

II. Climate	1. Climate restrictions:
	2. Effects of potential climate change: Warming temperatures may allow for conversion to one year life cycle and movement to more northern climates.
III. Dispersal Potential	1. Invasion pathways: Natural dispersal: Adult flight Transportation of habitat material: Movement of infested material, including nursery stock, dunnage, crating material, lumber and wood with bark attached.
	2. Distinguishing characteristics that aid in its survival and/or inhibit its control: EAB usually infests the upper portion of the tree where visual inspection is difficult; its cryptic nature allows it to go undetected until damage has been inflicted, protects it from natural enemies and limits effectiveness of chemical control methods.
IV. Ability to go Undetected	HIGH MEDIUM X LOW
	Signs and symptoms: Metallic green beetles, cream colored larvae under bark, D-shaped emergence holes in bark, S-shaped feeding tunnels under bark, thin foliage in the upper crown, die-back in the upper and outer crown, epicormic sprouts on stem and at base, bark cracks covering larval galleries, woodpecker activity
C. DAMAGE POTENTIAL	
I. Competitive Ability	1. Presence of Natural Enemies: Some parasitoids of related species have been found and are being studied. No known predators in North America, except woodpeckers.
	2. Presence of Competitors: Unknown
	3. Rate of Spread: An adult will fly up to a few kilometers in search of a new host.
II. Environmental Effects	1. Alteration of ecosystem/community composition? YES X NO Notes: EAB currently only affect ash trees. In WI, ash trees are present in both urban and forest (6.8%) settings, and reported to have estimated 727 million ash trees. Removal of all ash trees is not recommended in an effort to maintain biodiversity.
	2. Alteration of ecosystem/community structure? YES X NO Notes: Removal of ash will open the canopy of mixed forests and allow development of other species.
	3. Alteration of ecosystem/community functions and processes? YES X NO Notes: Open canopies will increase amount of light and temperature reaching forest floor, which affects microbial activity and vegetation.
III. Socio-economic	1. Effects of Restricting Entry: No negative effects predicted.
	2. Effects on Human Health: Causes structural damage to host trees creating hazards. Trees are known to have positive effects on mental health.
D. PREVENTION AND CONTROL	
I. Detection Capability:	Notes: Visual survey methods: Ground surveys include visual scanning for signs and symptoms.

	EAB detection trees: trees are girdled at waist height and an 18 inch sticky band is placed above the wound. After one to two years, the tree is cut in fall or winter and bark peeled for inspection for galleries. Tree peeling is necessary because the absence of adults does not preclude the presence of larvae.
II. Costs of Prevention :	Notes: Outreach and education, monitoring, preventive chemical treatments quarantine
III. Responsiveness to prevention efforts:	Notes: Public awareness and early detection are most effective.
IV. Control tactics:	<p>1. Cultural: Removal and destruction of host trees within half mile radius of infested tree; avoid stresses, e.g. water during dry spells</p> <p>2. Biological: Parasitoids: current research has found: In NA: in related <i>Agilus</i> spp. 3.6 to 4 parasitoids per host; In China: <i>Spathius</i> sp. (Braconidae), <i>Schlerodermus</i> sp. (Eulophidae), <i>Oobius</i> sp. (Encyrtidae). No known predators in NA.</p> <p>Microbial: <i>Beauveria bassiana</i> (Botanigard). Up to 50% death, but protection against EAB unknown.</p> <p>3. Chemical: Effectiveness is limited. Only recommended within 10 to 12 miles of confirmed EAB infestation, in low density infestations, and on trees with dbh less than 10 inches. Once tree is infested, chemical methods are less effective.</p> <p>Imiacloprid soil drench; acephate trunk injections in trees less than 3 inches diameter; foliar and bark sprays (during adult activity) bifenthrin, cyfluthrin, permethrin, carbaryl.</p> <p>4. Regulatory: Quarantine: prevent interstate movement of regulated articles, i.e. nursery stock, green lumber, any ash material, and composted and uncomposted wood chips</p>
V. Minimum Effort:	Notes: Public outreach and strict and effective monitoring for detection of EAB is essential.
VI. Most Effective Control:	Notes: Removal and destruction of infested trees and material.
VII. Cost of prevention or control vs. Cost of allowing invasion to occur:	Notes: The likelihood of invasion is high and infestation is 100% fatal to the tree. Allowing invasion to occur threatens the survival of all ash trees in the region. Native Americans use ash for basket-making.
VIII. Non-Target Effects of Control:	Notes: Risks associated with chemical controls and importing biological control agents.
IX. Efficacy of monitoring:	Notes: Currently being studied
X. Legal and landowner issues:	Notes: Regulatory quarantine procedures have been put in place to prevent spread. Outreach programs are necessary to inform and encourage the public to follow these regulations

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Date Completed: August 2007