24. Building Partnerships to Manage Forest Threats

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A key aspect of the PINEMAP project is building relationships and leveraging strengths. PINEMAP was designed to bring together research, education, and outreach to develop and disseminate the information necessary to increase forest resilience and sustainability under variable climates. One aspect of the PINEMAP Extension team's efforts is to produce educational publications to create new awareness of forest threats from climate change. It was natural that the Extension team saw unique value in the work of the U.S. Forest Service's Eastern Forest Environmental Threats Center (EFETAC). PINEMAP is partnering with the center to rewrite the EFETAC state-oriented factsheet, which succinctly reviews forest threats and associated management solutions for North Carolina, to apply to the region covered by PINEMAP.

The foundation of our collaboration with EFETAC is the Template for Assessing Climate Change Impacts and Management Options (TACCIMO). TACCIMO is a web information interface and database that facilitates the integration of climate change science and natural resources peer-reviewed science. TACCIMO provides a user-friendly literature search of thousands of papers on climate projections and resource planning and management options. TACCIMO was initially developed for national forest planners, but it is now available for public consumption. With an eye toward expanding the reach of TACCIMO, our EFETAC partners jumped at the chance to share their product with a growing PINEMAP audience.

After several conference calls and in-person meetings, a plan was created to develop a southern region forest threats fact sheet *(Southern Region: Forest Threats and Management Options for Healthy Forests)*. The new product is crafted with a focus on PINEMAP priorities and adaptation to current and emergent forest threats. Increased risks from insects, diseases, drought, and invasive species form the backbone of the fact sheet within a focus on *actions* that foresters and landowners can implement to reduce risk.

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TACCIMO staff originally developed a general fact sheet on forest threats for the North Carolina region, and then in collaboration with PINEMAP Extension staff, created the second fact sheet for the southern region. Although the southern region encompasses numerous forest types, the new fact sheet captures the primary forest types and threats. This fact sheet has been peer-reviewed and will soon be available for distribution.

We have already begun to create additional publications that explore individual forest threats (e.g., insects, fire, and invasive species) as well as suggested management techniques to adapt to or mitigate these threats. The PINEMAP Extension team is in the process of creating connections with other support organizations and ultimately to provide information to foresters, forest landowners, and others associated with forest management so that they can implement "climate-smart" land management and, in the process, increase forest resilience under climate variability.

PINEMAP integrates research, extension, and education to enable southern pine landowners to manage forests to increase carbon sequestration; increase efficiency of nitrogen and other fertilizer inputs; and adapt forest management approaches to increase forest resilience and sustainability under variable climates.

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