



United States Department of Agriculture

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The banner features the U.S. Forest Service logo on the left, followed by the text "Forest Service" and "Research and Development". Below this, an orange 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. At the bottom right, the hashtag "#SoundScience" is displayed above icons for Twitter, Instagram, Facebook, and YouTube.

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

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FEATURED NEWS

E-Noses Detect Diseases in Plants, Animals, and Humans

USDA Forest Service scientists are using electronic nose (e-nose) devices to [identify](#) the "smellprint" or chemically unique odor of the fungal pathogen *Pseudogymnoascus destructans* (Pd) in bats. Pd causes white-nose syndrome, a disease that has killed over six million bats since 2006. This research may also be used to detect many other wildlife diseases on national forests. Watch this Untamed Science [video](#) to learn more.



ENHANCE RECREATION

Can Canada Lynx and Winter Recreation Share the Same Slope?

Using data from GPS collars worn by Canada lynx and GPS devices carried by recreators, Forest Service researchers [studied](#) how winter recreation activities impact lynx in White River National Forest and the San Juan range in Colorado. The researchers found that lynx avoided high-intensity ski resorts in the winter and moved around less in areas with high-intensity back country skiing and snowboarding. However, the researchers found no consistent evidence that lynx avoided areas with low to moderate recreation.



SUSTAIN FORESTS AND GRASSLANDS

Helping Forests Keep Pace with Climate Change

Rapidly changing climates threaten forest biodiversity, endangering human health and economies. To protect at-risk trees such as the Douglas-fir in national forests across the country, Forest Service scientists are [studying](#) assisted migration--the intentional relocation of species and populations to new sites where they are predicted to fare better in future climates. Despite its risks and challenges, many scientists agree that a careful, well-regulated, and flexible approach to this land management strategy is important for preserving biodiversity.



SUSTAIN FORESTS AND GRASSLANDS

Restoring Strip Coal Mine Lands in West Virginia

The Forest Service and its collaborators are re-establishing native tree, shrub, and herbaceous plants on the former Lambert Run [strip-mining site](#) in Monongahela National Forest. The project aims to give the site a much-needed boost in order to completely restore its native spruce ecosystem over time. These efforts will make the ecosystem more resilient and adaptable to future changes in climate.



MITIGATE WILDFIRE RISK

Prescribed Fire Creates Favorable Forest Conditions

Forest Service scientists used remote sensing to [study](#) the effects of repeated prescribed fire on over 85,000 acres in the George Washington and Jefferson National Forests. They found that prescribed burning keeps forests open, rather than thickening into mature canopies, and maintains the productive early stages of succession that benefit many species. However, repeated fires do not necessarily result in even

more open forests. This research will help national forest land managers refine their use of prescribed fire while advancing restoration efforts throughout the region.



SUSTAIN FORESTS AND GRASSLANDS

Snowfly Labeled 'Sensitive Species' Isn't Actually a Species

Using molecular genetic tools, Forest Service scientists [discovered](#) that a small aquatic snowfly found on the Arapaho and Roosevelt National Forests in northern Colorado is actually a hybrid of two other snowfly species. The Arapahoe snowfly was long believed to be a distinct species and received Sensitive Species protections through the Endangered Species Act. This revelation about the snowfly's true identity will help national forest land managers refocus their conservation priorities. The same genetic tools could help answer questions about other rare species to better inform management actions.



SUSTAIN FORESTS AND GRASSLANDS

Silvicultural Treatments May Help the Plight of Hemlock Seedlings

In two recent [studies](#) on potted hemlock seedlings, Forest Service researchers found that hemlocks--the most shade-tolerant tree species in eastern North America--may benefit from a dose of sunlight. Eastern hemlocks are facing infestation from hemlock wooly adelgids (HWA), sap-sucking insects that can kill mature trees in less than five years. The studies indicate that extra sunlight equals fewer HWA, suggesting that gaps created by silviculture may provide protection. However, the scientists plan to conduct further trials before recommending that land managers use silvicultural treatments for hemlock populations.



SUSTAIN FORESTS AND GRASSLANDS

Video Series Promotes Proactive Wildfire Risk Management

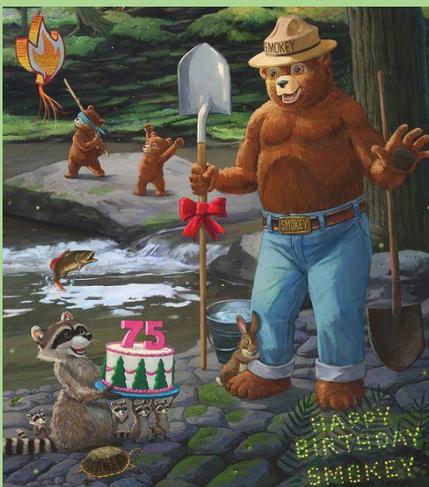
A three-part whiteboard-style Forest Service [video series](#) describes cutting edge risk management tools developed by the Wildfire Risk Management Team, which works with national forests and other fire managers to plan ahead for fire season. The videos describe the history and future of humans' relationship with fire, the use of both advanced modelling and local knowledge to manage fire risk, and new tools for spatial fire planning.



SUPPORTING LANDOWNERS

Why Some Farmers are Planting Trees Alongside Their Crops

In a [segment](#) that aired on the Yale Climate Connections radio program on March 19, a Forest Service scientist explains how growing trees alongside crops or livestock ("agroforestry") benefits the environment as well as farmers and ranchers. Trees can provide fruit, nuts, or timber that can be sold to diversify the landowner's income while simultaneously preventing soil erosion and fertilizer runoff.



HISTORY

Celebrating Smokey Bear on the International Day of Forests

On March 21, the Forest Service commemorated the [International Day of Forests](#) and its 2019 theme, Forests and Education, with the 75th birthday of Smokey Bear. His clear, focused message, "Only You Can Prevent Forest Fires", has endured for generations in the United States and has inspired countries around the world to develop their own forest education mascots. Smokey Bear is also backed by scientific research. A 2015 study by the University of Delaware suggests that adults change behavior when education campaigns use animal mascots such as Smokey Bear.



SUSTAIN FORESTS AND GRASSLANDS

Climate Change Resource Center Topic Pages

The Forest Service Climate Change Resource Center (CCRC) has two new topic pages--one on [climate change refugia](#) and the other on [assisted migration](#). CCRC topic pages are peer reviewed briefings on a given subject in the context of a changing climate. These resources are developed specifically for land managers.



DID YOU KNOW?

eDNA is a Test that Uses Tiny Samples of Free-Floating DNA to Detect Species

Drawing a sample of environmental DNA (eDNA) from a body of water or snow tracks only takes about eight minutes—about five times faster than conventional survey methods. The process only costs 10 to 50 percent as much and requires just two copies of DNA to detect the presence of a species in an ecosystem.

Scroll down to infographic for more on eDNA.

More News



[Technology Transfer License Notice](#)



[Faces of the Forest Service: Meet Roderquita Moore](#)

This serves as notice that the U.S. Department of Agriculture, Forest Service, intends to grant to Hunter Farms dba Whispering green Energy of 684 County Road #2 Hillier, Ontario K0K 2J0, Canada, an exclusive license to U.S. Patent Application No. 15/882,078, "LOW TEMPERATURE AND EFFICIENT FRACTIONATION OF LIGNOCELLULOSIC BIOMASS USING RECYCLABLE ORGANIC SOLID ACIDS", filed on January 29, 2018.

Comments must be received on or before May 1, 2019. For more information, please visit the [Federal Labs Licenses List](#).

Roderquita Moore is a research chemist at the Forest Products Laboratory. She received the [Inspiring Woman in STEM award](#) as part of the 2018 USDA Women in Ag award program. Visit [Treesearch](#) to learn more about Moore's wood chemistry research.

BY-THE-NUMBERS

Environmental DNA (eDNA) tests can detect free floating DNA in soil, water or air to help determine if a species of interest is present in an ecosystem.



These detectable species include bull trout, grizzly bear, coho salmon and harlequin duck. The total number of detectable species is constantly increasing.

[Learn More About eDNA](#)



Forest Service

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