

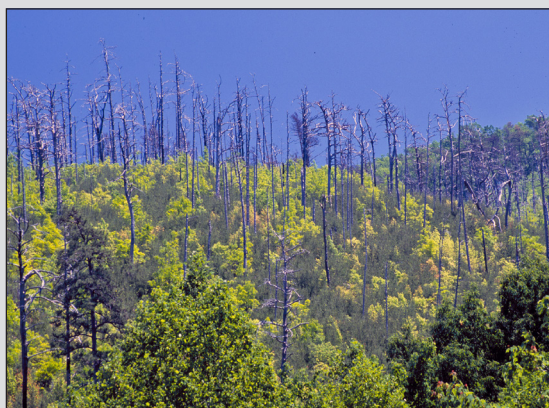
Forest Threat Facts

ForWarn

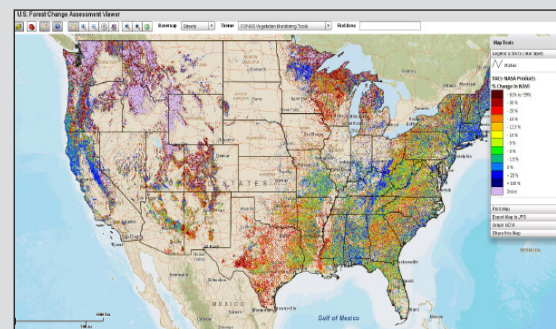
ForWarn: Helping natural resource managers monitor forest disturbance

Forests are constantly changing due to natural seasonal rhythms, growth and mortality, year-to-year climate variation, and effects of disturbance. But forest land can be vast and is often remote, which can make tracking forest conditions a challenging task.

To address this challenge, scientists from the USDA Forest Service **Eastern Forest** and **Western Wildland Environmental Threat Assessment Centers**, along with federal and university partners, have developed **ForWarn** to provide weekly maps of leaf greenness levels that reveal the status and timing of seasonal forest development. With a personal computer and standard internet browser, natural resource managers can access **ForWarn** to begin monitoring forest health and potential disturbance in near real time across the continental United States.



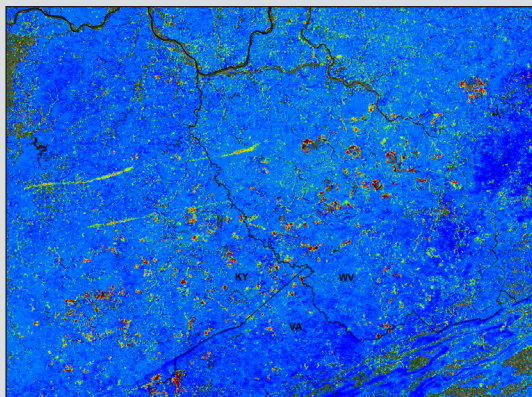
*New trees grow among trees previously killed by wildfire. Natural resource managers can use **ForWarn** to monitor forest disturbance and recovery.*



ForWarn's Forest Change Assessment Viewer provides a weekly coast-to-coast snapshot to show the status and timing of seasonal forest development and highlight potential disturbance.

ForWarn provides web-based tools for monitoring and assessing potential forest disturbances.

Natural resource managers can use **ForWarn** to recognize and track patterns of forest distress due to insects, diseases, wildfires, extreme weather, or other natural or human-caused events. **ForWarn** uses NASA satellite imagery which is processed and delivered to users through the Forest Change Assessment Viewer. The Assessment Viewer provides forest leaf greenness maps—coast-to-coast snapshots of the US landscape—that are updated every eight days. Natural resource managers can use the maps to view the status and timing of seasonal forest development compared to the previous year, the last three years, and the past decade to detect sudden disturbance events as well as more slow-acting disturbances or forest recovery. **ForWarn** users can explore, save, and share recent and archived forest change maps to support collaborative projects and analyses.



Natural resource managers can use **ForWarn** to monitor forest disturbance due to natural or human-caused events. Red patches on a 2012 **ForWarn** map show forest loss from strip mines in eastern Kentucky and West Virginia. Red and yellow streaks show the tracks of spring tornadoes.

ForWarn complements and focuses efforts of existing forest monitoring programs.

ForWarn is the research and assessment component of a broader Forest Service cooperative forest management initiative known as the National Early Warning System, which was developed in response to the Healthy Forests Restoration Act of 2003. The National Early Warning System network brings together various organizations involved in mapping disturbances, evaluating climate stress, conducting aerial and ground monitoring, and initiating predictive efforts to achieve more efficient forest planning and management across jurisdictions.

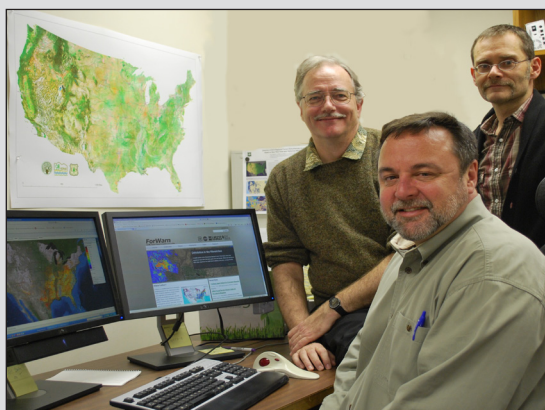
ForWarn is intended to support aerial and on-the-ground natural resource managers by directing attention and resources to areas of potential forest disturbance.

ForWarn provides a strategic national overview of forest health to complement and focus the efforts of existing forest monitoring programs, which can result in time and cost savings.

ForWarn training and assistance are available.

The comprehensive **ForWarn** website provides background information that leads users through the science of detection and assessment processes and includes examples of forest disturbances that Eastern and Western Threat Center scientists have monitored using **ForWarn**. The website also provides user guides, training videos, and other supporting resources.

Threat Center scientists, staff, and partners have received regional and national recognition for collaboration and technology transfer. To request an online demonstration session, please contact William Hargrove (Eastern Threat Center research ecologist) at whargrove@fs.fed.us or (828) 257-4846 or William Christie (Eastern Threat Center biological scientist) at wchristie@fs.fed.us or (828) 257-4370.



Threat Center scientists are available to assist **ForWarn** users with training and support.

For more information:

Visit <http://forwarn.forestthreats.org> to learn more and begin exploring **ForWarn**.



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All photos by USDA Forest Service.



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