

# THE FOREST THREATNET



August/September 2013

Eastern Threat Center researchers support national interagency strategies for wildfire management (page 2).  
Photo courtesy of Lisa Gump, InciWeb.



Danny C. Lee, PhD  
Eastern Threat Center Director

## FORWARN FOLLOWS NATIONAL FOREST DISTURBANCES

### How Green is a Healthy Forest?

As new spring leaves emerged and a wave of green moved up through the United States, the 2013 growing season began—and U.S. Forest Service researchers were watching. In forests, greenness levels change with natural rhythms called phenology, including seasonal changes, growth and mortality, year-to-year climate variation, and effects of disturbance. All of these indicators are important to forest health. To help managers of federal, state, and private lands monitor this greenness, Eastern Threat Center scientists, working with federal and university partners,

developed the [ForWarn](#) forest monitoring system. Several new *ForWarn* features were added for the 2013 growing season to aid researchers and managers.

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

### Researchers Get EVEREST-Sized Look at Woodland Disturbances

An exploratory visualization facility at [Oak Ridge National Laboratory](#) (ORNL) provided Eastern Threat Center *ForWarn* researchers with a unique view of maps used to detect and track unexpected forest change and disturbance. Researchers met with ORNL Climate Change Science Institute scientists and viewed recent *ForWarn* maps at an immersive facility called

[EVEREST](#), or Exploratory Visualization Environment for Research in Science and Technology – creating depth in detailed images and a high resolution 3D effect. Center researchers were visiting ORNL to analyze “big data” from several forest disturbances. They also viewed effects of past western wildfires and took a closer look at the massive Rim Fire burning in California near Yosemite National Park – courtesy of the *ForWarn* “Early Detect” map.

New [ForWarn](#) publication – hot off the press!

### INSIDE THIS ISSUE

Eastern Threat Center Highlights. *ForWarn*. TACCIMO. Project CAPTURE. USDA Climate Change Hubs. National Cohesive Wildland Fire Management Strategy. Climate Change Resource Center. International Water Conference. Publications, Products, and Events.

Celebrate [Hispanic Heritage Month](#): September 15 – October 15, 2013



## EASTERN THREAT CENTER HIGHLIGHTS

### Project CAPTURE Targets Risky Forest Threats

Several threats will increase the risk that forest trees could experience population or species-level extinction. However, differences in species traits could drive varying responses to these threats. **Kevin Potter**, cooperating Eastern Threat Center researcher with North Carolina State University, is leading the three-year Project CAPTURE (Conservation Assessment and Prioritization of Forest Trees Under Risk of Extirpation) to determine which forest tree species to target for monitoring, management, and conservation. These activities will be critical for the Forest Service and other state and federal agencies.

### USDA Climate Change Hubs Promote Federal Partnerships

USDA is creating [regional hubs](#) for risk adaptation and mitigation to climate change. The regional hubs will deliver science-based knowledge and practical information to farmers, ranchers, and forest landowners to support climate change-related decision making. The seven hubs will be a collaborative effort among the Forest Service, Natural Resources Conservation Service, and Agricultural Research Service and focus on technical support, assessments and regional forecasts, and outreach and education.

### Special Journal Issue Features International Research

**Ge Sun**, Eastern Threat Center research hydrologist, and **Catalina Segura**, North Carolina State University cooperating scientist, served as guest editors for a special issue of the *British Journal of Environment and Climate Change*. The special issue, themed "Interactions of Forests, Climate, Water Resources, and Humans in a Changing Environment," features Sun and Segura's guest editorial outlining research needs as well as research results from around the world. [Read the special issue...](#)



*A raging wildfire threatens a home on the wildland urban interface. Photo courtesy of Jayson Coil, USDA Forest Service Fire & Aviation Management.*

## CENTER SUPPORTS NATIONAL WILDFIRE PLANNING STRATEGIES

### Interagency Partnership Enhances Wildfire Management

Representatives from federal and state agencies, tribes, non-governmental organizations, and the general public have collaborated for the past few years with a common goal: to develop a plan to "safely and effectively extinguish fire, when needed; use fire where allowable; manage natural resources; and as a Nation, live with wildland fire."

Now, efforts to develop the *National Cohesive Wildland Fire Management Strategy* are nearing completion. As part of the Cohesive Strategy's final phase, Eastern Threat Center Director **Danny Lee**, research ecologist **Steve Norman**, biological scientist **Bill Christie**, and partners from the University of North Carolina Asheville's National Environmental Modeling and Analysis Center (NEMAC) are compiling a report describing potential policy options that can influence human and ecological losses resulting from wildland fire. Lee, Norman, Christie, and NEMAC partners serve on a science and

analysis team which has closely examined risks and trade-offs associated with various wildland fire management alternatives. Learn more on the [National Cohesive Wildland Fire Management Strategy website](#).

### Climate Change Resource Center Explores Wildfire Connection

Recent fire seasons have raised important questions about the interactions between climate change, wildfire, and other forest stressors. The Forest Service [Climate Change Resource Center](#) is helping users explore these relationships. Resources include the [Wildland Fire and Climate Change](#) topic page, which introduces the connection and offers recommended reading and links to browse. Users can also explore how changing climates, invasive plants, and wildfire might interact to influence wildlife habitats in a [video](#) on fish, and in a newly published [topic page](#) on birds.

## TACCIMO BENEFITS NATIONAL FOREST PLAN REVISIONS

Some National Forest planners are already assessing and revising forest plans under the Forest Service's new [Planning Rule](#). On behalf of these "early adopter" forests, planning teams faced with the challenge of integrating climate change considerations into a vision of collaboration and sustainability are finding assistance with the [Template for Assessing Climate Change Impacts and Management Options](#) (TACCIMO).

Eastern Threat Center researchers collaboratively developed TACCIMO to merge planning and climate change science through in-depth literature

reviews, maps, and climate projections that aid in decision-making. To support forest plan revision processes, TACCIMO's climate change outreach specialists are developing custom fact sheets (see page 4) and sharing key findings of potential climate change impacts on southern National Forests with stakeholders during public forums. TACCIMO's communication tools are promoting climate change understanding, collaborative and comprehensive forest plan revisions, and transparency and public involvement.



*Eastern Threat Center TACCIMO researchers (l to r) Jennifer Moore Myers, Rob Herring, Steve McNulty, Lisa Jennings, and Emrys Treasure.*

### EASTERN THREAT CENTER HIGHLIGHTS

#### Eastern Threat Center Researcher Co-Chairs International Water Conference

Eastern Threat Center research hydrologist **Ge Sun** is lending his expertise to help decision makers ensure sustainable water supplies for people, as well as ecosystems and economic development, across the world's largest metropolitan areas. He is serving as a co-chair for an international conference, "[Water for Mega Cities: Challenges and Solutions](#)," devoted to the exploration of water issues in mega cities (generally, those with populations of at least 10 million people). [Read more in CompassLive...](#)

#### Summer Interns Learn While Advancing Center Research

Student interns, working through university partnerships and programs, assist Eastern Threat Center staff with multi-disciplinary projects during the summer and throughout the year. This summer's interns represented several diverse schools and the Hispanic Association of Colleges and Universities (HACU), and assisted with key Center research and science delivery efforts:

- Jackson Mathis* attends NC State University and assisted with TACCIMO
- Carolina Osuna* is a Rice University (TX) HACU student and supported TACCIMO
- Ian Thompson* attends NC State University and collected field data.
- John Few* attends Virginia State University and assisted with PINEMAP.

*Read about these and additional interns' experiences on the Eastern Threat Center [website](#).*



#### Klepzig New SFIWC Chair

Kier Klepzig (left), [Southern Research Station](#) Assistant Director for Research, has been selected incoming chair for the [Southern Forest Insect Work Conference](#) (SFIWC). In this role, he will preside over the 2014 and 2015 SFIWC meetings and help organize the 2016 North American Forest Insect Work Conference.

#### SRS Director Highlights Traditional Knowledge

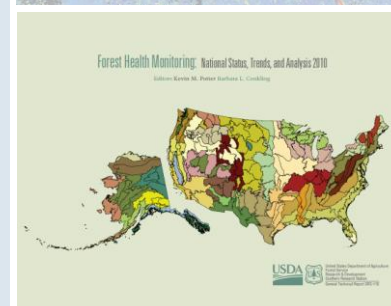
Southern Research Station Director Rob Doudrick presented "[Listening to the Land and Honoring Traditional Knowledge](#)" during a NC Museum of Natural Sciences' science café. He highlighted respecting Native American traditional forest knowledge, comparing and contrasting it with modern science, and using it as a foundation for long-term forest management. The café supported the Station's museum partnership to share forest science with diverse audiences.



*Rob Doudrick, SRS director, shared Native American traditional forest knowledge information with Meg Lowman, [NC Museum of Natural Sciences](#)' senior scientist and director of academic partnerships and global initiatives.*

## Center News, Publications, Products, and Events

- Congratulations to Center research hydrologist **Pete Caldwell** who joined the Coweeta Hydrologic Laboratory in Otto, NC, and to North Carolina State University cooperating scientist **Catalina Segura** who accepted an assistant forest hydrology professor position at Oregon State University in Corvallis, OR.
- The October [First Friday All Climate Change Talks](#) will feature Northern Research Station's Richard Birdsey discussing "Research Support for National Forest System Carbon Assessments."
- Center and Southern Research Station staff will share Forest Service information during the North Carolina Museum of Natural Sciences' annual [Bugfest](#), the largest insect-related festival in the nation, attracting more than 35,000 multicultural individuals and families.
- [New Publications and Products](#) (search [Treearch](#) for all pubs and abstracts):
  - **Norman, S.P., W.W. Hargrove, J.P. Spruce, W.M. Christie, and S.W. Schroeder.** 2013. Highlights of satellite-based forest change recognition and tracking using the ForWarn System. Gen. Tech. Rep. SRS-180. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 30p.
  - Liu, N., H. Ren, S. Yuan, **Q.F. Guo**, and L. Yang. 2013. Testing the stress-gradient hypothesis during the restoration of tropical degraded land using the shrub *Rhodomyrtus tomentosa* as a nurse plant. *Restoration Ecology* 21(5):578-584.
  - Yemshanov, D., **F.H. Koch**, M.J. Ducey, M. Siltanen, K. Wilson, and K. Koehler. 2013. Exploring critical uncertainties in pathway assessment of human-assisted introductions of alien forest species in Canada. *Journal of Environmental Management* 129:173-182.
  - TACCIMO climate change specialists developed fact sheets for three Southern Region national forests: [El Yunque](#) (PR), [Nantahala and Pisgah](#) (NC), and [Francis Marion](#) (SC).
  - [Annual Forest Health Monitoring National Reports](#) summarize the status, trends, and analyses of the nation's forest resources – the 2010 report is published and 2011 and 2012 are available [online](#).



## CONTACT US

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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 headquartered with the Southern Research Station in Asheville and has offices in Raleigh and Research Triangle Park, NC.

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