

CONTROL ACTIVITIES AND LONG-TERM MONITORING FOR THE WEST VIRGINIA EAB INFESTATION

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ABSTRACT

Project Background. An EAB population was discovered in late 2007 at a recreational area near Oak Hill in Fayette Co., West Virginia. A survey conducted within a half-mile radius of the original trap tree identified 312 ash trees (Fig. 1). Of these about half were observed with binoculars for signs of infestation; 21 trees were obviously infested (four heavily), 22 were possibly infested, and 110 showed no signs of infestation. A control and monitoring study was initiated in 2008 due to the following favorable factors: limited ash resource over a large area; isolated EAB population; EAB infestation was relatively light; infested ash trees were within a confined area. Ash trees were either cut down and disposed of (149 trees, mostly 3-inch d.b.h. or less) or treated with emamectin benzoate (Tree-äge, Arborjet, Inc.) as follows: 2-5 inches, 2.5 mL/d.b.h.-inch (34 trees, 0.1 g a.i.); 6-8 inches, 5 mL/d.b.h.-inch (45 trees, 0.2 g a.i.); 9+ inches, 10 mL/d.b.h.-inch (84 trees, 0.4 g a.i.). Treatment method used the Arborjet VIPER hydraulic device and a stainless steel tapered injection tip (no plugs, ~300 psi). Treatment times increased with increasing dosage, and overall averaged about 2 minutes per d.b.h.-inch.

Baseline monitoring. Foliar residue was monitored at 5 and 12 weeks post-treatment for about 20 percent of the trees, to encompass the range of size class and treatment rates applied. An ELISA analysis was used to determine emamectin content in leaf tissue, and this is being confirmed with an analytical method by the manufacturer (Syngenta). Sample trees were also assessed for D-shaped exit holes, woodpecker feeding, and canopy crown ratings. Binoculars were used to examine the main stem of the ash trees for emergence holes by standing in one place and slowly sweeping the view from a point 10 m above the ground down to the base of the tree. The orientation of the tree was noted in order to achieve consistency between

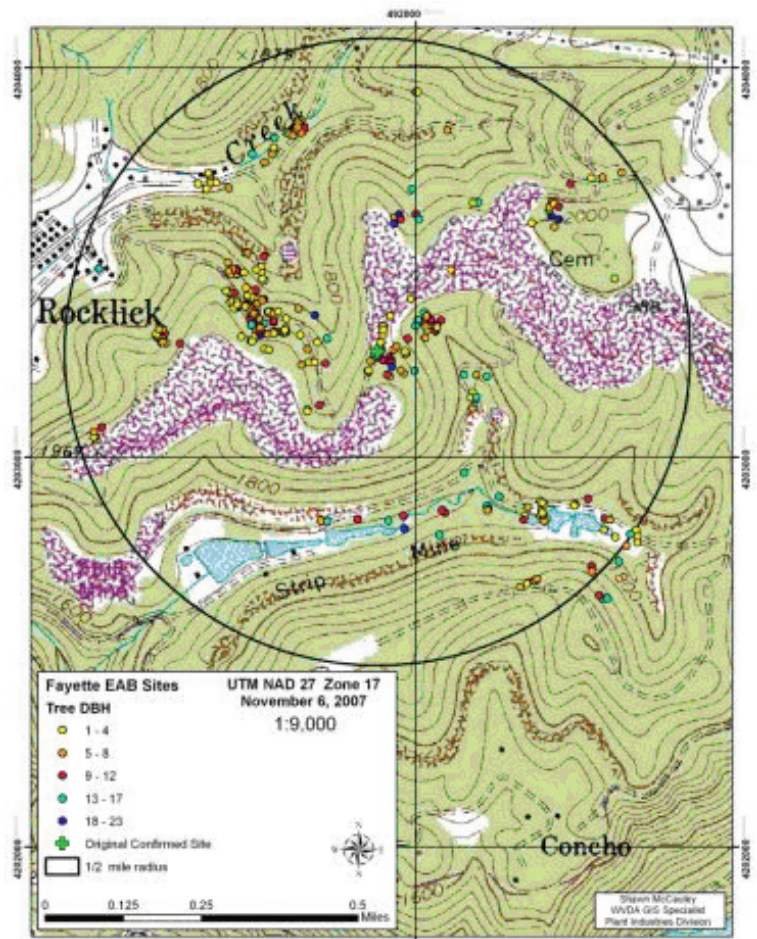


Figure 1.—Location of ash trees within the West Virginia EAB infestation.

observations over time. Emamectin residue was detected in significant quantities in all foliage samples for July and August, increasing by dosage applied. Residue levels did not change between months for the majority of samples (52 percent) and increased in 13 percent of them. Tree health data and presence of EAB exit holes in these study trees were collected in parallel with foliage collections. About 30 percent of the trees showed evidence of canopy dieback during the August observations, but this may be normal for ash trees growing in this area. There were very few woodpecker attacks on these trees, and only 6 of the 31 trees had two to seven putative EAB exit holes, evidence of a light infestation. Additional tree observations and foliage collections are planned for June and August of 2009 and 2010. Study trees will be felled

and examined for EAB infestation levels in the fall of 2010 for assessment of treatment impact.

Trapping. A trapping grid was set up to monitor the general EAB population in the area. All traps were EAB program panel traps, green in color and baited with Phoebe oil. The grid was 1 km, except for the core (blue ring), where it was ½ km. During the month of June, 95 traps were placed within the trapping grid and were checked once in July and again in August when traps were taken down. Only two adult beetles were captured on two of the 95 traps placed around the original infestation site (Fig. 2). The goal for 2009 is to increase the number of traps placed so that each 1 km quadrant has a trap and for additional traps to be placed near the two positive trap locations from 2008.

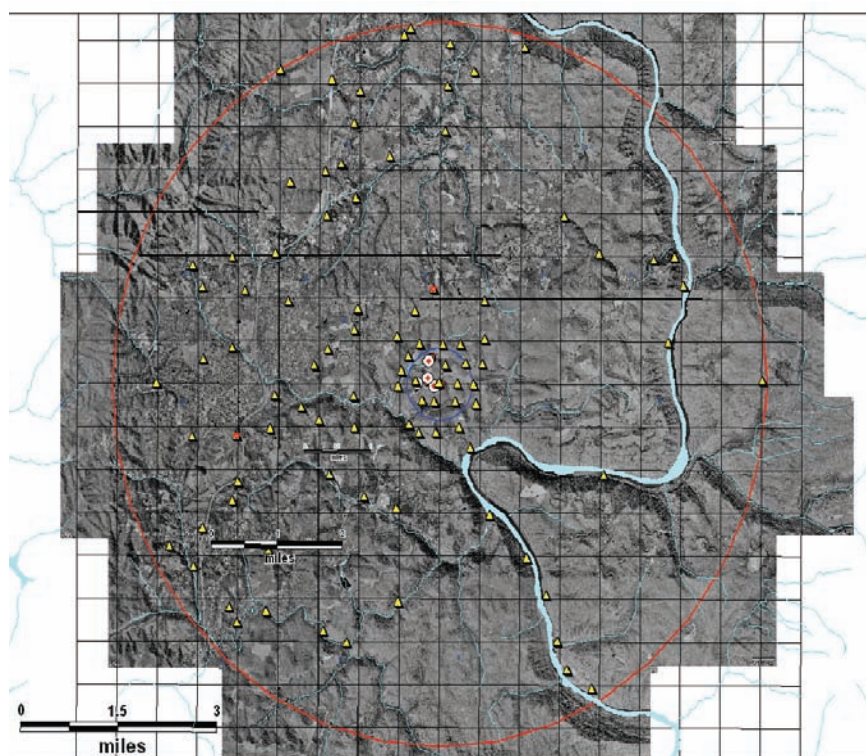


Figure 2—Trapping locations in West Virginia. White circles with a red bulls-eye, heavy infestation sites, red circles, positive traps.