Technical Bulletin

Forest Health Notes #74

Non-Native Emerald Ash Borer Marches Closer To Mississippi

By Dr. John J. Riggins, Forest Entomologist.

On July 18th, 2014, Arkansas Agriculture Department/Arkansas State Plant Board officials confirmed that the emerald ash borer (EAB, Fig. 1), an invasive beetle that attacks and kills ash trees, has been found in Hot Springs, Clark, and Nevada counties. Previously, the closest EAB infested areas were in Tennessee, Georgia, and the boot heel region of Missouri. EAB now has Mississippi surrounded, and it is likely only a matter of time before it finds its way here.

EAB (*Agrilus planipennis) is a metallic wood-infesting beetle (Order Coleoptera, Family Buprestidae) native to* Eastern Russia, Northern China, Japan, and Korea. EAB was first detected in Michigan in 2002, but likely arrived and went unnoticed for at least ten years before being discovered. EAB was likely introduced via solid wood packing materials in cargo containers. Since arrival, it has spread to 24 U.S. states and 2 Canadian Provinces (Fig. 2).
The adult emerald ash borer is a metallic green insect about one-half inch long and one-eighth inch wide making it hard to detect in the wild. Female EAB lay eggs on the bark of ash trees. The eggs hatch and the larvae bore into the bark to the fluid-conducting vessels underneath. The larvae feed and develop, cutting off the flow of nutrients and, eventually killing the tree. EAB attacks and kills all species of North American true ash (genus *Fraxinus*), and tree death occurs three to five years following initial infestation.

Signs of EAB include: canopy dieback beginning at the top of the tree and progressing through the year until the tree is bare; sprouts growing from the roots and trunk; split bark with an S-shape gallery; D-shaped exit holes; and more woodpecker activity, creating large holes as they extract the larvae. Please see http://www.emeraldashborer.info/files/E-2938.pdf for photos of EAB adults, larvae, damage, signs and symptoms.

EAB poses a distinct threat to Mississippi Forests. Mississippi Forest Inventory (MIFI) estimates indicate that Mississippi contains approximately 192 million ash trees in forests around the State. This is approximately 4% of trees in the Mississippi River Delta, the region of the State with the most ash trees. Ash trees account for approximately 15 million tons of timber, or 20% of the harvest value in the Delta. Statewide, ash trees make up about 1% of our forest trees, or approximately 5% of the timber value. These estimates do not take into account the countless ash trees in urban areas throughout Mississippi.

After EAB is confirmed in a new area, it usually results in a federal quarantine being established. In this case, new quarantined areas in Arkansas could include all infested parts of Arkansas, and potentially the entire state. It is most likely that EAB was spread to Arkansas through the movement of firewood. Many wood-infesting pests like EAB and another recent non-native pest in Mississippi, the redbay ambrosia beetle, are moved around the Country in firewood. Each newly infested area costs taxpayers millions of dollars in lost

timber, mitigation, and quarantine costs. To prevent the spread of this and other non-native beetles, **do not move firewood**. Firewood is a vehicle for movement of tree-killing forest pests including EAB and Asian longhorned beetle. Use locally-sourced firewood when burning it at home. When travelling, burn firewood where you buy it. Make sure to burn all wood purchased.

For additional information contact:
Mississippi Forestry Commission Local Office or Dr. John J. Riggins @ silvicare.llc@gmail.com

Figure 1: Adult emerald ash borer (*Agrilus planipennis)*

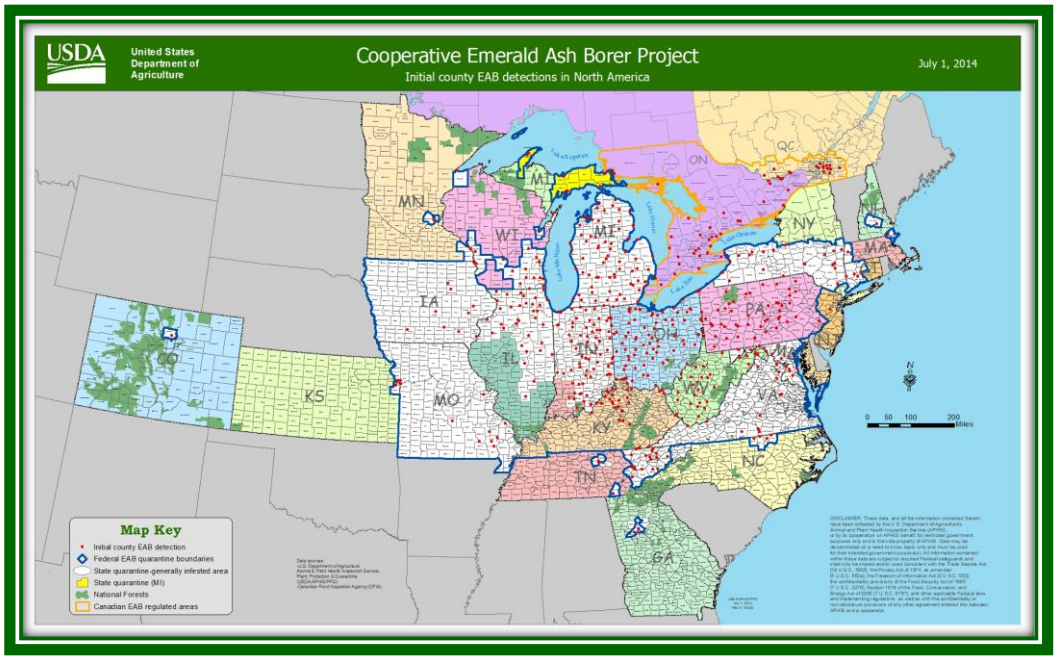

Figure 2: Emerald ash borer infestations and quarantines in North America as of July 1, 2014. Source: http://www.emeraldashborer.info/files/MultiState_EABpos.pdf