



# THE FOREST THREATNET

January/February 2014



Danny C. Lee, PhD  
Eastern Threat Center Director

## EASTERN THREAT CENTER CELEBRATES TEN YEARS

### Message from the Director

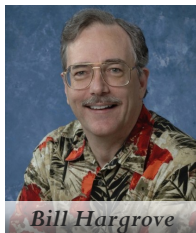
Welcome to the new year! There's something about beginning a new year that is always invigorating. For the Eastern Threat Center, 2014 marks the 10th year since our official inception. It's a good time to look back and assess our progress and achievements, and it's also a great time to look forward.

For me, the Center began in the summer of 2005, when I was selected as the inaugural Director (and sole employee at the time). But there had been significant effort expended before that in drafting a charter and laying the groundwork for a successful enterprise. The Center represented a new partnership among the deputy areas of the Forest Service and partnerships remain a hallmark of our efforts. So much so that every significant project that we do has one or more major partners outside the ranks of Forest Service Research and Development.

To all our partners and clients that bring so much value and meaning to our work, I heartily thank you and eagerly look forward to working together in the new year and the next decade. - *Danny C. Lee*

### Chief Honors Threat Centers

Forest Service Chief Tom Tidwell recently announced the 2013 Chief's Honor Awards recipients.



Bill Hargrove

The *ForWarn* team, including scientists and staff from the Eastern and Western Threat Centers and partnering organizations, received the Chief's

Award for Sustaining Forests and Grasslands. "*ForWarn's* success in monitoring and tracking forest disturbance and recovery, in addition to vegetation conditions across adjacent lands, holds great promise for keeping

our forests healthy into the future," says **William (Bill) Hargrove**, Eastern Threat Center research ecologist and lead *ForWarn* researcher.



Steve McNulty

Eastern Threat Center research ecologist **Steve McNulty** was recognized for his research of global climate-related societal impacts with the

Chief's Award for Excellence in Science and Technology. "I look forward to improving land management response to environmental stress through continued and expanded collaboration and partnerships," says McNulty.

The Chief's Honor Awards, which acknowledge outstanding achievements related to the Forest Service's strategic objectives, are among the highest honors in the agency. Chief Tidwell will present the awards during a ceremony on March 17 in Washington, DC.

### INSIDE THIS ISSUE

**Eastern Threat Center Highlights.** TACCIMO and South Carolina forest planning. Forest science demos. Supporting Korean forests. New FHM Management Team member. Center biometrician retires. Black History Month. Publications, products, and events.

**Western Threat Center Highlights.** Characterizing burn severity. Greater sage-grouse vulnerability assessment. Linking beetle attacks and fuels.



Eastern Threat Center's **Michael Gavazzi** assists a student during a tree coring activity (page 2).

## EASTERN THREAT CENTER HIGHLIGHTS

### TACCIMO Aids Forest Planning in South Carolina

The Francis Marion National Forest in coastal South Carolina faces a unique set of natural resource management challenges. And since the forest's land and resource management plan was last revised in 1996, new disturbances, including climate change impacts, have emerged as issues of concern. The [Template for Assessing Climate Change Impacts and Management Options \(TACCIMO\)](#) has been a useful tool for the forest's planning team who compiled a broad assessment of forest trends and conditions as part of a new management plan currently in development. The Eastern Threat Center's TACCIMO team assisted the forest planners with generating this information and provided user-friendly summaries for stakeholders and the forest's surrounding community. The draft assessment is [now available](#) for public review and comment. [Read more in CompassLive...](#)

### Students Experience Hands-on Forest Science

Center researchers in Raleigh, NC, recently engaged area students in forest science discussions and demonstrations. Biological scientists **Johnny Boggs** and **Michael Gavazzi** presented climate change research and related forest management issues to an environmental science class at Knightdale High School and assisted the students with tree measurements on campus. Boggs also led forest management students from Wayne Community College on a tour of a Best Management Practices (BMPs) research site where they gained understanding of how BMPs are properly implemented to protect water quality during forestry operations. Through these and a variety of activities and partnerships, the Eastern Threat Center supports the Forest Service's [conservation education](#) mission.



*Post-fire landscape, Deschutes National Forest, Oregon—Photo by USDA Forest Service*

## WESTERN THREAT CENTER RESEARCH HIGHLIGHTS

### Scientists Characterize Burn Severity to Aid Post-Fire Recovery

The most common approach to characterize burn severity across large landscapes is to use remotely sensed data, satellite imagery, or LiDAR technology (which uses lasers to measure distance in order to create high resolution maps), from before and after a fire burns. However, these methods can be limited in dense forest stands because of their inability to see the impact of fire on all levels of vegetation. The Western Threat Center supported post-fire LiDAR flights and field data collection to assess whether remotely sensed data accurately predicts burn severity in the Pole Creek Fire on the Deschutes National Forest. Understanding the accuracy of remotely sensed burn severity will aid in planning post-fire recovery efforts.

### How Vulnerable are Greater Sage-Grouse and Their Habitat?

Concern is growing for greater sage-grouse and their habitat. The Western Threat Center is providing support for an assessment of suitable sagebrush habitat, greater sage-grouse, and their stressors in areas of Nevada and Utah. Specific emphasis will be directed toward upland landscapes where key issues include habitat fragmentation, tree

encroachment, impacts of flammable weed expansion, changing fire regimes, and climate change. The assessment team is exploring variation in the spatial distribution of suitable habitat through time in order to provide context for interpreting current and anticipated future risks, and will organize managers' workshops to aid management and planning activities.

### Researchers Link Beetle Attacks and Fuel Changes

Dense forests and drier climate conditions have facilitated a widespread outbreak of the mountain pine beetle. Fire and fuel managers need up-to-date information regarding the location and nature of beetle attacks, which can substantially alter fuel conditions and increase risks to firefighters and communities in affected areas. The Western Threat Center is supporting development of a system to map the progression of beetle attacks over time using satellite imagery and field-measured fuel changes. As this work advances, it has potential to be integrated with current fire and fuel management and future planning and to be extended to other geographic regions.

More information: [www.fs.fed.us/wwetac](http://www.fs.fed.us/wwetac)

## KOREAN FORESTS GAIN GROUND WITH FOREST SERVICE SUPPORT

Korean forest scientists know all too well how degraded forests affect ecosystems and people. During the 20th century, unsustainable harvesting and conversion of forests to cropland caused “serious social and environmental problems like lack of fuel, severe flooding, and droughts,” according to the Korea Forest Service.

In the 1970s, the country began a widespread forest rehabilitation program, resulting in forest cover over about 64 percent of Korea’s land mass today. But the forests have lacked diversity in species and structure, making them especially vulnerable to a variety of stressors, including climate change, wildfire, insects, and diseases. A few years ago, Korea adopted methods from the [U.S. Forest Service Forest Health Monitoring \(FHM\) Program](#) to keep a watchful eye over forest growth and recovery. In 2011, the Korea Forest Service and Korea Forest Research Institute (KFRI) officially established the Korea Forest Health Monitoring program.

KFRI recently sponsored Eastern Threat Center research ecologist **Kurt Riitters** to attend the International Symposium on Forest Health in Seoul, Korea. The symposium, last held in 2007, convened international forest health monitoring professionals to share knowledge and experience to continue advancing Korea’s monitoring program. Riitters represented the United States with a presentation highlighting the U.S. FHM Program’s [annual national reports](#), which are produced by a diverse team of experts including researchers from the Eastern Threat Center and cooperating scientists from North Carolina State University. He also participated in field demonstrations of forest health measurements. “Personally, I gained an appreciation of the dedication of Korean scientists to forest inventory and forest health monitoring,” says Riitters.

[Read more in CompassLive...](#)



*Kurt Riitters (second from right) is pictured with other visiting scientists at the Korea Forest Research Institute.*

## EASTERN THREAT CENTER HIGHLIGHTS

### Center Expertise Helps Guide National Forest Health Monitoring

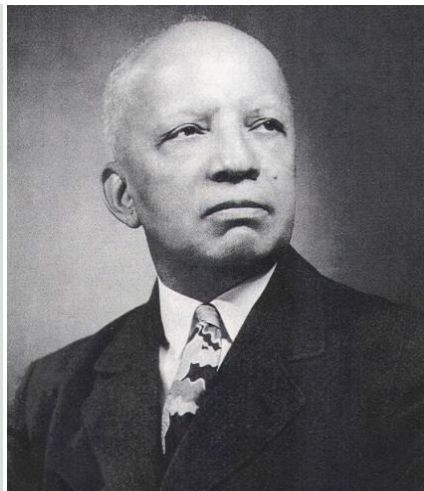
The [Forest Service Forest Health Monitoring \(FHM\) Program](#) relies on a [Management Team](#) to provide input regarding the direction and scope of FHM activities. In a new appointment, Eastern Threat Center research ecologist **Frank Koch** represents Forest Service Research and Development on the team whose primary role is to advise the FHM National Program Manager. The team also assists in making decisions about the FHM Program’s engagement in topics discussed at the biennial FHM Workgroup Meeting. (The next meeting, in March, will focus on urban forest health; forest decline; and restoration strategies, techniques, alternatives, and resources.) Research ecologist **Kurt Riitters** served on the Management Team prior to Koch’s appointment.

### Center Researcher Retires

**Bill Smith**, Eastern Threat Center biometrician, retired December 31, 2013. Bill began working with the Forest Service in 1994, and contributed significantly to the Forest Health Monitoring Program through statistical support, risk mapping, and collaborations with federal, state, and university scientists. He also taught undergraduate and graduate students as a faculty member in North Carolina State University’s Department of Forestry and Environmental Resources. Thank you for your service, Bill, and congratulations!

### Celebrating Black History Month

February is Black History Month, and this year marks the 50<sup>th</sup> anniversary of the 1964 Civil Rights Act. The national theme, “Civil Rights in America,” commemorates and celebrates contributions made by people of African descent. The theme also highlights people, places and important occasions significant in the struggle for civil rights in America. Black History Month evolved from the first Black History Week in 1926, established by American historian Dr. Carter G. Woodson, who was one of the first African Americans to receive a doctorate degree from Harvard University.



*Dr. Carter G. Woodson  
Photo courtesy of Blackpast.org*

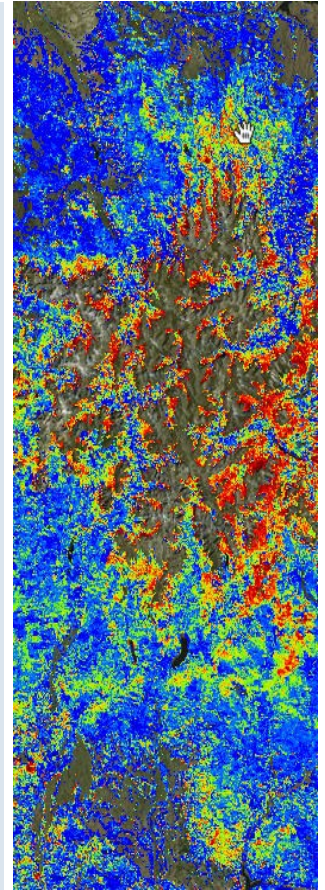
*Center News, Publications, Products, and Events*

- **Lisa Jennings**, North Carolina State University (NCSU) cooperator and TACCIMO climate change outreach specialist, has joined the National Forests in North Carolina's Grandfather Ranger District as a natural resources specialist. Congratulations, Lisa!
- NCSU cooperators **Jonah Freedman** and **Sarah Wiener** have joined the Eastern Threat Center as TACCIMO content developers. Welcome, Jonah and Sarah!
- February's [First Friday All Climate Change Talks](#) will feature Northern Research Station's Richard Birdsey discussing "Research Support for National Forest System Carbon Assessments."
- Center scientists and staff advanced forest science to support sustainable management through a [variety of research, science delivery, and partnership activities](#) in 2013.
- Center scientists create [posters](#) that help communicate research and engage audiences in conversation, especially at meetings, conferences, and other events.
- View [highlights](#) of forest disturbance monitoring using the *ForWarn* tool.
- [New Publications and Products](#) (search [Treesearch](#) for all pubs and abstracts):

**Riitters, K., K. Potter**, and B. Tkacz. 2013. Forest health monitoring in the United States: focus on national reports. In: Proceedings of International Symposium on Forest Health. Seoul, Korea: Korea Forest Research Institute pp. 12-27.

Xie, J., J. Chen, **G. Sun**, H. Chu, **A. Noormets**, Z. Ouyang, R. John, S. Wan, and W. Guan. 2014. Long-term variability and environmental control of the carbon cycle in an oak-dominated temperate forest. *Forest Ecology and Management* 313: 319-328.

Ren, H., **Q. Guo**, H. Liu, J. Li, Q. Zhang, H. Xu and F. Xu. 2014. Patterns of alien plant invasion across coastal bay areas in southern China. *Journal of Coastal Research*. In press.



**ForWarn**

Researchers are tracking the interactive effects of drought, spruce beetles, and fire in Colorado. Learn more at [www.forwarn.forestthreats.org](http://www.forwarn.forestthreats.org).

## CONTACT US

### USDA Forest Service Research and Development • Eastern Forest Environmental Threat Assessment Center

The interdisciplinary Eastern Threat Center develops new technology and tools to anticipate and respond to emerging forest threats. The Eastern and Western Threat Centers are a joint effort of the USDA Forest Service Research and Development, National Forest System, and State and Private Forestry. The Eastern Threat Center is headquartered with the Southern Research Station in Asheville and has offices in Raleigh and Research Triangle Park, NC.

**Eastern Threat Center**  
**Danny C. Lee, PhD, Director**  
 Asheville, NC  
 Southern Research Station  
 200 W.T. Weaver Blvd.  
 Asheville, NC 28804  
 (828) 257-4298

**Research Triangle Park, NC**  
 Forestry Sciences Laboratory  
 3041 E. Cornwallis Road  
 Research Triangle Park, NC 27709  
 (919) 549-4000

**Raleigh, NC**  
 North Carolina State University  
 Centennial Campus  
 920 Main Campus Drive  
 Venture Center II, Ste. 300  
 Raleigh, NC 27606  
 (919) 515-9489

**Western Threat Center**  
**Nancy E. Grulke, PhD, Director**  
 Prineville, OR  
 3160 NE Third St.  
 Prineville, OR 97757  
 (541) 416-6693

For additional information, contact the Eastern Threat Center communications team: **Perdita Spriggs** ([pspriggs@fs.fed.us](mailto:pspriggs@fs.fed.us)) or **Stephanie Worley Firley** ([sworleyfirley@fs.fed.us](mailto:sworleyfirley@fs.fed.us)). USDA is an equal opportunity employer and provider.