

U.S. Forest Service R&D Newsletter - December 2017

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***News from the Washington Office and Research Stations***

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## FEATURED NEWS

### **Tropical Island Sustainability**

Are island tropical forests sustainable? This is a complex question with no easy "yes" or "no" answers and subject to varying interpretations. You can reach your own conclusions based on [this new report](#).



#### WILDLIFE

### **Worldwide Amphibian Declines**

Researchers [compared different methods](#) of disease detection to help slow the worldwide declines in amphibian populations. They also examined potential pitfalls of using established laboratory DNA-analysis techniques for disease detection.



#### WILDLIFE

### **Plant Flowering and Fruiting Changes Affect Bird Abundance**

Researchers found that three species of native Hawaiian birds [time their breeding season](#) with the availability of 'ōhi'a lehua flowers. But changes in climate conditions affect when the plants flower, and this effect can cascade up the food change. A drier future climate could mean reductions in native bird populations.

#### URBAN FORESTRY



## iTree Updates

iTree is a freely available suite of tools to assess the benefits of trees. New updates include data on: land surface temperatures, climate change projections, composition and sizes of forest species, air quality, wildland-urban interfaces, plant hardiness zones, insects and diseases, and future ozone concentrations.

## FOREST PRODUCTS

### Innovating with Nanocellulose

It might seem hard to believe that nanocellulose from wood can be used to make ballistic glass, synthetic armor, replacement tendons (yes, in people!), and coatings that keep food fresh longer. But it's all within reach, thanks to nanocellulose research. Learn all about it [in this video](#) .



## CITIZEN SCIENCE

### Get Involved with Citizen Science

We are pleased to announce that the Citizen Science Competitive Funding Program is now accepting proposals! All U.S. Forest Service units and partners are invited to apply for up to \$25,000 per project. The request for proposal package can be found on the [CitSci Fund webpage](#).



## FOREST HEALTH

### Reconstructing Beetle Outbreaks and Tree Defenses

[Researchers found](#) that the Engelmann spruce's ability to produce traumatic resin ducts, a form of defense induced by environmental changes, could be the primary mechanism by which the spruces survived the spruce beetle outbreak over the past two decades. This discovery represents a new line of evidence based on tree-rings that can be used to reconstruct other spruce beetle outbreaks.





## WILDFIRE

### The Rise of Western Megafires

[In this TED Talk](#), Paul Hessburg of the Forest Service's Pacific Northwest Research Station uses compelling storytelling techniques and eye-catching graphics to explain the rise of megafires in the West and what can be done to mitigate risk.



### Did You Know?

Before science emerged as a profession, most scientific research was conducted by the citizen scientists who were keen amateurs. Early citizen scientists famously included Benjamin Franklin and Thomas Jefferson. Albert Einstein got the inspiration for his theory of relativity while riding a bus home from his job as a patent clerk, before he became a professional scientist.

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## Recent Blogs



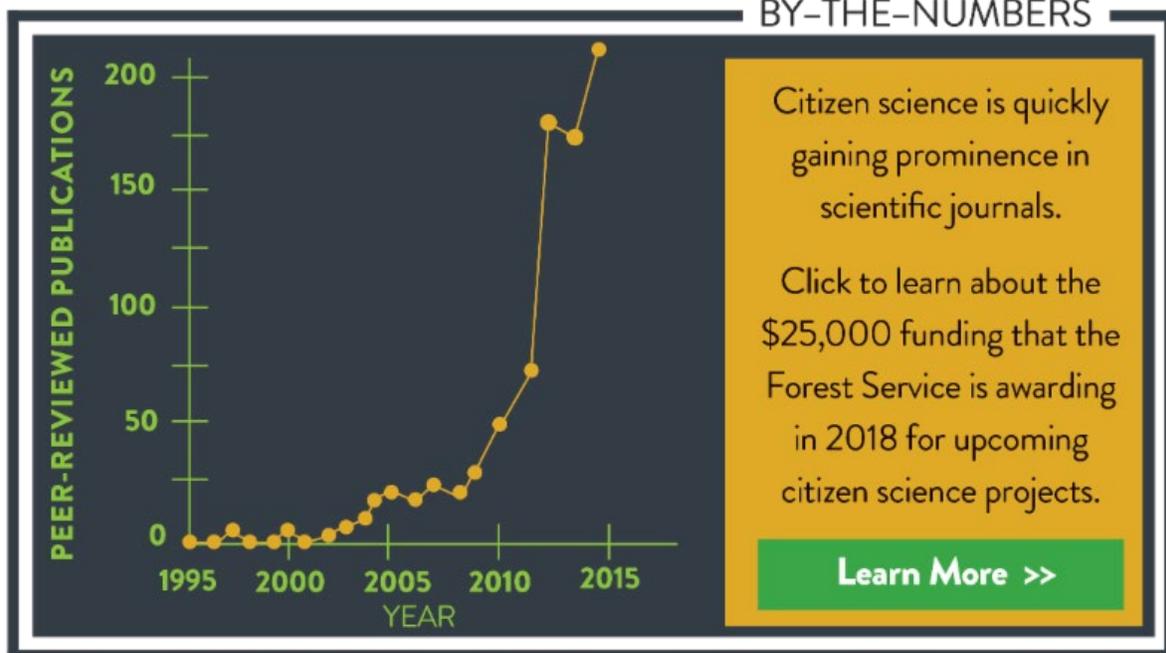
### [Heirs Property in the South](#)

Children often inherit their parents' homes and land. But what happens when there is no will or title?



### [Volunteers Count Every Street Tree in New York City](#)

To help enhance and restore urban forests, the New York City Department of Parks and Recreation created [TreesCount!](#), a massive effort to map every tree lining New York City streets.



For more information: [U.S. Forest Forest Service Citizen Science](#)

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