

U.S. Forest Service R&D Newsletter - January 2018

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U.S. Forest Service

Research and Development

Monthly News and Highlights from the World Leader in Forestry Research

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FEATURED NEWS

From NPR: Why There are Challenges to Doing More Prescribed Burns

A USDA Forest Service scientist explains on [NPR's All Things Considered](#) that prescribed burns can prevent dangerous wildfires and cost a lot less than fighting uncontrolled fires. However, varied challenges have prevented this land management technique from being used to treat the many acres that need it.



WILDFIRE

From ScienceDaily: Forecasting When Weather Increases Wildfire Danger

The Forest Service and St. Cloud State University collaborated to develop the [Hot-Dry-Windy \(HDW\) Index](#), a tool that works with temperature, moisture, and wind to help determine how fast a wildfire will grow and spread and how dangerous it may become. The team tested the HDW index by comparing its predictions with fire behavior recorded during four recent wildfires and found that it performed more accurately than an existing tool, the Haines Index.



EXPERIMENTAL FORESTS

Forest Research Continues in Upper Peninsula Michigan

Forest Service researchers have been using the Dukes Experimental Forest to [study](#) northern hardwood management techniques since the 1920s: in fact, Dukes is the oldest experimental forest in the Eastern region. In the next few months, researchers will compile old and new data from the forest to help adapt silvicultural practices to the changing needs of the future.



GENETICS

Tracking Snow: How Scientists are Using DNA to Identify Rare Species (Video)

Forest Service scientists have found that by extracting DNA from animal tracks in the snow and analyzing the samples with cutting-edge genomic tools, it is possible to detect rare species, such as lynx, without ever laying eyes on them. They found that this method outperforms traditional lab techniques, suggesting it could revolutionize winter surveys.

Check out the [video](#) to learn more.



CLIMATE SCIENCE

How to Manage Forests in a Changing Climate (Video)

The Forest Service's Northern Institute of Applied Climate Science (NIACS) partnered with American Forests to create an adaptation workbook to help scientists and land managers understand how changes in climate will affect a particular place or species. This tool breaks down the complex issue of climate change into more easily understood sections.

Check out the [video](#) to learn more.



FRESHWATER

Why Forests Make Good Upstream Neighbors

Forest Service scientists examined how the conversion of forests to urban areas in the Yadkin Pee-Dee River Basin of central North Carolina would affect streamflow in 28 smaller watersheds. They [found](#) that the combined effects of decreased forest and warmer climate amplified stress on water supply: stream baseflow decreased significantly when both factors were accounted for in their models. This research suggests that it may be beneficial to incorporate

forest conservation into climate adaptation plans designed to protect the future water supply.



HISTORY

The Annual Journey of the U.S. Capitol Christmas Tree

Every year since 1970, the Forest Service has provided a Christmas tree for the West Lawn on Capitol Hill. The tree is always nicknamed "[The People's Tree](#)" because its decorations are handmade by hundreds of kids from the tree's home state. Its origins vary: the tree may be harvested from Virginia, California, or even Alaska. This year's fir tree hails from Oregon, 3,000 miles from D.C.



CONSERVATION

Jumpstarting Wyoming Big Sagebrush Recovery

Wyoming big sagebrush is on the decline due to more frequent wildfires. Mature sagebrush often die when fires burn through, with their seed banks often destroyed as well. This makes it difficult for sagebrush to regenerate in burned areas. A multi-year Forest Service [study](#) identifies which sagebrush seeding practices are most successful in these sites. The researchers believe their results will help land managers identify the best technique for postfire sagebrush seeding.



CONSERVATION

State Property Tax Programs Promote Forest Conservation

Every state in the U.S. offers tax breaks to forest landowners in order to incentivize healthy land management practices that promote clean water, timber and other forest plants, scenic beauty, wildlife habitat, and carbon storage. But a [report](#) from the Forest Service and partners finds that details of these tax programs vary widely, which makes it hard for policymakers to compare them. The team assessed and summarized laws

for each state's property tax incentive programs and consolidated their findings into one document, to make it easier for states to compare programs and adopt the most effective designs.



ECOLOGY

Aldo Leopold was Right About Deer Browsing

Forest Service researchers [found](#) that legendary conservationist Aldo Leopold was correct in the predictions he made seventy years ago that white-tailed deer browsing in the Midwest and Northeast would become a problem. Currently, 59 percent of the 182.4 million acres of forest land the researchers inventoried in these regions was estimated to have moderate or high browse impacts, with the Mid-Atlantic region affected the most. When deer deplete understory vegetation, species of plants with little nutritive value gain a competitive advantage, altering the forest ecosystem.



FOREST RESTORATION

Promoting Sustainability with a New Community Forest in Puerto Rico

With help from the Forest Service and a local nonprofit organization, the Puerto Rico Municipality of Mayaquez acquired about 68 acres of land to establish a [community forest](#). This will be the only large block of continuous forest land in the area and will be used to develop an agro-ecotourism project to promote sustainable forest management to the general public.



DID YOU KNOW?

Peatlands Contain Mysterious Stores of Carbon

Peatlands—also known as bogs, moors, fens, peat swamps, and mires—accumulate organic matter over thousands of years. The layers of peat build up because plant material does not fully decompose in the wet, oxygen-starved conditions. Peatlands are not well-mapped. In particular, tropical mountain peatlands contain extensive peat soils that have yet to be mapped or included in global carbon estimates.

Scroll down to infographic for more on peatlands.

Recent Blogs



Rebuilding Wet Meadows Through Shared Stewardship

Forest Service scientists and partners are collaborating to slow the flow of water across degraded sagebrush meadows.



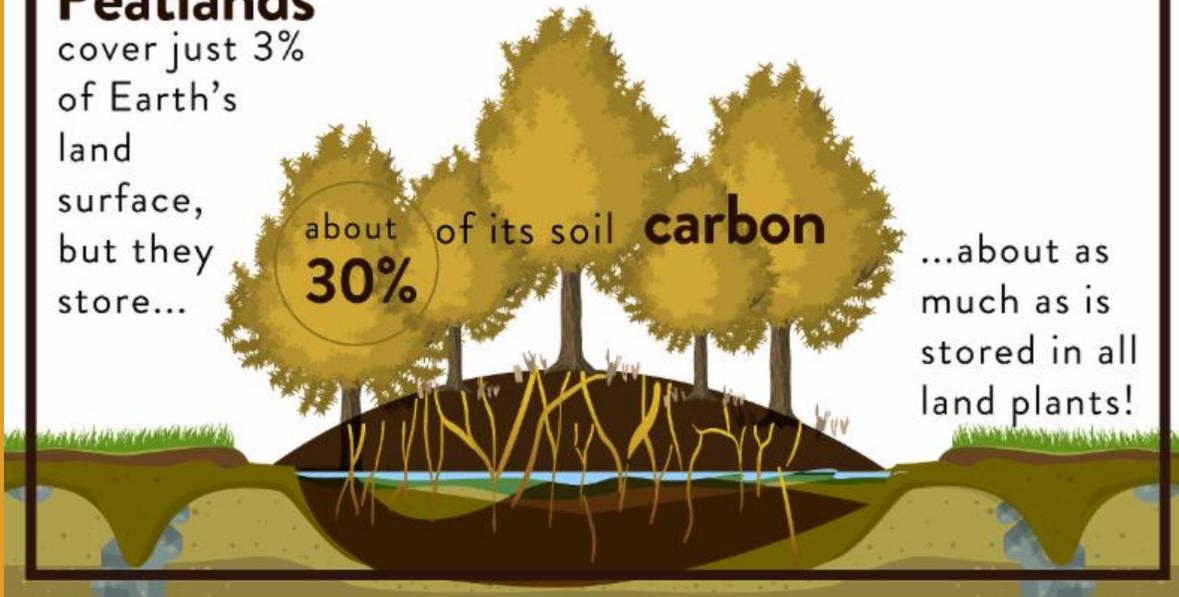
Tribal Resource Crews Help Restore National Forests and Archaeological Sites

The Forest Service sponsored a training session in Oklahoma to help restore forests while providing opportunities for tribe members.

BY-THE-NUMBERS

Peatlands

cover just 3%
of Earth's
land
surface,
but they
store...



about **30%** of its soil **carbon**

...about as
much as is
stored in all
land plants!

[Learn More About Peatlands](#)

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