

Annual Accomplishment Report
Maryland Emerald Ash Borer Eradication Project
08-8224-0408-CA

Year: 2008

State: Maryland

Agency: Maryland Department of Agriculture

Introduction and Overview:

The emerald ash borer, (*Agrilus planipennis*) (EAB), is an exotic, devastating insect pest that is responsible for the deaths of more than 25 million ash trees in the Midwestern United States. Trees infested with EAB larvae were illegally shipped from within a quarantined area in Michigan to a Prince George's County, Maryland, nursery in April of 2003. Maryland completed the removal of all ash within a ½ mile buffer of the nursery by March 2004. Sentinel trees have been used each year to monitor for the presence of EAB that may have escaped eradication efforts. In August, 2006, MDA rediscovered EAB on sentinel trees planted as part of the ongoing surveillance for emerald ash borer in the 2003/2004 eradication zone (EZ). State and federal quarantine orders were issued for all of Prince George's County in 2006 and revised in 2007.

Using GIS, a 2.5 acre grid (330'x330'; 1/16 mile) was overlaid out 5 miles over the project area as a base unit for inventory and surveillance following the 2006 detection. The overall eradication strategy in Prince George's County, developed with guidance from the National EAB Science panel, is to 1) count, mark, and remove all ash trees within an EZ of ½ - mile per year of estimated age of infestation around the farthest known infested trees, prior to EAB Spring emergence, 2) take cut trees to the marshalling yard, established in 2006 at the State warehouse in Cheltenham MD, to be ground to 1" or less in two dimensions, and 3) conduct delimiting survey in a ½ - mile buffer around the EZ, sampling 10% of all ash in each grid.

Objectives of this agreement included continued execution of inventory and delimiting surveys, education and outreach, and eradication and containment of EAB in Maryland. During this reporting period, **survey**, **eradication**, **regulatory** and **outreach** activities were ongoing and continuous, and in many cases overlapped. Each category is detailed in this report. In August, 2008 emerald ash borer was discovered about 180 feet over the county line in Charles County. The state quarantine was revised in August to encompass Charles County. It is worth noting that the project area is still contained within five miles of the original infested nursery.

Survey:

Ash inventory was conducted using teams with GPS units to identify all the ash in each grid, mark each tree and record the sizes using 5 size classes (<1", 1-10", 11-17", 18-23", and 24" and larger). The GPS units (Trimble Geo XM, Magellan (Thales) Mobile Mapper CE, and Topcon GMS-2) are able to display the grid layer and are used to define the edges and middle of the grid and to record the collected data. Paper data sheets were also filled out for each grid. After the grids were inventoried, 10% of the trees found in each grid were to be destructively sampled (minimum of 2 trees/grid, any material ≥ 1 ").

The MDA hosted and participated in a training session for locating and utilizing colonies of a native, solitary, ground-nesting wasp *Cerceris fumipennis* (Say), to search for the emerald ash borer. *C. fumipennis*, includes the EAB as prey when provisioning its nests. By observing what the wasps bring back to their nests, we may be able to detect EAB earlier than by using current survey methods.

At the beginning of this reporting period, the EZ was 16,073 acres. After two purple prism traps were found to be positive outside of the infested core area (June 25 and July 24, 2008), MDA crews surveying in a ½ mile radius of the June 25 prism trap catch found infested trees nearby. Following this discovery, the MDA conducted a streamside survey in August and September in order to best determine the extent of the infestation and to plan the appropriate response. MDA crews identified EAB infested ash trees a little over two miles south of the eradication zone in Charles County. The eradication zone was expanded to include three new areas, one a non-contiguous site involving Charles County, for a total of ~18,000 now under eradication. Survey results for 2008:

- 711 ash trees were destructively sampled in 280 grids.
- 595 ash trap trees were planted in the EZ to absorb EAB emerging from ash wood remaining in the area, and were harvested and destroyed in the fall except for 24 trees left for observation to be destroyed before Spring 2008 emergence.
- 22 natural ash trees were set as trap trees in EZ. The practice of girdling ash trees was discontinued in the areas surrounding the EZ was discontinued because we were concerned of artificial spread due to beetles being drawn out of the contained area.
- 100 purple prism traps and 100 green prism traps were set in the **Eradication Zone**. Half of each were baited with Manuka oil lures, the other half with Phoebe oil. Adult EAB were captured on 28 traps.
- 383 purple prism traps baited with Manuka oil were placed in **Western Maryland** (Garrett and Allegany counties); none were positive.
- 338 purple prism traps baited with Manuka oil were placed in **Anne Arundel, Charles, Calvert, Howard, Prince George's (outside the EZ), and Saint Mary's counties**. Two traps were positive in Prince George's County; all others were negative.
- MDA staff followed up on reports of suspect EAB at 69 various sites as reported via phone calls, email or to the Home and Garden Information Center or National EAB hotlines.
- All survey data were entered into the EAB Program database according to program requirements.

Eradication

The Maryland Department of Natural Resources Forest Service (MFS) continued to be a valued partner in this project, maintaining operational oversight of ground/harvest operations in wooded areas in the EZ. The MDA continued ash inventory and eradication in residential areas of the EZ, and emerald ash borer delimitation survey in the ½ - mile delimiting buffer area.

Trees to be cut as determined by survey were marked with orange paint. Urban residents received additional information on a door hanger if their property was scheduled for tree removal. Ash tree removal contracts for this cooperative agreement period specified ash removal from January 5 through April 1, 2009 (two loggers and one arborist). In wooded areas, stumps were treated with triclopyr herbicide to prevent re-sprouting. In residential areas, the stumps were ground to below the soil line, and chips and/or soil were used to fill the hole. Additionally, MDA staff removed small trees encountered while surveying the EZ. Harvested trees were taken to the marshaling yard at Cheltenham where they were ground to less than 1" pieces to destroy any EAB larvae that may be present. A total of 6,208 ash trees were removed by loggers, 137 by the arborist, and 6,240 (mostly <1" dbh) by MDA staff.

NOTE: Chipping/grinding activities for this round of ash tree removal were not funded by this Cooperative Agreement and will be reported in 2009.

An urban reforestation again was made possible through the MFS. Under this program, participants were offered a replacement tree for each qualifying ash tree removed by the MDA under the emerald ash borer containment project. In addition to 256 replacement trees distributed in the Spring of 2008 and mentioned in the 2007 annual report, 138 replacement trees were provided to eligible landowners in the Fall of 2008.

Regulatory:

The Secretary of Agriculture issued a revised quarantine order on August 26, 2008 to encompass Charles County, and extend the nested quarantine into the northern part of Charles County. On September 12, 2008, Charles County, Maryland was added to the Federal EAB Quarantine.

The USDA and MDA executed a compliance agreement to allow the chipping grinding contractor to ship the finished mulch from the marshaling yard to a buyer in West Virginia. The MDA maintained control of the product in the yard and ensured that the final product met the required specification before leaving the yard.

Our approach to compliance has been through outreach and education. MDA staff responded to violations of the state quarantine when ash trees were found to have been planted in the prohibited area. In most cases the planting specifications pre-dated our quarantine and the installer was not aware of the quarantine situation and the situation was remedied voluntarily.

Outreach:

Outreach continued to be a high priority and was primarily handled by the MDA PIO and her staff. Publications included a revised quarantine schematic and FAQ, firewood posters and mailing cards, MD EAB t-shirts and jackets. Activities included public meetings, press releases, and public service announcements. Information was mailed to hunters, anglers, land owners, tree care and green industry professionals, and others. A contract with the Bowie Baysox, a minor league baseball team in Prince George's County, included a billboard in the stadium, space in the scorecard, 10 game t-shirt tosses, and staffed concourse marketing tables during four games at Prince George's Stadium in Bowie. MDA staff and other state cooperators presented EAB updates and information at venues such as stakeholder meetings, pesticide recertification training, and professional meetings. Local press covered the purple trap deployment extensively. Other general EAB media coverage was generated by eradication activities.

The MDNR Forest Service and Park Service continued its policy to prevent campers and other visitors from bringing outside firewood onto all DNR owned or managed properties. The Department notifies campers of the restriction when reservations are made and by notices posted at the properties. Both Park and Forest Service staffs direct visitors to local sources of firewood and require campers to immediately burn any local firewood transported to a DNR property.

Maryland Cooperative Extension also contributed to the program. The Maryland Home and Garden Information Center maintained an informational Website and Web-based reporting form, http://www.hgic.umd.edu/content/emeraldAshBorer_form.cfm. In 2008, the University of Maryland Home and Garden Information Center fielded over 169 calls and answered 90 emails from concerned citizens regarding EAB. In addition, 23 residents utilized the electronic form on the Center's EAB page to report possible infestations.

The University of Maryland IPM Program, in collaboration with CSREES, developed an exotic invasive pests training program targeting green industry professionals and Cooperative Extension personnel, including Master Gardeners, to be certified as NPDN First Detectors. A cooperative training involving UMD Entomology faculty, Cooperative Extension specialists and MDA personnel was conducted fall 2008 for horticulturists and Cooperative Extension personnel, resulting in the certification of 25 new First Detectors. EAB was a primary focus of this training.

The University of Maryland, MDA, and USDA APHIS PPQ CPHST cooperated on a project to study emerald ash borer dispersal in Maryland, based on data collected over the duration of the project. The objectives were 1) to determine the rate of spread of EAB in Maryland and specifically address the question of whether, within an aggressively managed quarantine zone, the average annual movement of EAB exceeded a half mile limit and 2) to examine the possibility that the primary direction of dispersal of EAB in Maryland followed the direction of prevailing winds during the period of adult flight. The results of this can be seen in the University of Maryland IPM Program Annual Report, <http://www.mdipm.umd.edu/reports/MDIPM%202008%20ANNUAL%20Report.pdf>. Collaboration will be continued and the project expanded in 2009.

The MDA EAB Website, <http://www.mda.state.md.us/plants-pests/eab/>, was maintained and regularly updated with progress reports and maps. The site had more than 10,000 hits in 2008.

Results /Benefits of Project Activities:

- Adjustment of EZ boundaries and eradication strategy based on survey results.
- Prevention of regulated articles from moving outside of the quarantined area.
- Increased likelihood of containment of the infestation.
- Statewide awareness and understanding of the EAB project and quarantine, fostering “ownership” in the outcome.
- Protection of the ash resource in Maryland and neighboring states.
- Data contribution to the National EAB Program.
- Research support for the EAB Research and Development Team