



Nonnative Invasive Species (NNIS) Impact Our Forests

Recently (July 2009) the Redbay Ambrosia Beetle was identified as being established in Jackson County, MS. This was the first time this species has been found in Mississippi.



Figure 1: Redbay Ambrosia Beetle. Photo from Bugwood Network.

Unfortunately, this insect species carries with it a fungus that causes mortality to redbay (*Persea borbonia*) and other tree species in the Laurel family (Lauraceae). The disease is known as Laurel Wilt.

Other susceptible hosts of the Redbay Ambrosia beetle include sassafras, camphor, and the endangered species pondberry and pondspice. Hence the potential for

spread statewide is possible. Firewood has been identified as a key component in the spread of the emerald ash borer and is suspected aiding in the distribution of the Redbay Ambrosia beetle. A campaign has been initiated by the Mississippi Forestry Commission to stop the movement of firewood to reduce the potential spread of these invasive species. It is important to note that the pathway of introduction of the Redbay Ambrosia beetle into Mississippi has not been determined.

In an article, "Impacts of Nonnative Invasive Species on US Forests and Recommendations for Policy and Management" by W. Keith Moser, et al., Journal of Forestry, September 2009, issues related to the introduction of nonnative invasive species (NNIS) in the United States was reviewed. They point out that NNIS into the US has had tremendous impacts on the nation's commercial and urban forest resources. Of principal concern are the effects of NNIS on forest composition, structure, function, productivity, and patterns of carbon sequestration.



Figure 2: Don't Bring Firewood with You magnet from the Mississippi Forestry Commission.

They also point out that the frequency of introductions of NNIS into the US has grown at an alarming rate because of foreign travel, international trade, and human population development patterns. NNIS pose a serious risk to North American forest ecosystems, threatening to change existing ecological trajectories, suppress rare and endangered native species, reduce productivity and biodiversity and damage wildlife habitat. Hence, effective and feasible management strategies that include monitoring and control of invasive species are needed to maintain sustainable forests.

Examples of NNIS that have caused changes in trees species composition and stand structure in North

American forests include the following. Nonnative invasive tree diseases such as Chestnut Blight, White Pine Blister Rust, Dutch Elm disease and Sudden Oak Death are but a few examples but dramatic examples of the impact of NNIS to the extent that Chestnut and Elm trees have been basically wiped out. Currently nonnative invasive insects currently causing major changes in North American forest ecosystems are the Asian Longhorned beetle, Emerald Ash Borer, Hemlock Woolly Adelgid and Redbay Ambrosia beetle.



Figure 3: Emerald Ash Borer. Photo from Bugwood Network.

The latter two are causing mortality to hemlocks and laurels in the southeastern US at alarming rates. Nonnative invasive plants are also of concern including the Tree-of-Heaven, Common Buckthorn, Garlic Mustard, Kudzu and Cogongrass to mention a few. The Mississippi Forestry Commission has just received funding to aggressively

attack the Cogongrass problem in Mississippi.

In the article mentioned above they made the following recommendations: 1) promote education with respect to the issue; 2) expand early detection and active management efforts and intensify enforcement of quarantines; 3) build the capacity to increase understanding of and treatments of NNIS; 4) strengthen the basic forest health curriculum; and 5) encourage across-agency collaboration and support investment in agency

resources at all levels.

The Mississippi Forestry Commission is and has been actively involved in addressing these issues.

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