

**Annual Accomplishment Report
Maryland Emerald Ash Borer Eradication Project
07-8224-0408-CA**

Year: 2007

Period Covered: January 1 through December 31, 2007 (contractual obligations through March 28, 2008)

State: Maryland

Agency: Maryland Department of Agriculture

Introduction and Overview:

The emerald ash borer, (*Agrilus planipennis*) (EAB), is an exotic, devastating pest of ash trees 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).

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" 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 include continued execution of inventory and delimiting surveys, education and outreach, and eradication 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. It is worth noting that the project area is still contained within two miles of the original infested nursery.

Survey:

The Maryland Department of Natural Resources Forest Service (MFS) continued to be a critical partner in this project, maintaining operational control of survey, ash inventory, and

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.

The 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", 17-23", 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").

At the beginning of this reporting period, the EZ was 11,500 acres. An ash log that was pulled as a spot check from a load of harvested wood coming into the marshaling yard on January 10, 2007 was determined to have EAB exit holes. The logging activity that day was near the trees known to be infested with larvae on the eastern edge of the EZ. Because of this detection, we expanded the EZ for a new total of ca. 13,700 acres. On Friday, June 1, the MD survey crew dropped and peeled a mostly dead, ~60' ash tree and found galleries about 30' up the tree. The tree was just inside the WSW edge of the ½ mile delimiting buffer. On July 31, four infested trees were discovered in delimiting survey in the 1 1/2 - 2 mile buffer on the northern edge of the project area just over the line from the EZ. Three exit holes were detected on two of the trees. On August 10, additional larvae were found about one mile north of the June 1 detection, inside the southwestern edge of the 2-mile buffer. Again, no exit holes were detected in this area. As a result of these detections, the EZ was expanded to the current 16,073 acres, 25.1 square miles. The total project area including the ½-mile delimiting buffer is 19,711 acres, 30.8 square miles and contains 8,102 2 ½ acre grids (see attached map).

Survey results for 2007:

- 5,021 grids were inventoried.
- 1,313 grids were re-inventoried.
- 1,589 ash trees were destructively sampled in 554 locations.
- MDA staff depopulated ash from 191 grids.
- 611 ash trap trees were planted in the EZ to absorb EAB adults emerging from root collars and small ash debris remaining in the area, and were harvested and destroyed in the fall except for twelve trees left for observation to be destroyed before Spring 2008 emergence.
- 149 natural ash trees were set as trap trees in and around the EZ.
- 300 ash trees at three nurseries within the southern quarantined area were dropped and peeled.
- MDA staff followed up on reports of suspect EAB at 203 various sites in thirteen counties 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.

- 109 purple prism traps were set in the EZ, 39 were set in Prince George’s and surrounding counties. Forty traps were baited with Manuka oil lures, 30 with leaf blend lures, and 78 with no lure. Thirteen beetles were collected on four traps. See Table 1.

Table 1. 2007 Purple Trap Results					
Grid	Trap #	Date set	Date collected	# EAB captured	Comments
ET97	2	5/7/2007	7/25/2007	1	leaf blend
EW98	4	5/7/2007	6/14/2007	6	leaf blend
EW98	4	5/7/2007	7/11/2007	1	leaf blend
EW99	252	6/27/2007	7/11/2007	3	manuka oil
EW99	253	6/27/2007	7/11/2007	2	manuka oil

Volunteerism was instrumental in this project. It is with deep appreciation that we report the contribution to our survey by many highly skilled volunteers from state agriculture and forestry departments in Delaware, New York, Pennsylvania, Virginia, and West Virginia. More than 2,000 person-hours were tallied by our neighbors who came to help reach our goals in 2007. Additionally, the Maryland Conservation Corps contributed 625 hours to assist the MFS with logging activities.

Eradication

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 ran December 28, 2006 – April 13, 2007 (five loggers, one arborist, and one grinder) and January 4 – March 20, 2008 (three loggers, one arborist and one grinder). 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 34,794 ash trees were removed from private, commercial, utility, Maryland-National Capital Park and Planning Commission, Prince George’s County, state, and federal land (Andrews AFB). Approximately 40,100 cubic yards of grindings were hauled from the marshaling yard. The Incident Command System, activated in August, 2006 was continued through April 13, 2007 when 2006/2007 eradication activities were completed.

Although we did not anticipate or include an urban reforestation program in the work plan for this cooperative agreement, we would be remiss in not reporting that this was made possible through the generous donations of five Maryland nurseries, and the Maryland Department of Natural Resources (MDNR) Forest Service (MFS). This program helped to facilitate on-the-ground eradication efforts tremendously by creating a small positive outcome to those affected by the tree removal. Eligible homeowners were offered three options:

1. Request discount vouchers donated by four Maryland nurseries for replacement trees - Fifteen vouchers were claimed.
2. Pick up bare root trees donated by one Maryland nursery at the MDA facility at Cheltenham on Fri., April 20 and Sat., April 21, 2007 - Approximately 2,000 trees were claimed by homeowners, communities, Prince George's County, and the Maryland National Capital Park and Planning Commission. Despite severe drought conditions in 2007, Prince George's County reports a 67% survival rate of replacement trees in the County reforestation area.
3. Participate in the MFS replacement tree program. Under this program, participants were offered replacement tree for each qualifying ash tree removed by MDA under the emerald ash borer containment effort (also see Outreach Section.) - 256 trees were requested on 117 properties.

Regulatory:

The Maryland EAB quarantine on Prince George's County Maryland, was revised and signed by Maryland Agriculture Secretary Roger Richardson on Friday, March 9, 2007. Primary changes reflected in Quarantine Order #07-01 were: 1) definition of Eradication Zone added, 2) moving any regulated article in the Eradication Zone prohibited, 3) specified "including any piece thereof" to definitions of regulated articles, and 4) allowed activities "as directed by the Secretary" in the quarantined areas.

On June 1, 2007, Prince George's County, Maryland was added by Interim Rule to the Federal EAB Quarantine. This was adopted as a final rule without change on October 9, 2007.

A critical control point in regulatory activities continued to be the Western Branch Composting Facility (WBCF), run by the Maryland Environmental Services (MES). The WBCF is a facility that takes almost all mixed yard waste, including possible ash, collected curbside in Prince George's County. Most of it is composted into a non-regulated product called Leafgro. However bigger pieces not in bags or bundles are mulched. Initially, WBCF was grinding it once, not to our specification of less than an inch in two dimensions, then sending it to a facility north of the nested quarantine line (the Capital Beltway and MD Rte.4) for a second grind that met our specification for intra state movement. The MDA entered into an intrastate compliance agreement with them in 2006 so that they could continue this arrangement. The MD EAB Incident Command Group agreed to this with the caveat that the high-risk wood from the EZ would not cross the line. We executed a contract with MES on January 11, 2007 to process wood brought into the WBCF from the EZ to our specification before leaving the facility. As of April 10, 2007, WBCF came into full compliance with the Maryland quarantine by grinding all mixed yard debris from anywhere in the quarantined county into mulch less than 1" in two dimensions, as validated by federal testing protocols. They do not currently move ash out of the state, but understand that in order to do so they will need a compliance agreement with USDA.

An ice storm that resulted in major tree damage and large quantities of fallen wood in the quarantined county in February of 2007 complicated regulatory activities. During the initial

emergency clean up, we accepted wood debris from the EZ at the EAB marshaling yard in an effort to control custody of at-risk wood that otherwise might have been moved illegally from the quarantined areas.

The MDNR Forest Service and Park Service introduced a new policy in May, 2007, designed 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.

Outreach:

Outreach continued to be a high priority and was primarily handled by the MDA PIO and her staff. Publications included a quarantine schematic, map, and FAQ, reprinting of the MSU ash identification flyer, firewood posters and mailing cards, MD EAB t-shirts and bumper stickers, and a 2008 magnetic calendar. Activities included public meetings, press releases, mailings to hunters, land owners, industry, 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. A public meeting was held in the EZ on Tuesday, January 30, 2007 in preparation for urban tree removal activities. 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, including radio, television, newspapers, and trade journals covered the January – April activities extensively.

Maryland State government has been very supportive of this project. Lt. Governor Anthony G. Brown was present on Friday, April 20, 2007 for an Earth Day kick-off tree planting and announcement of the replacement tree program for homeowners who lost their ash trees (see Eradication Section.) On April 24, 2007, Maryland Governor Martin O'Malley signed a Bill, drafted by the Maryland DNR (MDNR) and sponsored by Del. Frush, into law, allowing for MDNR to use monies paid into the Reforestation Fund to provide mitigation to private property owners whose trees are seized and destroyed due to a plant pest quarantine issued by the Secretary of Agriculture. Governor O'Malley also joined several other states in issuing a proclamation declaring May 20-26, 2007 to be Emerald Ash Borer Awareness Week in Maryland.

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. MCE also organized "Emerald Ash Borer: A Look into the Future", a full-day forum on November 13, 2007 in Linthicum Heights, MD, featuring lectures and discussion by experts who have dealt with this pest in Maryland, as well as in the Mid-West. This conference provided professionals (arborists, foresters, landscape architects, landscapers, and policy makers) an opportunity to learn from national and state experts about EAB, and how their knowledge and experience can be used to

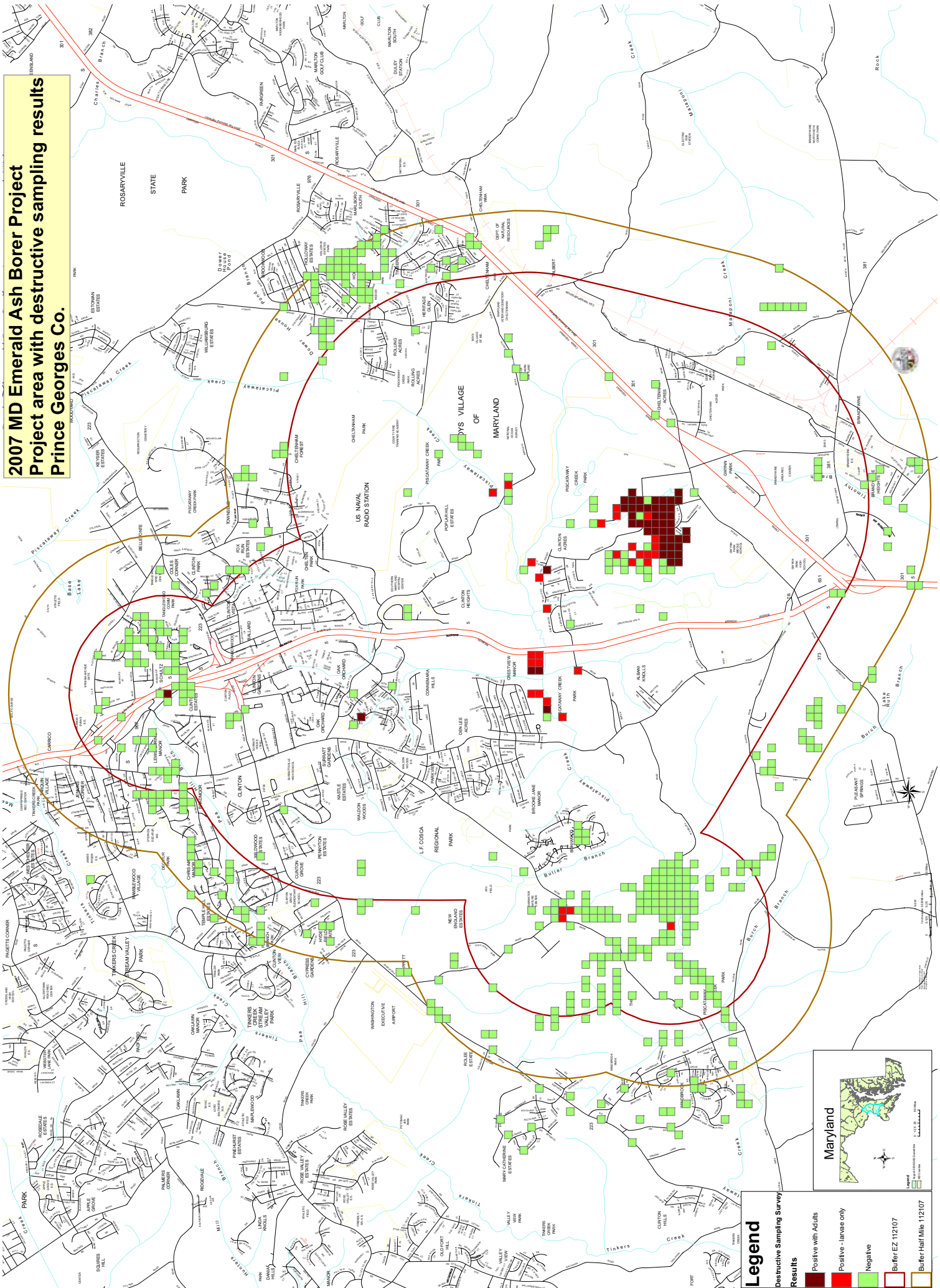
control or prevent future outbreaks in Maryland. A first detector training program for Maryland Master Gardeners was initiated in 2007.

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 17,000 hits in 2007.

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 USDA EAB Methods Development Team.

**2007 MD Emerald Ash Borer Project
Project area with destructive sampling results
Prince Georges Co.**



Legend
Destructive Sampling Survey

Results

- Positive with Adults
- Positive - larvae only
- Negative
- Buffer 112107
- Buffer 11207

Scale: 1:12,000

