



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

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The banner features a green and orange color scheme. On the left, the Forest Service 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 white-bordered box contains the text 'Monthly News and Highlights from the World Leader in Forestry Research'. On the right side, there is a graphic of a globe with two leaves, and the hashtag '#SoundScience'. At the bottom right, there are icons for Twitter, Instagram, Facebook, and YouTube.

USDA Forest Service R&D Newsletter - April 2019
News from the Washington Office and Research Stations

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FEATURED NEWS

First-Ever Scientific Framework for Sagebrush Conservation

The Departments of Agriculture and Interior released the second part of a science [framework](#) that addresses threats to sagebrush ecosystems across 11 Western states. The framework, which was authored in part by USDA Forest Service scientists, is designed to help federal, state, local, tribal, and private land managers identify specific project areas and management strategies and tools to achieve their conservation and restoration objectives.



SUSTAIN FORESTS AND GRASSLANDS

Newsweek: Cloud Forests are Losing Their Clouds

A [study](#) by Forest Service scientists and partners suggests that by 2020 changing climates could affect up to 90 percent of the Western Hemisphere's cloud forests. Cloud forests are located high up in tropical mountains and intercept huge amounts of water vapor, supplying

water to streams. They are also some of the most biodiverse ecosystems in the world.



PROVIDE EXCELLENT CUSTOMER SERVICE

The State of the Forest

Just in time for Earth Day, the Forest Resources of the United States [report](#) announced an updated census of the nation's forests and woodlands. The report found that forests and woodlands account for about 823 million acres in the U.S., and that urban trees can reduce energy use for heating and cooling by \$5.4 billion per year. The Forest Resources of the United States report is a supporting document to the 2020 Resources Planning Act Assessment.



SUSTAIN FORESTS AND GRASSLANDS

The Organic Truth: Forest Resiliency on the Kootenai National Forest

A Forest Service [study](#) conducted over 22 years in a northwestern national forest found that soil may recover faster after timber is harvested than scientists previously thought. While previous studies suggested that soil recovery could take up to 40 years, scientists observed soil recovery take place in the first five to seven years of post-harvest. This research can help land managers better identify what equipment to use for future harvest operations and when and where to conduct harvests.



SHARE SCIENTIFIC BREAKTHROUGHS

Pheromone Blend Draws More Invasive Insects

Forest Service scientists have developed a unique [blend](#) of pheromones--chemicals insects release that affect the behavior of other insects. This blend may draw multiple species of non-native, wood-boring bugs to the same trap, helping land managers quickly locate invasive species in an area and prevent them from establishing populations.



SUSTAIN FORESTS AND GRASSLANDS

Sustaining Wildlife Populations in Productively Managed Forests

A Forest Service [article](#) synthesizes the latest research models to assess the impact of wood fiber production on wildlife populations. This data can help land managers plan the location, timing, and intensity of harvests to help them sustain wildlife and continue wood fiber production. The researchers found that more data is needed to better understand the ecological impact of wood harvesting, including greater ecological detail in population models and developing community-level models.



MITIGATE WILDFIRE RISK

Video: New Tools for Spatial Fire Planning

This creative whiteboard [video](#) illustrates a series of tools the RMRS Wildfire Risk Management Science Team has developed to support spatial fire planning. These tools include: quantitative wildfire risk assessment, a suppression difficulty index, potential control locations, and boundaries such as roads, ridgetops, and bodies of water that may affect fire control operations. Incident management teams use these tools to find the best way to suppress fires and to keep fire responders safe.



MITIGATE WILDFIRE RISK

The Hot-Dry-Windy Index Improves Fire Weather Forecasting

Forest Service scientists and their partners devised a new fire weather [index](#) (the Hot-Dry-Windy Index) capable of identifying days when weather conditions--temperature, moisture, and wind--could make fires especially dangerous. The National Weather Service has recommended that fire weather forecasters begin evaluating the Hot-Dry-Windy Index as a potential fire weather tool.



MITIGATE WILDFIRE RISK

Weather Conditions Inform Timing of Prescribed Fire

A Forest Service modeling [study](#) identified specific weather conditions that allow large smoke plumes to form and travel long distances during and after prescribed burns. It showed that smoke plumes form best when they occur between two low-pressure systems. This research is part of the national Fire and Smoke Model Evaluation Experiment (FASMEE), which seeks to better understand and predict smoke generated by wildland fires.



HISTORY

Celebrating Earth Day 2019

Earth Day was created as an environmental teach-in by U.S. Senator Gaylord Nelson on April 22, 1970. This year's Earth Day [theme](#), "Protect Our Species," emphasized the importance of supporting wildlife to maintain healthy, sustainable ecosystems. Forest Service research helps support the USDA goal of enabling people and wildlife to thrive together by providing land managers the research-backed information they need to make informed sustainability decisions.



DID YOU KNOW?

Over One-Third of the Nation's Landscape is Forest or Woodland

A recent [report](#) finds that U.S. forest area has plateaued at 822.5 million acres. However, the forests are aging--most tree stands on national forests are now over 60 years old. Tree volume on national forest lands has continuously increased over the past decade with the exception of the Rocky Mountain region, which has experienced a decline due to wildfires, drought, and pine beetle infestation.

Scroll down to view an infographic on national forests.

More News



Invasive Species Science Update

Check out this annual newsletter on invasive species for new research on the long-term effects of drought on competition between native and invasive plants, the effects of drought on pollinator visitation to invasive plants, and a novel use of insect pheromones to improve biocontrol of invasive saltcedar trees.



Eucalyptus Freezes in the Piedmont

A Forest Service study found that the *E. benthamii* species of eucalyptus is maladapted to the North Carolina Piedmont (a plateau region in the Eastern United States). The study showed that more than 50 percent of the cells in Eucalyptus leaves were irreparably damaged at temperatures below -13.4 degrees Celsius.

BY-THE-NUMBERS

National forests managed by the Forest Service
account for **19 percent** of the nation's forests



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Forest Service

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