

Emerald Ash Borer Management Plan

Perrot State Park

December 2013

Background

Emerald ash borer (EAB, *Agrilus planipennis* Fairmaire) is an exotic beetle that is native to China, Mongolia, North Korea, South Korea, Japan, Taiwan, and the Russian Far East. Emerald ash borer probably arrived in the United States on solid wood packing material carried in cargo ships or airplanes originating in its native Asia. It was first identified in the Detroit, Michigan area in 2002. Emerald ash borer is also established in Windsor, Ontario, was found in Ohio in 2003, northern Indiana in 2004, northern Illinois and Maryland in 2006, western Pennsylvania and West Virginia in 2007, Wisconsin, Missouri and Virginia in the summer of 2008, Minnesota, New York, Kentucky in the spring of 2009, Iowa in the spring of 2010, Tennessee in the summer of 2010, and Connecticut, Kansas, and Massachusetts in the summer of 2012.

As of August 15, 2013, there are 20 counties in Wisconsin quarantined for EAB including Trempealeau County which is the home of Perrot State Park. Residents and businesses in quarantined counties are restricted from moving any hardwood firewood, ash nursery stock or ash logs or timber out of the quarantine area.

In North America, EAB has only been found in ash (*Fraxinus* spp) trees. Ash trees generally die within five years of being infested. There appears to be very little natural resistance of North American ash species to EAB.

Adult beetles nibble on ash leaves but cause little damage. The canopy of infested trees begins to thin above infested portions of the trunk and major branches because the borer larvae destroy the water and nutrient conducting tissues under the bark. Heavily infested trees exhibit canopy die-back usually starting at the top of the tree. One-third to one-half of the branches may die in one year. Most of the canopy will be dead within 2 years of when symptoms are first observed. Sometimes ash trees push out sprouts from the trunk after the upper portions of the tree dies. Although difficult to see, the adult beetles leave a "D"-shaped exit hole in the bark, roughly 1/8 inch in diameter, when they emerge in June.

The EAB beetle can have a one- or two-year life cycle. Adults begin to emerge mid- to late May with peak emergence in late June. Females usually begin to lay eggs about 2 weeks after emerging. Eggs hatch in 1-2 weeks, and the tiny larvae bore through the bark and into the cambium - the area between the bark and wood where nutrient levels are high. The larvae feed under the bark for several weeks, usually from late July or early August through October. The larvae typically pass through four stages, eventually reaching a size of roughly 1 to 1.25 inches long. Most EAB larvae overwinter in a small chamber in the outer bark or in the outer inch of wood. Pupation occurs in spring and the new generation of adults will emerge in May or early June, to begin the cycle again.

EAB adults can fly at least 1/2 mile from the tree where they emerge. Many infestations, however, were started when people moved infested ash nursery trees, logs, or firewood into non-infested areas.

Key Concerns for Perrot State Park

The main concerns regarding EAB at Perrot State Park are public safety, resource protection, visitor experience, and aesthetics. Perrot State Park offers many recreational opportunities

including family and group campsites, picnic areas, 13 miles of hiking trails, an off-road biking trail loop, hunting, and various winter activities.

Trees in heavily used areas including campgrounds and picnic areas are typically under greater stress than forest trees due to soil compaction and bark and limb injuries and may therefore be more attractive to EAB females for depositing eggs. The loss of mature trees impacts shade, screening, site cooling, and the aesthetic quality of the area. The park campground will be the first area assessed for potential ash hazard trees which are marked and slated for removal. A component of ash tree management is the inclusion of new tree plantings as necessary to address shading and screening needs and to improve aesthetics.

Current Situation

EAB presence was confirmed at Perrot in the fall of 2012 in an ash tree growing adjacent to the dump station located inside the campground area. The park use areas including the campground were subsequently cruised to identify ash that, when affected by EAB, will become hazards to the visiting public. About 260 saw-log ash trees found in the park campground, along the Riverview trail, and along the park entrance road were marked for a total of 25,200 bd. ft. Smaller and poor quality ash in these areas were also marked as discovered but not tallied.

No saw log ash trees were found in park day use areas, including picnic areas, and consequently no ash trees were marked. There are however, 80 to 100 smaller or poor quality ash trees growing in the day use areas. These trees are for the most part evenly interspersed with other tree species but with some small areas populated only by ash. All of these trees are located close to roads and on relatively flat terrain. If biomass cutting is realized, ash trees located in the visitor use area should be marked and included to be cut by the biomass contractor. The cruising forester estimated the total ash population in the park (pole-size and larger) at between 500 - 600 trees. The majority of these trees are found on the sand terrace portion of the park along the Trempealeau and Mississippi rivers. The terrace areas are, for the most part, developed as day use areas and campgrounds. The internal bluff areas of the park are not heavily populated by ash and will be managed by allowing natural succession.

Priority Areas for EAB Management at Perrot State Park (see attached property map)

1. Family and group campgrounds
2. Riverview trail/ Park entrance road
3. Designated visitor use area

Low Priority Areas

Low priority areas are those outside of the use areas where there is no ash (such as grasslands), no compelling ecological need to remove ash, or no public hazards posed by dead or dying ash trees.

Wildlife Concerns

Ash species, especially white ash, can be important sources of habitat and browse for wildlife. The samaras (fruits) are good forage for many other birds and small mammals. White ash's ability to readily form trunk cavities if the top is broken and its large size (24 to 48 inches) at maturity make it highly valuable for primary cavity nesters such as woodpeckers. Once the primary nest excavators have opened up the trunk of the tree, it is excellent habitat for secondary nesters such as wood ducks, owls, nuthatches, and gray squirrels.

Endangered Resources and State Natural Area Concerns

There are two State Natural Areas designated at Perrot State Park, Brady's Bluff and Trempealeau Mountain SNAs. The NHI review shows 54 species within the sale area and within a 1 mile buffer. Of these 12 of the species are threatened; five are endangered; 29 are of special concern. Negative impacts to rare species will be avoided due to timing of the harvest (winter only–frozen ground) and lack of habitat at harvest locations (aquatic and prairie-obligate species).

Archaeological Feature Concerns

Perrot State Park has a rich history of sites with archaeological and historical significance. Two French fort sites have been established plus several Native- American village sites, and about 70 mounds, including burial mounds have been identified at Perrot. Mounds attributed to a variety of Native American groups have been documented and mapped along the lower terrace adjacent to the river. These will not be impacted by this proposed single tree selection harvest. There is a mound group located within the campground. Campsites are located between and adjacent to a number of mounds. These areas will be designated and avoided during logging operations.

Frozen ground logging will prevent disturbance of the surface and subsurface soil layers. Future stump grinding activities (if done) will need to avoid these features as well. All operations will be in compliance with department policy

(<http://intranet.dnr.state.wi.us/int/land/facilities/guidance/631BurialMounds.html>).

Tools for Management of EAB

Monitoring

Property staff will receive training in EAB symptom identification and will monitor for EAB symptoms and hazard trees at the park.

Cultural Management

Tree planting will be needed to replace hazard trees that are removed from high use areas. Replacement trees (park stock) will be a diverse mix of species, with a balance of fast-growing and slower species and a variety of tree heights. More quickly growing trees will help replace shade trees sooner while allowing slower growing, longer living species to reach maturity. Proper maintenance after the trees have been planted, such as watering as needed and reducing competition from other vegetation, will be needed to increase the survival of the saplings.

Biological Controls

Several parasitoid, non-native wasp species have been identified and authorized for release by the U.S. Department of Agriculture. The wasps are small, non-stinging insects that are harmless to humans. Perrot State Park should be assessed for suitability as wasp release site.

Physical Controls

A decision to “pre-salvage” the ash before significant mortality sets in was made to minimize exposure of the public to hazard trees. The potential to utilize these trees as biomass is high. A nearby incinerator power plant has contracted several area harvesters to supply biomass to the plant. We intend to make this “pre-salvage” sale available to those harvesters also. An advantage of contracting a biomass harvester is that that contractor will take all parts of the salvaged tree eliminating the need to clean up tree tops and other slash left by traditional timber cutting activities.

Potential hazard trees will be identified and removed from within the priority areas noted above. When possible, all infested trees will be chipped and if possible utilized as bio-mass. If needed any chip collection will be retained on the park, away from the public. Wood that cannot be chipped or removed as marketable timber will be stockpiled for at least two years on site, away

from the public. That wood can then be used as firewood for the park. Stumps in mowed areas will be ground down so that they are not a tripping or maintenance hazard.

Pesticides

Insecticides can be used to protect any identified high value (for example, a large shade tree) trees that are identified. Depending on the chemical used, pesticides treatments would need to be applied at one to three year intervals.

Stumps of hazard trees that are felled should be treated with herbicide to prevent re-sprouting.

Public Education and Communication

EAB posters and other information will be posted in the campground bulletin boards. Flyers and information will be handed out in the property office. Notices about hazard tree removal will be placed on bulletin boards and in the property office. A public outreach campaign about EAB management within Perrot State Park should be developed and implemented with the Office of Communications.

Funding

Educational literature is available through the DNR at no charge. The park may be able to purchase any materials for physical controls and labor out of the operations budget. Regional sawyer crews may be used for felling hazard trees. Chipping and tree planting may be accomplished through a variety of labor such as a Department of Corrections crew. Tree planting may also be done by volunteers.

EAB management will be multiple year effort that will likely strain the operations fund of Perrot State Park. Property staff will identify and pursue alternate funding sources, such as the Sustainable Forestry Fund, to augment the property operation budget.

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Plan reviewed by:

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Revised by (Date): _____

Revision comments:

Perrot State Park Emerald Ash Borer Management Zones

