USDA

# Emerald Ash Borer Report

APHIS PPQ

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## Chicago to Spend $2.6M to Tackle Emerald Ash Borer Infestation

*By Rachel Bogart | Yahoo! Contributor Network – Thu, Apr 25, 2013*

According to an article from NBC Chicago , Chicago city officials have announced a new plan to tackle the current emerald ash borer problem. Dedicating $2.6 million to the effort, the Chicago Department of Streets and Sanitation will begin to vaccinate about 35,000 ash trees and trim another 20,000 with the goal of reducing the spread and impact of the invasive insect.

The department is also training and hiring extra forestry crews in pesticide application and emerald ash borer treatment.

Here are some facts and details about the city's plan to combat the insect and the current problem that is threatening the city's ash trees:

The Chicago Sun-Times reported that to inoculate the trees, forestry crews with inject a pesticide into the tree's tissues, which will allow the chemical to spread throughout the tree's entire system.

By vaccinating the trees before an infestation occurs, the city will save millions of dollars in tree removal costs.

The average cost to inoculate a tree is $46 while tree removal and replacement costs about $1,000, noted DNAinfo .

Emamectin Benzoate is the pesticide of choice since it is 99 percent effective and has been on the market since 2009. It lasts about three years, so trees must receive a treatment booster after that time frame.

Approximately 85,000 trees on city property are infested by the emerald ash borer. Of those, 70,000 will be treated with a pesticide by summer of 2014.

WLS added that experts agree that tens of thousands of ash trees in Chicago will succumb to the insect, which lays eggs beneath the tree's bark. The larvae then eat their way through the essential tissues, cutting off nutrient flow.

City workers have already marked numerous trees for treatment across the city and are expected to continue to do so to help execute the new plan.

The amount to be spent on tree treatment and trimming in 2013 is significantly higher than last year when the city only spent $110,000.

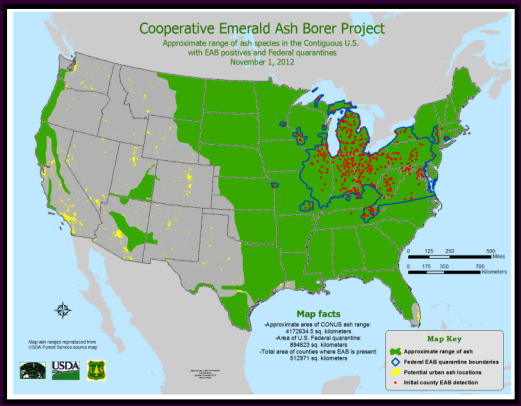
Ald. Dick Mell, 33rd Ward, is pushing the idea of seeking out private funds and donations to help with tree treatment: "I'd like to take this to some of the foundations, like McArthur Foundation, who are spending millions of dollars and art and everything. Well, trees are art, let's spend a little money on that to save some of the trees."

Residents should expect tree vaccination for this year to begin in early May and continue through this September to maximize the effectiveness of the treatment.

In addition, the city and non-profit organizations are trying to inform homeowners about the dangers of the invasive insect, especially infestations on private property.

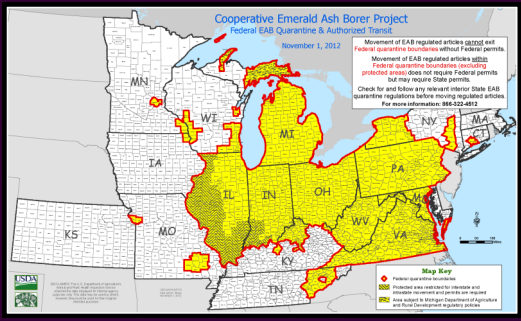
# Links to EAB Maps:

## Native and Potential Urban Range of Ash in CONUS




The maps following this thematic map provide a finer scale view of regulated areas and detections of EAB. This native and potential urban range map of ash provides another observation of those features from a coarser scale.

## EAB Quarantine Map

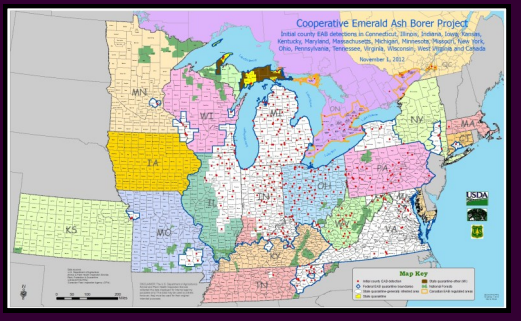



Note: Federal EAB quarantine change became effective July 1st, 2012.

More information on this quarantine change can be found at:

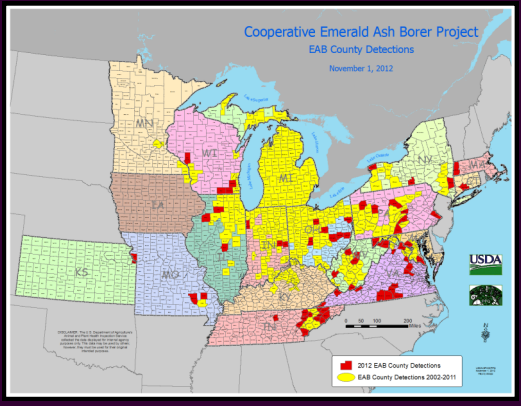
http://www.aphis.usda.gov/plant_health/plant_pest_info/emerald_ash_b/downloads/DA-2012-18.pdf

## EAB Detection and Quarantine Map




This map depicts the initial EAB detection in each county and replaces the map showing all known EAB detections. All detections are still tracked and recorded by the EAB Program but for illustrative purposes this map provides a clearer view of EAB's known distribution in the United States and Canada.

## 2013 EAB New County Detections Map




This map displays the initial detections of EAB by county. All new county detections occurring prior to 2013are filled yellow while new county detections for 2013 are filled red.

There were 74 new county detections in calendar year 2012; 39 in non-Federally quarantined areas.

## 2012 EAB New County Detections Map

## From Science:

*NEW* **Synthesis of (3E)-dodecen-12-olide, a potential pheromone component of the emerald ash borer.** Magee, D.I., P.D. Mayo, P.J. Silk, and B. Beattie. 2013. Synthetic Communications, 43: 1368-1377.

*NEW* **Glutathione-S-transferase profiles in the emerald ash borer, *Agrilus planipennis*.** Rajarapu, S.P., and O. Mittapalli. 2013. Comparative Biochemistry and Physiology - B Biochemistry and Molecular Biology, 165: 66-72.

*NEW* **Efficacy of the pheromone (3Z)-lactone and the host kairomone (3Z)-hexenol at detecting early infestation of the emerald ash borer, *Agrilus planipennis*.** Ryall, K.L., J.G. Fidgen. P.J. Silk. and T.A. Scarr. 2013. Entomologia Experimentalis et Applicata, 147: 126-131.

*NEW* **Attraction of *Agrilus planipennis* (Coleoptera: Buprestidae) and other buprestids to sticky traps of various colors and shapes.** Petrice, T.R., R.A. Haack, and T. M. Poland. 2013. Great Lakes Entomologist, 46: 13-30.

*NEW* **Impacts of the emerald ash borer (*Agrilus planipennis* Fairmaire) induced ash (*Fraxinus* spp.) mortality on forest carbon cycling and successional dynamics in the eastern United States.** Flower, C.E., K.S. Knight, and M.A. Gonzalez-Meler. 2013. Biological Invasions, 15: 931-944.

*NEW* **Multiparasitism by *Tetrastichus planipennisi* (Hymenoptera: Eulophidae) and *Spathius agrili* (Hymenoptera: Braconidae): Implication for biological control of the emerald ash borer (Coleoptera: Buprestidae).** Yang, S., J.J. Duan, J. Lelito, and R. Van Driesche. 2013. Biological Control, Volume 65, Issue 1, April 2013, Pages 118-123.

*NEW* **Water conservation features of ova of *Agrilus planipennis* (Coleoptera: Buprestidae).** Rigsby, C.M., D. Cipollini, E.M. Amstutz, T.J. Smith, and J.A. Yoder. 2013. Environmental Entomology, 42: 363-369.

*NEW* **Landing surface color preferences of *Spathius agrili* (Hymenoptera: Braconidae), a parasitoid of emerald ash borer, *Agrilus planipennis* (Coleoptera: Buprestidae).** Cooperband, M.F., A. Hartness, J.P. Lelito, and A.A. Cossé. 2013. Journal of Insect Behavior, 1-9.

*NEW* **Effects of the emerald ash borer invasion on four species of birds.** Koenig, W.D., A.M. Liebhold, D.N. Bonter. W.M. Hochachka, and J.L. Dickinson. 2013. Biological Invasions, 2013, Pages 1-9.

*NEW* **Identification of Odor-Processing Genes in the Emerald Ash Borer, Agrilus planipennis.** Mamidala, P., A.J. Wijeratne, S. Wijeratne, T. Poland, S.S. Qazi, D. Doucet, M. Cusson, C. Beliveau, and O. Mittapalli. 2013. PLoS ONE, 8 (2), Article number e56555.

**Ball diamonds as habitat for nests of *Cerceris fumipennis* (Hymenoptera: Crabronidae): Comparisons among three states.** Nalepa, C.A., Teerling, C., Rutladge, C.E., Swink, W., and Areliano, C. 2012. Journal of the Kansas Entomological Society.

**Estimates of *Agrilus planipennis* infestation rates and potential survival of ash.** Marshall, J.M., Smith, E.L., Mech, R., Storer, A.J. 2013. American Midland Naturalist.

**The welfare impacts of an invasive species: Endogenous vs. exogenous price models.** McDermott, S.M., Finnoff, D.C., Shogren, J.F. 2013. Ecological Economics.

**Factors affecting the survival of ash (*Fraxinus* spp.) trees infested by emerald ash borer (*Agrilus planipennis*).** Knight, K.S., Brown, J.P., Long, R.P. 2013. Biological Invasions.

**Buprestidae collected as prey by the solitary, ground-nesting philanthine wasp *Cerceris fumipennis* (Hymenoptera: Crabronidae) in North Carolina.** Swink, W.G., Paiero, S.M., Nalepa, C.A. 2013. Annals of the Entomological Society of America.

**Visual and chemical cues affecting the detection rate of the emerald ash borer in sticky traps.** Domingue, M.J., Lelito, J.P., Fraser, I., Mastro, V.C., Tumlinson, J.H., Baker, T.C. 2013. Journal of Applied Entomology.

**The relationship between trees and human health: Evidence from the spread of the emerald ash borer.** Donovan, G.H. , Butry, D.T., Michael, Y.L., Prestemon, J.P., Liebhold, A.M., Gatziolis, D., Mao, M.Y. 2013. Journal of Preventive Medicine.

## From Science:

**Towards the development of an autocontamination trap system to manage populations of emerald ash borer (Coleoptera: Buprestidae) with the native entomopathogenic fungus, *Beauveria bassiana.*** Lyons, D. B., R. Lavallee, G. Kyei-Poku, K. Van Frankenhuyzen, S. Johny, C. Guertin, J. A. Francese, G. C. Jones, and M. Blais. 2012. Journal of Economic Entomology.

**The effect of bark thickness on host partitioning between *Tetrastichus planipennisi* (Hymen: Eulophidae) and *Atanycolus* spp. (Hymen: Braconidae), two parasitoids of emerald ash borer (Coleop: Buprestidae).** Kristopher J. A., J. J. Duan, L. Bauer, J. P. Lelito, R. G. Van Driesche. 2012. Biological Control, 63:320-325.

**Characterization and virulence of *Beauveria* spp. recovered from emerald ash borer in southwestern Ontario, Canada.** Johny, S., G. Kyei-Poku, D. Gauthier, K. Frankenhuyzen, and P. J. Krell. 2012. Journal of Invertebrate Pathology, doi: 10.1016/j.jip.2012.05.008.

**Estimates of the potential cost of emerald ash borer (*Agrilus planipennis* Fairmaire) in Ca nadian municipalities.** McKenney, D.W., J. H. Pedlar, D. Yemshanov, B. D. Lyons, K. L. Campbell, and K. Law rence. 2012. Arboriculture and Urban Forestry, 38: 81-91.

**To treat or remove: An economic model to assist in deciding the fate of ash trees threatened by emerald ash borer.** McKenney, D.W., and J. H. Pedlar. 2012. Arboriculture and Urban Forestry, 38: 121-129.

**mRNA profiles of piRNA pathway genes in emerald ash borer, *Agrilus planipennis*.** Mittapalli, O., P. Mamidala, and S. P. Rajarapu. 2012. Insect Science, doi: 10.1111/j.1744-7917.2011.01466.x.

**Toward pest control via mass production of realistic decoys of insects.** Pulsifer, D.P., A. Lakhtakia, J. Kumar, T. C. Baker, and R. J. Martín-Palma. 2012. Proceedings of SPIE - The International Society for Optical Engineering, Vol. 8339.

**Validation of reference genes for gene expression studies in the emerald ash borer (*Agrilus planipennis*).** Rajarapu, S.P., P. Mamidala, and O. Mittapalli. 2012. Insect Science, 19: 41-46.

**Could phenotypic plasticity limit an invasive species? Incomplete reversibility of mid-winter deacclimation in emerald ash borer.** Sobek-Swant, S., J. C. Crosthwaite, D. B. Lyons, and B. J. Sinclair. 2012. Biological Invasions, 14: 115-125.

**Attraction of *Agrilus planipennis* (Coleoptera: Buprestidae) to a volatile pheromone: Effects of release rate, host volatile, and trap placement.** Ryall, K. L., P. J. Silk, P. Mayo, D. Crook, A. Khrimian, A. A. Cossé, J. Sweeney, and T. Scarr. 2012. Environmental Entomology, 41: 648-656.

**Potential distribution of emerald ash borer: What can we learn from ecological niche models using Maxent and GARP?** Sobek-Swant, S., D. A. Kluza, K. Cuddington, and D. B. Lyons. 2012. Forest Ecology and Management, 281: 23–31.

**Hypocotyl derived in vitro regeneration of pumpkin ash (*Fraxinus profunda*).** Stevens, M. E., and P. M. Pijut. 2012. Plant Cell Tissue and Organ Culture, 108: 129-135.

**Assessing street tree diversity in four Ohio communities using the weighted Simpson index.** Subburayalu, S. and T. D. Sydnor. 2012. Landscape and Urban Planning, 106: 144–50.

**Differential persistence of blue ash and white ash following emerald ash borer invasion.** Tanis, S. R. and D. G. McCullough. 2012. Canadian Journal of Forest Research, 42: 1542-1550.

**Cold temperature and emerald ash borer: Modelling the minimum under-bark temperature of ash trees in Canada.** Vermunt, B., K. Cuddington, S. Sobek-Swant, and J. Crosthwaite. 2012. Ecological Modelling, 235-236: 19-25.

# As Many as 2,600 Ash Trees Have Been Removed From Geneva Parkways

By Rick Nagel
April 30, 2013

"It's a long way back," Geneva Streets Superintendent Chris Vaughn said recently at a meeting of the Geneva City Council.

The toll of the Emerald Ash Borer in Geneva—so far—is as many as 2,600 trees removed from the city's parkways.

"That's just ash trees on the city right of way," Vaughn told the council. It does not include trees residents have removed or trees the city removed away from the parkway due to safety reasons.

More than 11,000 trees make up the city of Geneva's parkway canopies, so you can do the math and see that as much as 23.6 percent of Geneva's parkway trees have been taken down.

The city ceased planting of parkway ash trees in 2002. It has been replacing trees at a clip of about 250 a year. Alderman Charles Brown said he thought the city has planted in excess of 500 trees so far.

Replacement parkway trees will be planted as funding is available or via the 50/50 Replacement Parkway Tree Program, the city's website says.

*About 2,000 of the 2,600 ash trees on city parkways and property have been taken down due to the Emerald Ash Borer. Now, city Streets Superintendent Chris Vaughn is trying to catch up with tree planting.*

## Also in the Press:

**Columbus, Metro Parks cut down more ash borer infected trees**
Columbus Dispatch
**His mood turns somber as he walks past only a few of the thousands of leafless ash trees at Blacklick, all of which were killed by emerald ash borers. "Sad is one word for it," Boose said, standing near a spot where healthy ash trees once provided …**

**Bong to fell 1000 ash trees due to invasive beetle**
Kenosha News
**Van Slyke said Bong was the first state property to have identified emerald ash borer within its boundaries. She could not confirm nor deny Tuesday that it arrived via infected firewood brought in by a camper. Given the recreation area's proximity to …**

**Crews scramble to map extent of emerald ash borer infestation**
Concord Monitor
**State foresters Adam Taschereau and Garret Dubois look at possible limbs to sample as they test for the emerald ash borer in East Concord; Wednesday, April 24, 2013. Each spot within a 6-mile radius surveyed has two ash trees sampled, though some spots …**

## Illinois:

Illinois Department of Agriculture

Field Staff activities – During the reporting period, EAB field staff members were focused on the placement of lure-based purple sticky traps in southern Illinois. Trap placement activities were conducted in Jackson, Jefferson, and White Counties. Trap placement has been completed in 12 counties (Alexander, Franklin, Gallatin, Hamilton, Hardin, Johnson, Massac, Pope, Pulaski, Saline, Union, and Williamson counties). Staff visited 100 pre-selected sites and placed 66 traps (depicted in map on the following page by purple triangles) and encountered 34 sites which were either not accessible or did not contain an acceptable trapping location (depicted on the map as yellow squares). At this point, the Department has visited 288 of 856 (34%) survey target locations and has placed 203 traps.

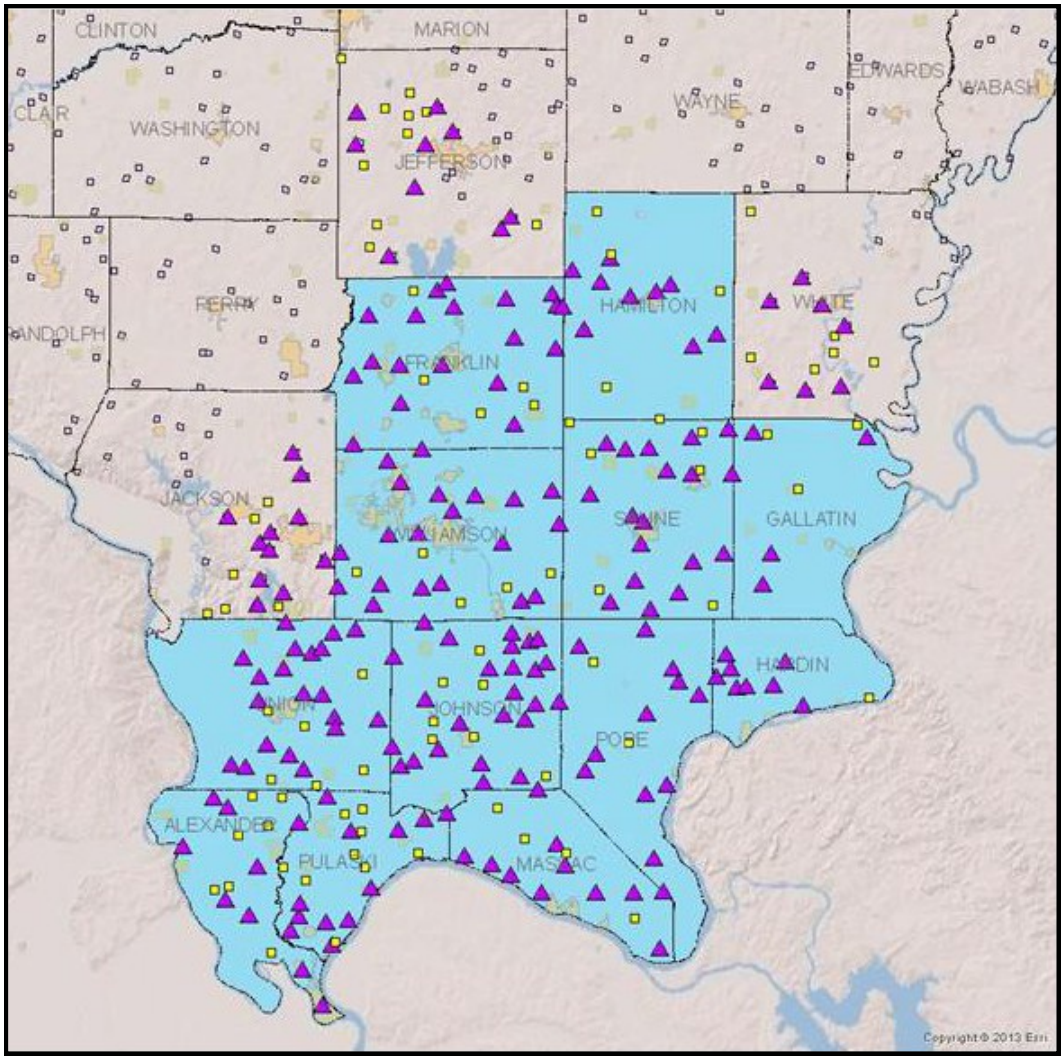
www.IllinoisEAB.com activity – Visits to the Emerald Ash Borer page on the Department's website totaled 956 during the reporting period.

EAB quarantine compliance agreements – The Department issued 5 new compliance agreements and discontinued nonr during the reporting period. The total number of current compliance agreements is now 1,547.

State Firewood Importer Certification – During the reporting period, the Department issued no firewood importer certificates leaving the total number of certificates issued for the 2013 calendar year at 21.

Previous year totals – 2012: 44 firewood importer certificates issued;
2011: 43 firewood importer certificates issued; and
2010: 45 firewood importer certificates issued.

**Illinois (continued):**



# Credits and Contact Info

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