

A banner image for Rosemount, Minnesota. On the left, the text "ROSEMOUNT MINNESOTA" is displayed in a gold, serif font against a sunset background. To the right, a stone pillar supports a white sign that reads "Welcome to ROSEMOUNT" with a green shamrock logo. A green banner with "ROSEMOUNT" and a shamrock hangs from a green lamppost. The background shows a pond with autumn trees reflected in the water.

ROSEMOUNT
MINNESOTA

<http://www.ci.rosemount.mn.us/index.aspx?nid=191>

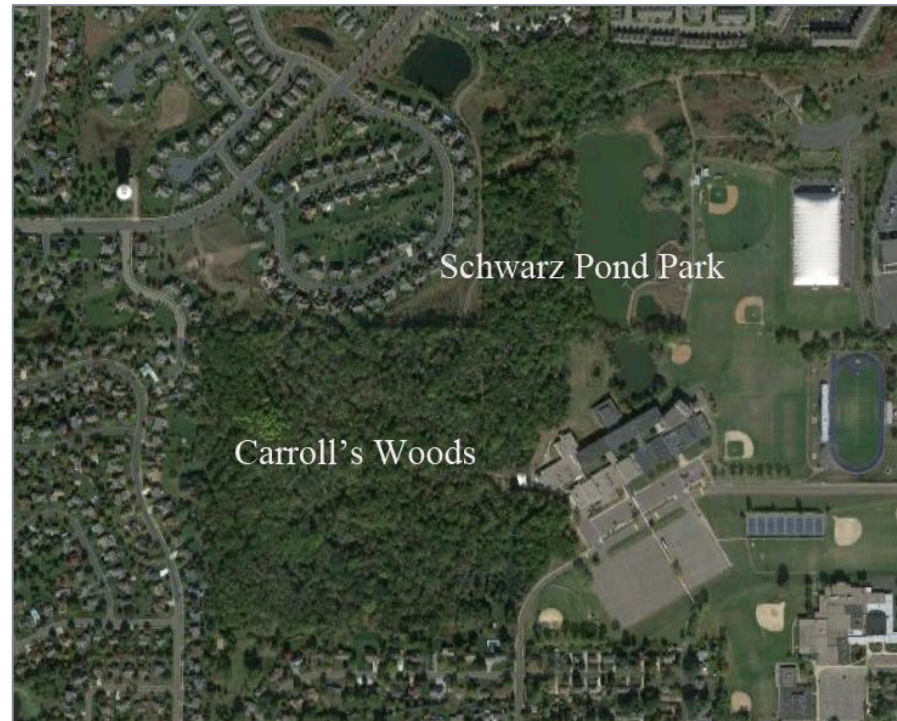
Rosemount Parks

“Invasive Species Management and Educational Opportunities at Schwarz Pond Park and Carroll’s Woods Park”

University of Minnesota Duluth and City of Rosemount

Background

- Sustainability Issues Investigation
- Rosemount Parks
 - Carroll's Woods
 - Schwarz Pond
- Invasive Species



Rosemount

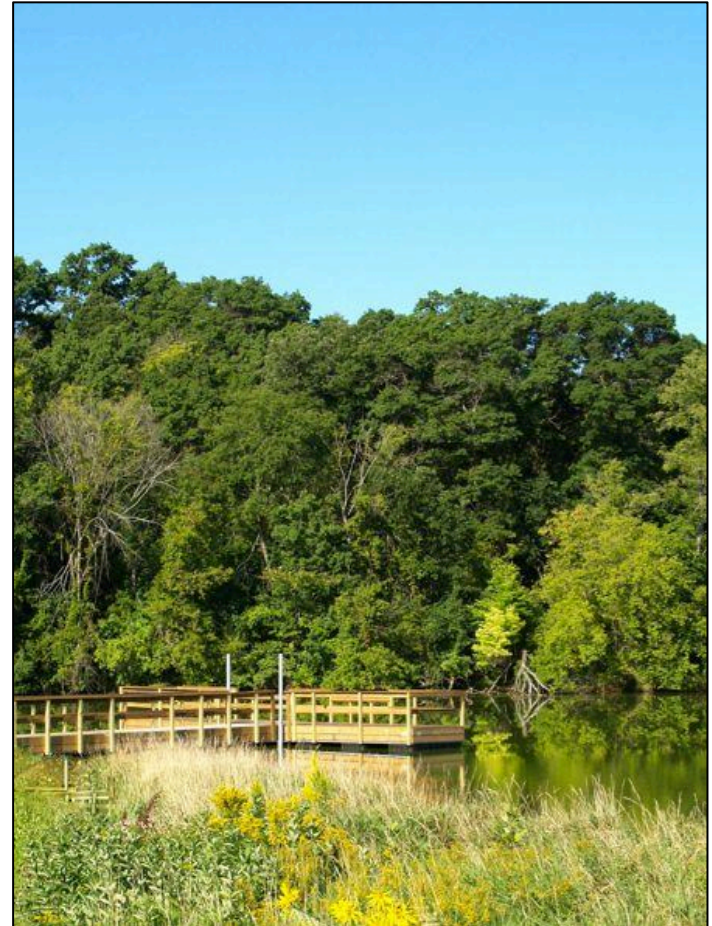
- South of Twin Cities
- 22,666 people
- 23 Parks



Carroll's Woods



Schwarz Pond Park



Issue

Invasive species such as buckthorn and the emerald ash borer can have long-lasting ecological impacts in an ecosystem.

Common Buckthorn
Ramnus cathartica



<http://www.ci.burnsville.mn.us/index.aspx?NID=1092>

Emerald Ash Borer
Agrilus planipennis



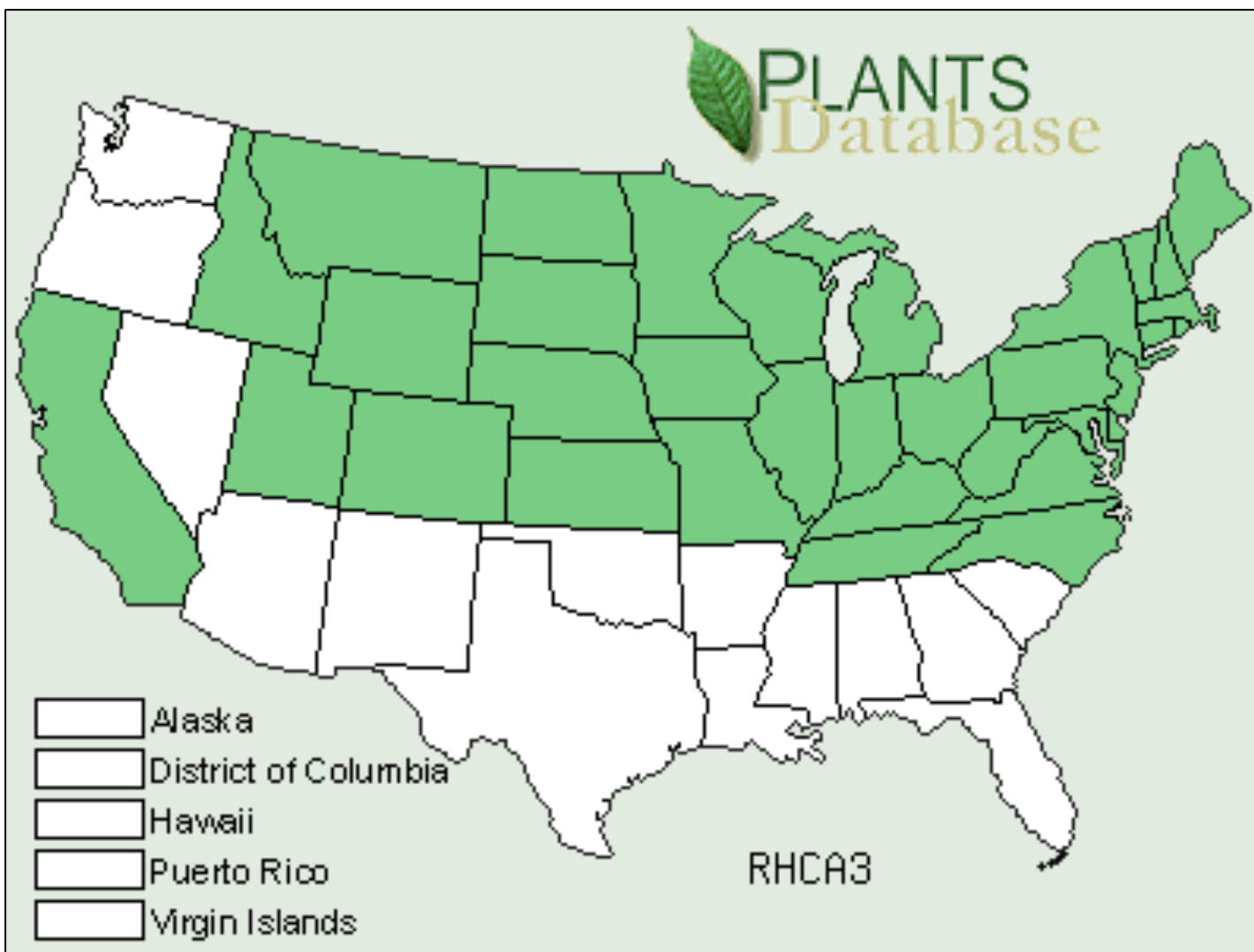
<http://blogs.mprnews.org/updraft/2014/01/extreme-cold-may-wipe-out-high-percentage-emerald-ash-borer-larvae/>

Common Buckthorn



- outcompetes & replaces native vegetation
- removes habitat for animals
- spreads easily
- host for pests

Common Buckthorn



Emerald Ash Borer (EAB)



- Introduction
- Life cycle
- Detection
- Dakota County

Emerald Ash Borer (EAB)

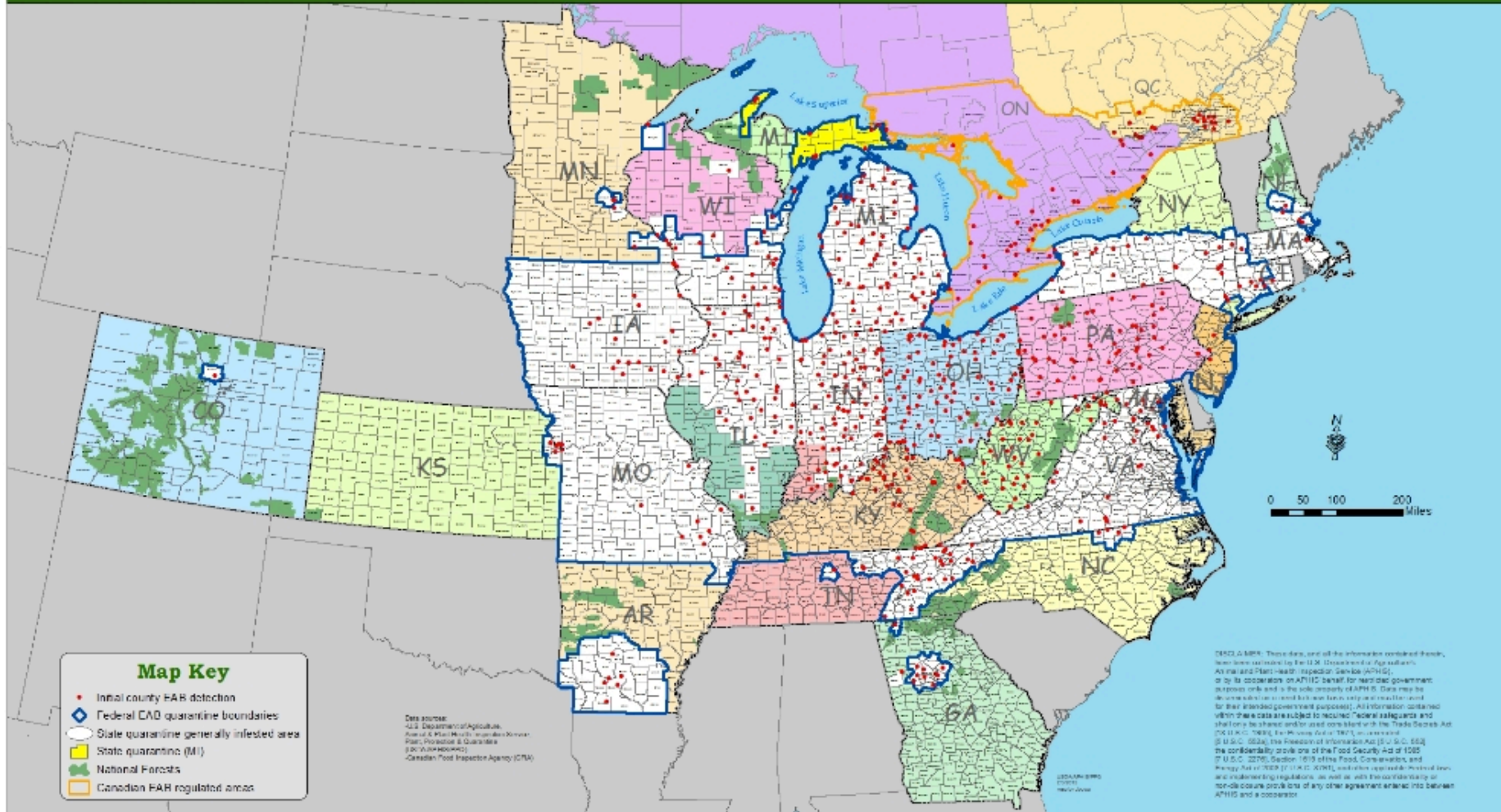


United States
Department of
Agriculture

Cooperative Emerald Ash Borer Project

Initial county EAB detections in North America

February 3, 2015



Other Invasives

- Garlic Mustard
- Wild Parsnip
- Spotted Knapweed
- Thistle



Goals

- Develop an invasive species management plan
- Create an environmental education plan



Research Question

What would be the most cost-effective and sustainable best-management practices for the invasive species affecting Schwarz Pond Park and Carroll's Woods?

Methods

- Literature Reviews
 - Cost-Benefit Analysis
- Educational Plans
 - Outreach



Buckthorn Management

- Tilling
- Mulching
- Time of the Year



Criteria	Status Quo
Cost (Short Term)	\$0.00 (5)
Cost (Long Term)	(1)
Time to completion	0 months (5)
Effectiveness of removal	No (0)
Effect on other plants	Loss of biodiversity (1)
Community involvement and Education	Poor (0)
TOTAL	8

Pulling

- Size
- Tools
- Time of the Year



Criteria	Pulling
Cost (Short Term)	\$4,500 (4)
Cost (Long Term)	\$100,000 (3)
Time to completion	Years (1)
Effectiveness of removal	Yes (5)
Effect on other plants	Native populations can re-establish (5)
Community involvement and Education	Good community involvement (5)
TOTAL	23

Herbicides

- Varying options
 - Round-up
 - Ortho-Brush-B-Gon



Criteria	Pulling
Cost (Short Term)	\$4.2 million (1)
Cost (Long Term)	\$0.00 (5)
Time to completion	Years (1)
Effectiveness of removal	Yes (5)
Effect on other plants	Native populations can re-establish (5)
Community involvement and Education	Good community involvement (5)
TOTAL	20

Our Recommendations

- Pulling and Herbicides

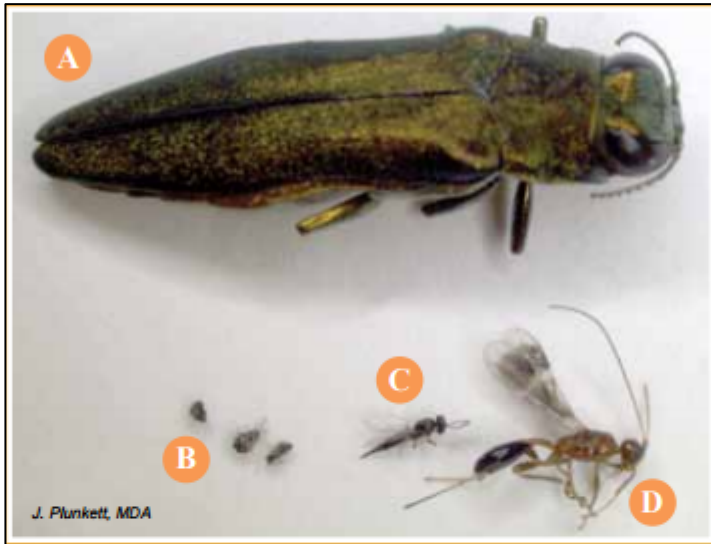


EAB Management

Criteria	Status Quo
Cost (Short Term)	\$0.00 (5)
Cost (Long Term)	Expensive(1)
Time to completion	0 months (5)
Effectiveness of removal	No (0)
Health of ash trees	Poor (1)
Community involvement and Education	Poor (0)
TOTAL	12

Biological Control

- Parasitoid Wasps
- Possible negative effects



Criteria	Biological Control
Cost (Short Term)	Parasitoids may be free, labor, personnel (4)
Cost (Long Term)	Unknown (2)
Time to completion	Unknown (2)
Effectiveness of removal	Not really known (2)
Health of ash trees	Not really known (2)
Community involvement and Education	Can be community involvement with monitoring (4)
TOTAL	16

Removing Trees

- Uses
 - Lumber
 - Firewood
 - Landscaping
- Quarantined Area

Criteria	Removal of Trees
Cost (Short Term)	\$13,000 (4)
Cost (Long Term)	None (5)
Time to completion	Months (4)
Effectiveness of removal	Yes (5)
Health of ash trees	Removed (0)
Community involvement and Education	Can be some education (2)
TOTAL	20

Insecticides

- Injection
- Soil Drenches



Criteria	Insecticides
Cost (Short Term)	\$0.00 (5)
Cost (Long Term)	\$40,000 (2)
Time to completion	Years (1)
Effectiveness of removal	Mostly (4)
Health of ash trees	Good (4)
Community involvement and Education	Can be some education (2)
TOTAL	19

Our Recommendations

- Insecticides or Removal
- Education



Sustainability Education

- Signs for Trails
- Pamphlets

 **ROSEMOUNT**
MINNESOTA



Invasive Species Alert: Common Buckthorn

What Is It?
Buckthorn is originally an ornamental shrub from Europe. It is now considered an invasive threat to Minnesota habitats.

Why Are We Concerned?
Buckthorn outcompetes native plants, degrades wildlife habitat, promotes loss of soil, is easily spread and also serves as habitat for disease-causing fungi.



Orange layer under bark

How Do You Identify It?
Some signs of Common Buckthorn are:

- Deciduous shrubs to medium-sized trees (up to 15ft tall)
- Smooth, glossy, finely-toothed egg-shaped leaves
- Thorn-like spines growing from end of twigs
- Black, berry-like clusters that ripen in August.
- Orange layer under outer bark



How Can You Help?

- Inform neighbours and park authorities of buckthorn spotted in the area
- Pull buckthorn using hand or mechanical removal
- Apply herbicides to cut stumps to prevent resprouting
- Participate in local buckthorn pulls

For more information please contact park officials



Buckthorn branch

Sustainability Education

- Community Buckthorn Pull
- Neighbors Meeting
- School and Teacher involvement



Sustainability Education



Thank You

