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U.S. Forest Service R&D Newsletter: November 2019

News from the Washington Office and Research Stations

FEATURED NEWS

Studying Wildfire from Every Angle

The Forest Service is co-leading a large-scale, multi-agency project to improve wildland fire and smoke models and promote firefighter safety. This project--the Fire and Smoke Model Evaluation Experiment (FASMEE)--is dedicated to collecting data from large prescribed fires using arrays of varied instruments including radar, LiDAR, ground and atmospheric monitoring, planes and satellites. In June, FASMEE collected data from a controlled burn in Fishlake National Forest in Utah. An upcoming nearby FASMEE fire--expected to be precedent-setting--is previewed in *The Atlantic*.

SUSTAINABLE FOREST MANAGEMENT

Hard Times for the “Tree of Life"

From the National Wildlife Federation: Oak trees are essential to scores of animal and plant species. Historically, oaks accounted for 55 percent of forests in the east-central U.S., but that figure is now down to 25 percent due to pests, diseases, fire suppression and climate change. Homeowners may promote oak recovery and help wildlife by planting oaks. Such individual actions could be cumulatively transformational. (Oaks are the most important trees for wildlife in 84 percent of U.S. counties.)

CONSERVING WILDLIFE

Epic Recovery of Beloved Songbird

In one of America’s greatest conservation success stories, the Kirtland’s warbler will be removed from Federal Lists of Endangered and Threatened Wildlife. No other bird species has hovered so close to extinction and then recovered. The Forest Service worked with partners for decades to foster this recovery.

DELIVERING BENEFITS TO THE PUBLIC

Water Study Is "Editor’s Choice"

Forest vegetation is using significantly more water--a trend that correlates with the increasing length of the growing season. These findings were published in a study that was co-authored by Forest Service researchers and received the *Water Resources Research* Editor's Choice Award. This study may help land managers plan for future changes in water supplies.

DELIVERING BENEFITS TO THE PUBLIC

Subsistence Resources Changing

Some Alaskan shorelines are rising as glaciers melt and land rebounds. Other shorelines are being submerged by rising sea level. These changes are altering coastal habitats and subsistence resources that support many rural Native communities in southeast Alaska, according to Forest Service research.

DELIVERING BENEFITS TO THE PUBLIC

New Story Map on Windbreaks

The National Agroforestry Center's story map, Windbreaks in the Great Plains, provides sweeping views of the past, present and future of windbreaks. Since the 1930s Dust Bowl, windbreaks have reduced soil erosion, enhanced crop production, protected livestock, and conserved water. Also, windbreaks provide habitat for wildlife and pollinators, sequester carbon, and generate income opportunities.

SUSTAINABLE FOREST MANAGEMENT

Study on Firesetting Arrests is "Editor's Choice"

A Forest Service study indicates that arrests of intentional illegal firesetters may help reduce future intentional illegal wildfires. This study may support law enforcement strategies for reducing intentional fires and protecting public safety. This study was chosen as "Editor's Choice" by *The International Journal of Wildland Fire.*

DELIVERING BENEFITS TO THE PUBLIC

Landscape Patterns Matter

The size, shape, and arrangement of fields, forests, wetlands, and human populations impact resource sustainability, ecosystem health and habitat connectivity. A special issue of *Landscape Ecology*--co-organized by the Forest Service--addresses landscape pattern analysis.

FOREST PRODUCTS

Bridging the Gap: New Markets for Forest Materials

The Moffett Creek Bridge in California is being constructed from concrete containing tiny wood particles. These wood particles increase concrete strength, according to research by the Forest Products Laboratory and partners. Also, this type of innovative use of wood particles helps drive demand for low-value wood derived from excess vegetation in forests. Alternatively, if this excess vegetation were left in forests, it could fuel catastrophic wildfires.

SUSTAINABLE FOREST MANAGEMENT

Collaborating on Indigenous Burns

From Wired Magazine: Increasing collaboration between the Forest Service and California's indigenous communities on controlled indigenous burns is an affirmation by Western science that such burns help prevent catastrophic wildfires, help sustain wildlife and promote cultivation of culturally important plants.

DID YOU KNOW?

Invasive European earthworms transform entire ecosystems

European earthworms are expanding into some formerly worm-free U.S. forests. These invasive earthworms consume organic material in the forest floor, often removing leaf litter within several years of invasion. This removal changes the ecology of plant communities. The Forest Service is researching this topic.

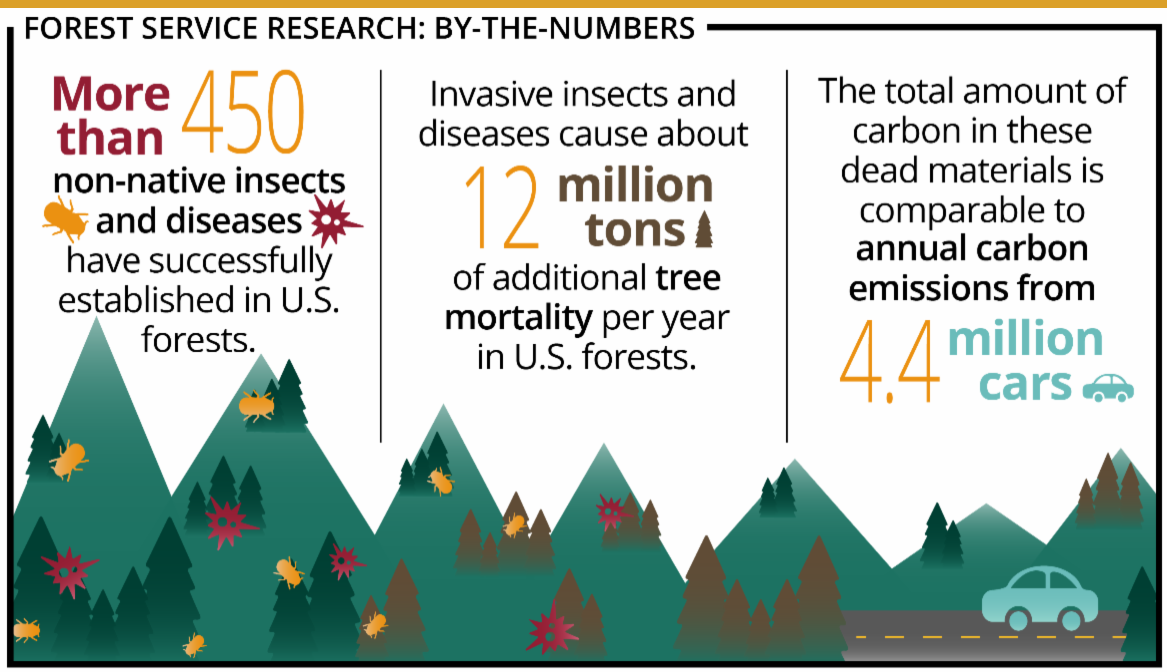
Messages from the Deputy Chief of Research and Development

Team Receives ESA Award for Research on Changing Tree Ranges

A team including Christopher Oswalt, a research forester with the Forest Service's Forest Inventory and Analysis Program, received an Ecological Society of America (ESA) award for a study showing that tree ranges are shifting westward or northward in response to climate change. This same study was among *Discover* magazine's top 100 science stories of 2017.

Meet John Parotta, President of IUFRO

John Parotta is the program leader for International Forest Science Issues in Research and Development. He also recently started a five-year term as president of the International Union of Forest Research Organizations (IUFRO).



More About Impacts from Non-native Species and Diseases

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Forest Service

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