, and rare or endangered species. This research was conducted by the Forest Service and partners.



FOREST PRODUCTS

Forensics Help Fight Illegal Logging

The Forest Service and partners used [forensics](#) to test the accuracy of labeling of wood in products sold in the United States. Sixty-two percent of tested products were mislabeled—a possible sign that these products are illegal. The study is aimed at combating fraud and illegal logging.



WILDLIFE HABITAT

Old-Growth Forests May Provide Valuable Biodiversity Refuges

Forest Service [research](#) shows that old-growth forests, a critical nesting habitat for threatened northern spotted owls, are less prone to high-severity fire during wildfires than young-growth forests. This research underscores the potential of old-growth forests to provide fire refuges that support biodiversity in the Pacific Northwest.



MITIGATE FIRE RISK

Chemical Attraction: How Heat-Stressed Trees May Draw Beetles

It is widely known that trees stressed from fire injuries are vulnerable to bark beetle attacks. Now, a new Forest Service [model](#) helps explain how sub-lethal fire temperatures cause chemical changes in wood that attract some beetles. This research holds promise for developing ways to assess which trees should be culled after a fire.



SUSTAIN FORESTS AND GRASSLANDS

Assessing Alaska's Remote Forests

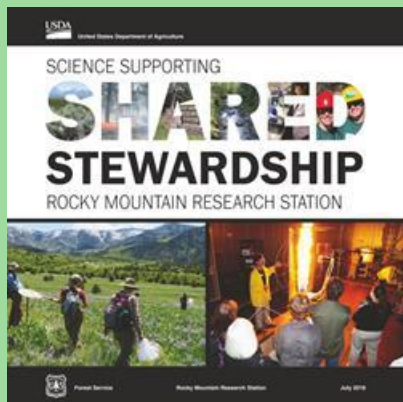
Alaska's boreal forest accounts for about 15 percent of forested area in the United States. Preliminary results are available from the first [assessment](#) of forest inventory in the remote, rugged Tanana Valley of Interior Alaska. The assessment was conducted by the Forest Service and the Alaska Department of Natural Resources.



SUSTAIN FORESTS AND GRASSLANDS

Sustaining Island Forests

The Forest Service developed a comprehensive [assessment](#) of the sustainability of forests and islands in the Caribbean and Pacific based on ecological, economic, and social criteria. This is a resource for decision-makers and others.



SHARED STEWARDSHIP

[Science Supporting Shared Stewardship](#)

Shared stewardship is about working together in an integrated way to make decisions for the land. A new [booklet](#) describes how science from the Rocky Mountain Research Station supports shared stewardship to improve lives and landscapes.



RESTORATION

[Biochar to the Rescue!](#)

Biochar, a porous carbon substance that results from burning wood in the absence of oxygen, helps restore soil damaged by fire or human activity. Forest Service scientists and Air Burners, Inc., [teamed up](#) to optimize biochar production for the marketplace. The company's commercial fireboxes, used for processing wood and vegetative waste, are being modified to produce high-quality biochar for forest restoration.



MITIGATE WILDFIRE RISK

[Going Deep Inside a Fire](#)

Forest fires may often exceed 2,000 degrees Fahrenheit—that's equivalent to one-fifth the temperature of the surface of the sun. How do such high temperatures impact forest soils and plants? To help answer such questions, Forest Service scientists and collaborators [studied](#) a prescribed fire from start to finish.



INVASIVE SPECIES

Effects of Forest Fragmentation on Invasive Species

Invasive species threaten ecosystem health, prevent the growth of native species, and cause significant damage for land owners. New Forest Service [publications](#) may be used to help predict which types of invasive pests pose the largest threats after forest fragmentation; and, support ecological restoration that is minimally susceptible to invasive species.



HUMAN HEALTH

Does Tick Threat Grow as Grass Grows? Not Necessarily

A new [study](#) challenges the common assumption that ticks in urban areas prefer longer grass. The study was based on analyses of Blacklegged ticks, which are notorious carriers of Lyme disease.



SHARED STEWARDSHIP

Story Map: Making Trees Outside Forests Count

Trees in agricultural landscapes, called trees outside forests, are an under-counted resource in the United States. Forest Service researchers and partners are leading a first-of-its-kind [effort](#) to assess and map this resource.



SHARED STEWARDSHIP

CNN: Cities Are Fast Losing Trees

Forest service research estimates the annual value of urban tree loss at \$96 million. CNN's [coverage](#) of this research also discusses benefits of urban trees and how to help conserve trees.



HISTORY

Smokey Bear is 75 Years Young

Smokey Bear has been working to inspire Americans to prevent wildfires since 1944. The Forest Service [Natural Inquirer](#) Program recently honored Smokey Bear as a Wildfire Prevention Specialist in their series of scientist [cards](#).

More about the science of preventing and fighting unwanted fires is at the smokeybear.com web site.

Messages from the Deputy Chief of Research and Development



Safeguarding a Welcoming Environment for All

Forest Service Deputy Chief for Research and Development Alexander Friend recently [discussed](#) the importance of a welcoming and inclusive workplace. Alex Friend's commitment to diversity and inclusion is rooted in his own personal experiences.



Remembering Robert Foster Lewis, Jr., Former Head of Forest Service Research

Robert Foster Lewis Jr., former Forest Service Deputy Chief for Research and Development, died July 17. He retired from the Forest Service in 2004 after a long federal [career](#).



Forest Service Employee Kate MacFarland Honored for Advancing Agroforestry

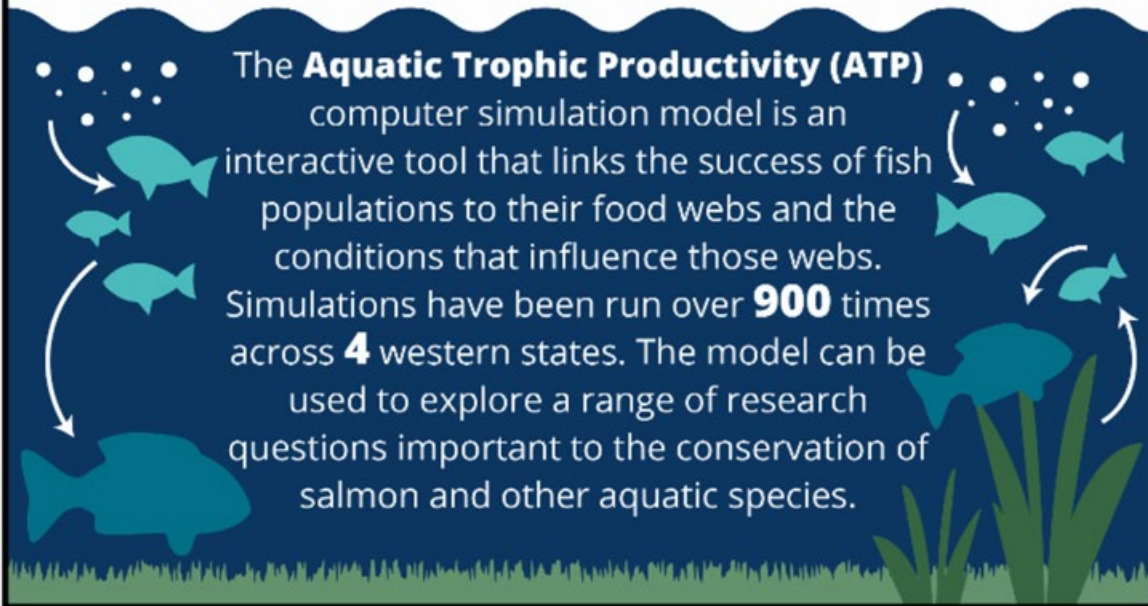
Kate MacFarland, Assistant Agroforester at the USDA National Agroforestry Center, received an early career [award](#) from the Association for Temperate Agroforestry.



John Parrotta is New President of IUFRO

John Parrotta, a research program leader for international science issues at the Forest Service, will serve as [president](#) of the International Union of Forest Research Organizations (IUFRO) for a five-year term, beginning October 2019. [IUFRO](#) has 627 members in 126 countries.

FOREST SERVICE RESEARCH: BY-THE-NUMBERS



The **Aquatic Trophic Productivity (ATP)** computer simulation model is an interactive tool that links the success of fish populations to their food webs and the conditions that influence those webs. Simulations have been run over **900** times across **4** western states. The model can be used to explore a range of research questions important to the conservation of salmon and other aquatic species.

[Learn More About Modelling River Ecosystems](#)

[Visit the Archives](#)



Forest Service

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