

LANDSCAPE-SCALE EVALUATION OF FOREST HEALTH AND RESPONSE TO DISTURBANCE

A McIntire-Stennis supported project
Emerging Project



Forestry and Natural Resources
College of Agriculture, Food and Environment

Appalachian forests provide a wide range of economic and ecosystem services to the people of Kentucky, ranging from wood products to carbon sequestration, biodiversity, and water quality. However, with changing land use and climate the forests face an intensified disturbance regime, which may cause deterioration of forest health resulting in a host of ecological ramifications. This new McIntire-Stennis supported research at the University of Kentucky Department of Forestry and Natural Resources has focused on quantifying the spatial patterns of forest disturbance and its impacts to forest landscape structure and ecological integrity in Appalachian forest of eastern Kentucky and beyond.

This emerging research project uses satellite imagery and other remote sensing data to determine the extent of forest disturbance and characterize several critical measures of forest health. Models are being developed to correlate satellite and terrestrial data to use in defining changes to our forests due to human activity such as surface mining and timber harvesting as well as wildfires and natural disturbances such as storms and droughts.

COLLABORATION



Researchers from the University of Kentucky are working in partnership with the USDA Forest Service Southern Experiment Station, Daniel Boone National Forest, Kentucky Department of Fish and Wildlife, Kentucky Geological Survey, and Chinese Academy of Sciences.

IMPACT

This emerging research is aimed at producing and developing technologically advance tools that can be used to efficiently track forest disturbances, both human-caused and natural, and determine changes that these disturbances have on forests.



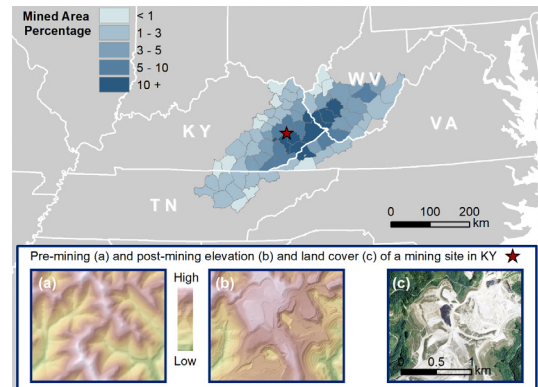
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post-doctorate scholars and students engaged in the project.



Recognition

of this work as featured cover article in the internationally prestigious *Frontiers in Ecology and the Environment*.



Central Appalachian counties with percentage area mined and contrasting topographies

About McIntire-Stennis

The McIntire-Stennis program, a unique federal-state partnership, cultivates and delivers forestry and natural resource innovations for a better future. By advancing research and education that increases the understanding of emerging challenges and fosters the development of relevant solutions, the McIntire-Stennis program has ensured healthy resilient forests and communities and an exceptional natural resources workforce since 1962.

