



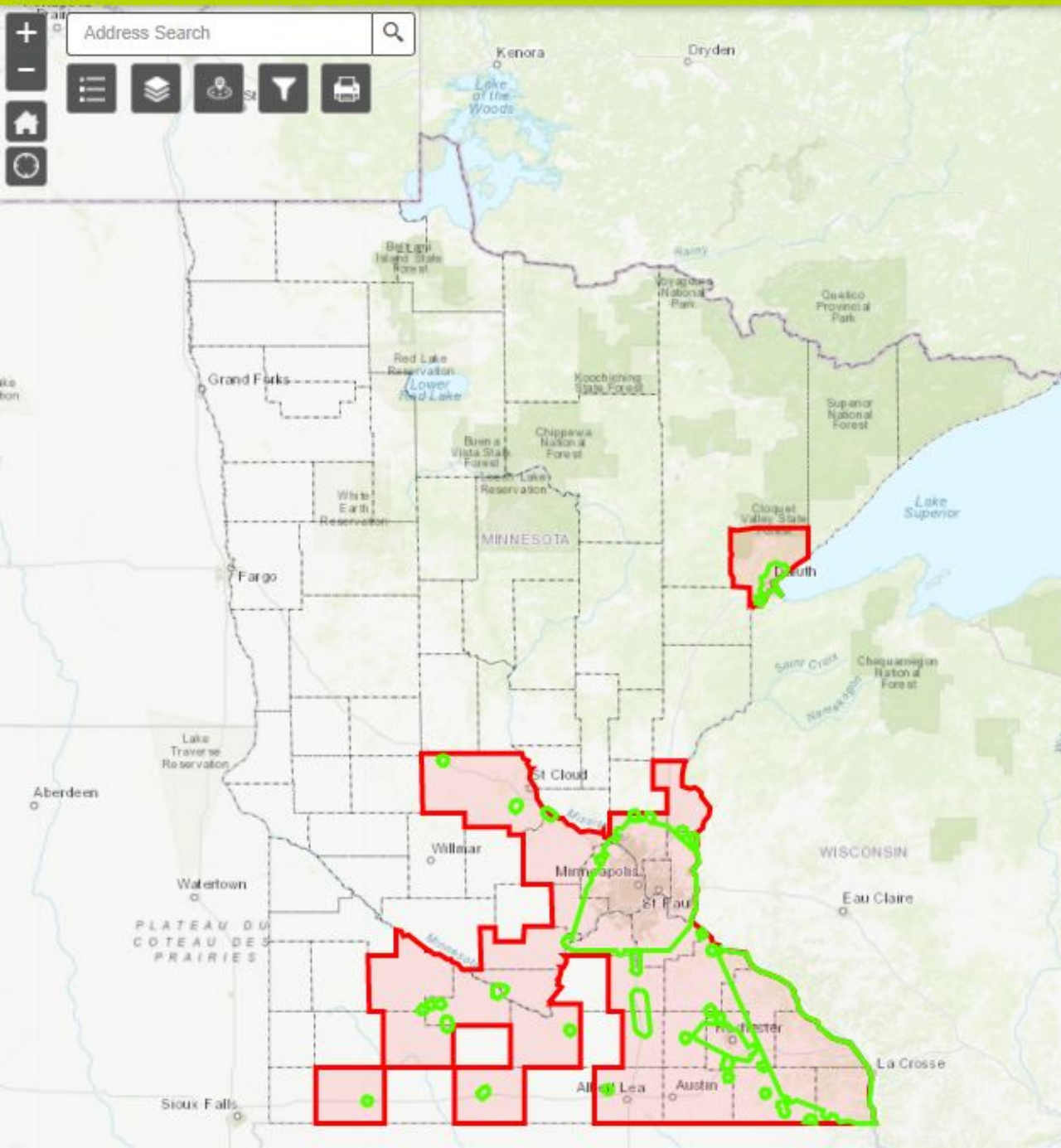
Why Manage for Emerald Ash Borer?

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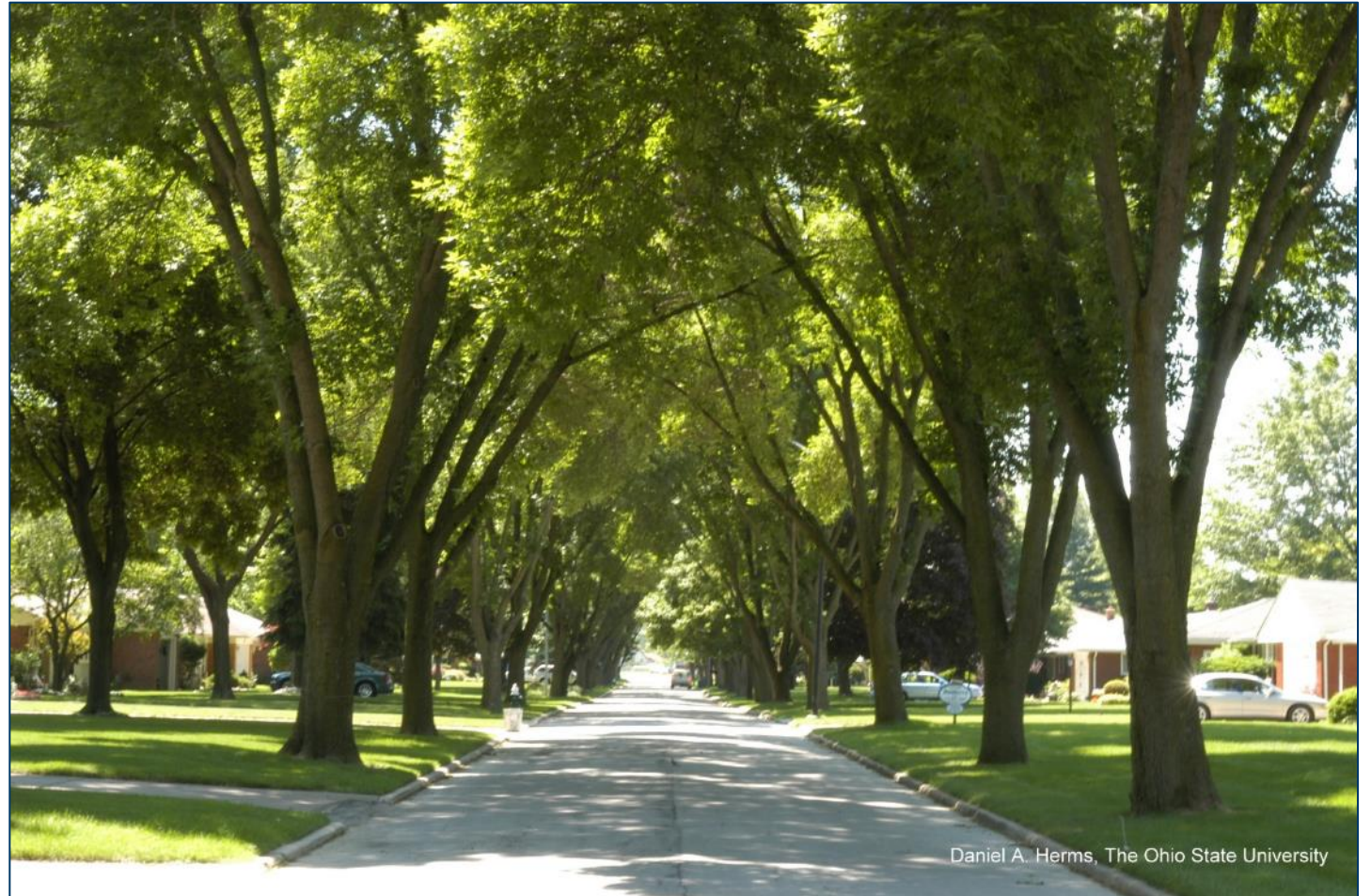
mda.state.mn.us/eab



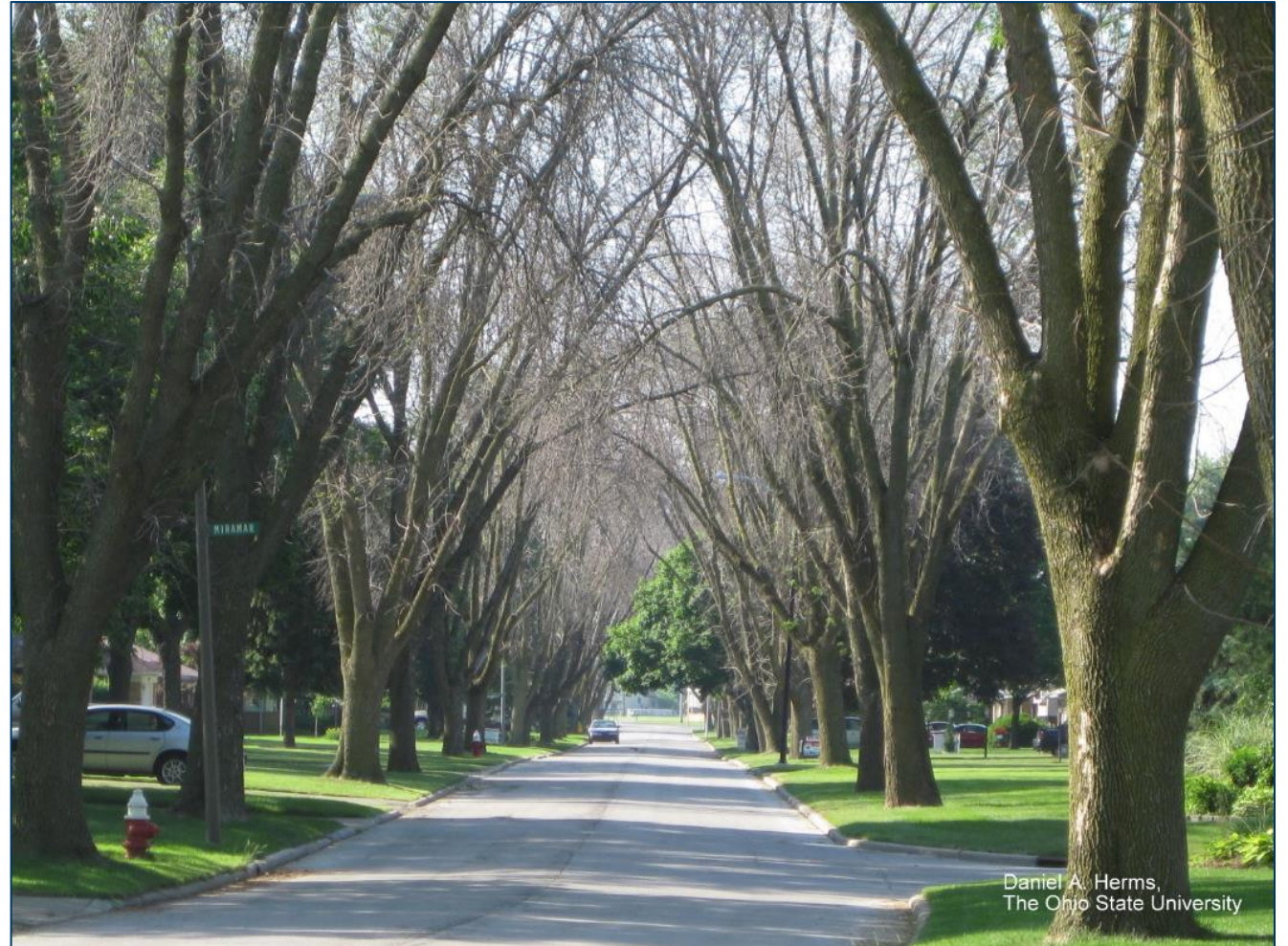
EAB Distribution

- 30 Counties with EAB infestations detected.
- Map available at www.mda.state.mn.us/eabstatus
- Data available for download at MN Geospatial Commons <https://gisdata.mn.gov/dataset/env-emerald-ash-borer>

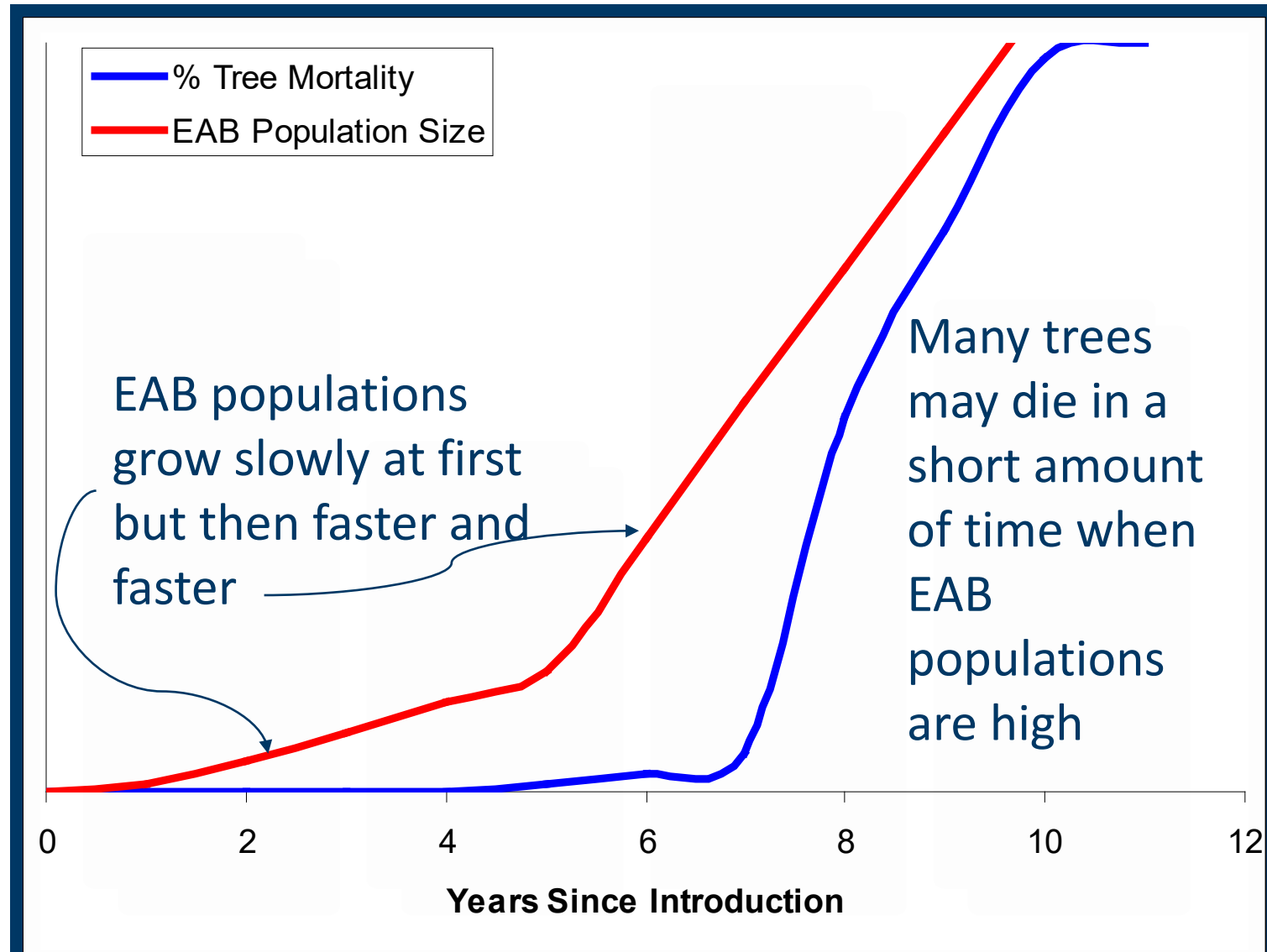
How Does EAB Kill Trees?



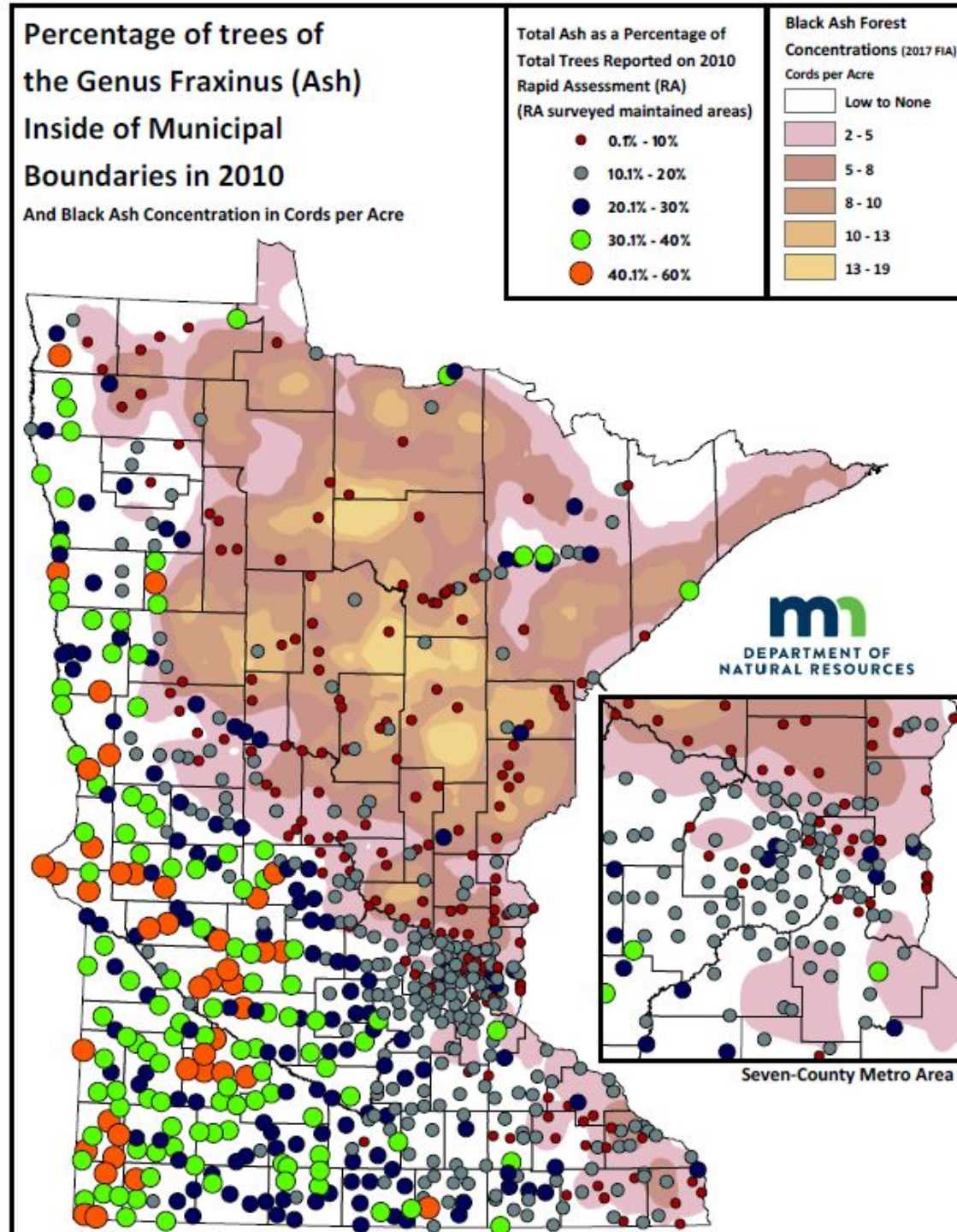
How Does EAB Kill Trees?



How Does EAB Kill Trees?



Ash Distribution



- Communities
 - 1-in-5 forest trees are ash
 - Up to 60% ash in some communities
- Forestland
 - Nearly 1 billion ash trees

MyTree Benefits



Tree 1: Ash (Fraxinus species)

Serving size: 15" dbh, Good condition

Carbon Dioxide (CO₂) Sequestered \$0.78

CO₂ absorbed each year 77.56 lbs

Storm Water \$36.66

Rainfall intercepted each year 1353 gal.

Air Pollution removed each year \$0.60

Ozone 3.32 oz

Nitrogen dioxide 0.57 oz

Sulfur dioxide 0.15 oz

Large particulate matter** 1.79 oz

Energy Usage each year* \$0.00

Electricity savings (A/C) 0.00 kWh

Fuel savings (NG, Oil) 0.00 therms

Avoided Emissions

Carbon dioxide 0.00 lbs

Nitrogen dioxide 0.00 oz

Sulfur dioxide 0.00 oz

Large particulate matter** 0.00 oz

Benefit are estimated based on USDA Forest Service research and are meant for guidance only: www.itreetools.org

*Positive energy values indicate savings or reduced emissions. Negative energy values indicate increased usage or emissions.

**is not greater than 10 microns

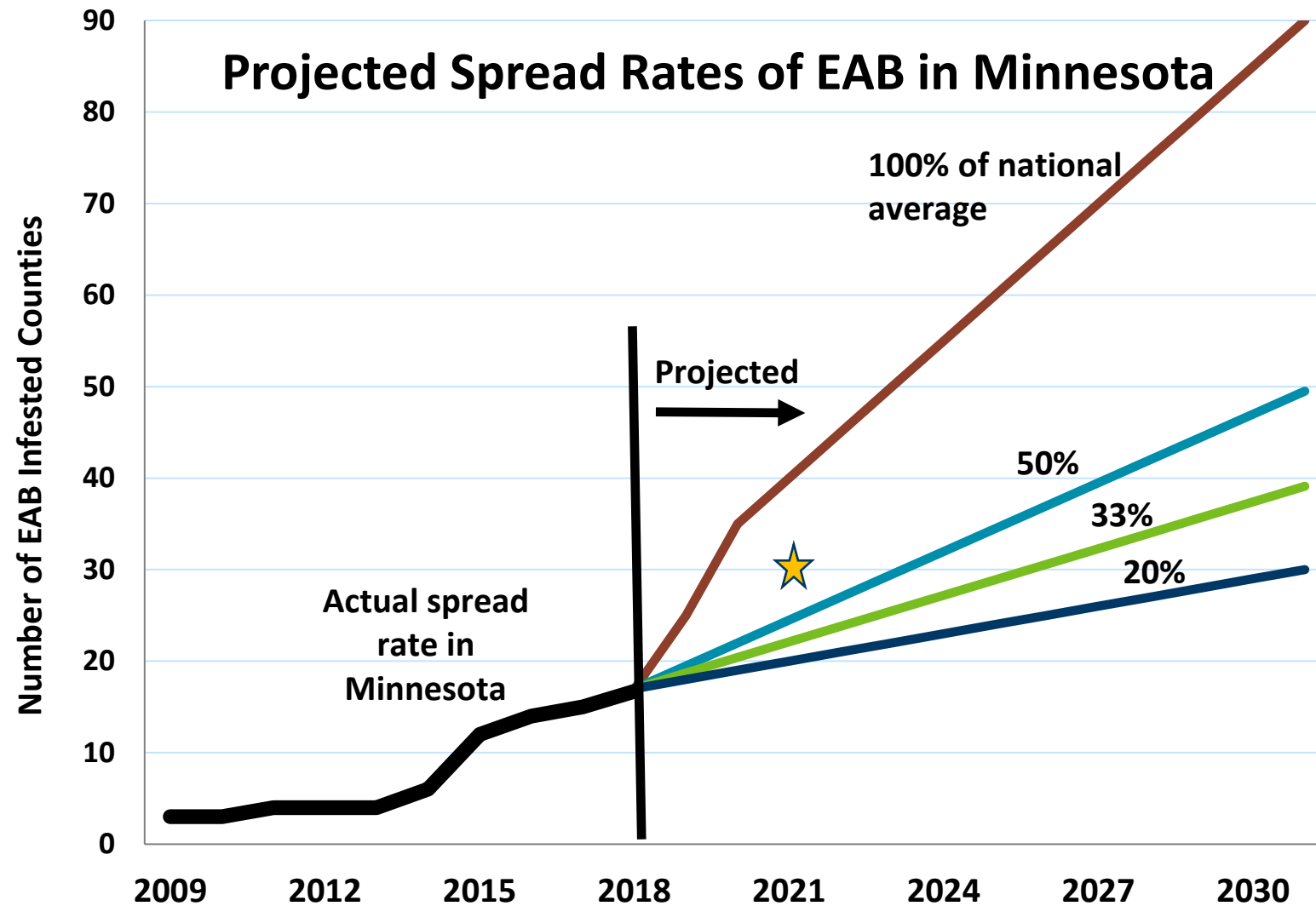
Benefits of Ash Trees

Size	Annual \$ Benefits	% from 2010 Survey
Small (~8" dbh)	~\$20	12%
Medium (~15" dbh)	~\$50	37%
Large (~24" dbh)	~\$80	35%
Super (~32" dbh)	~\$110	13%

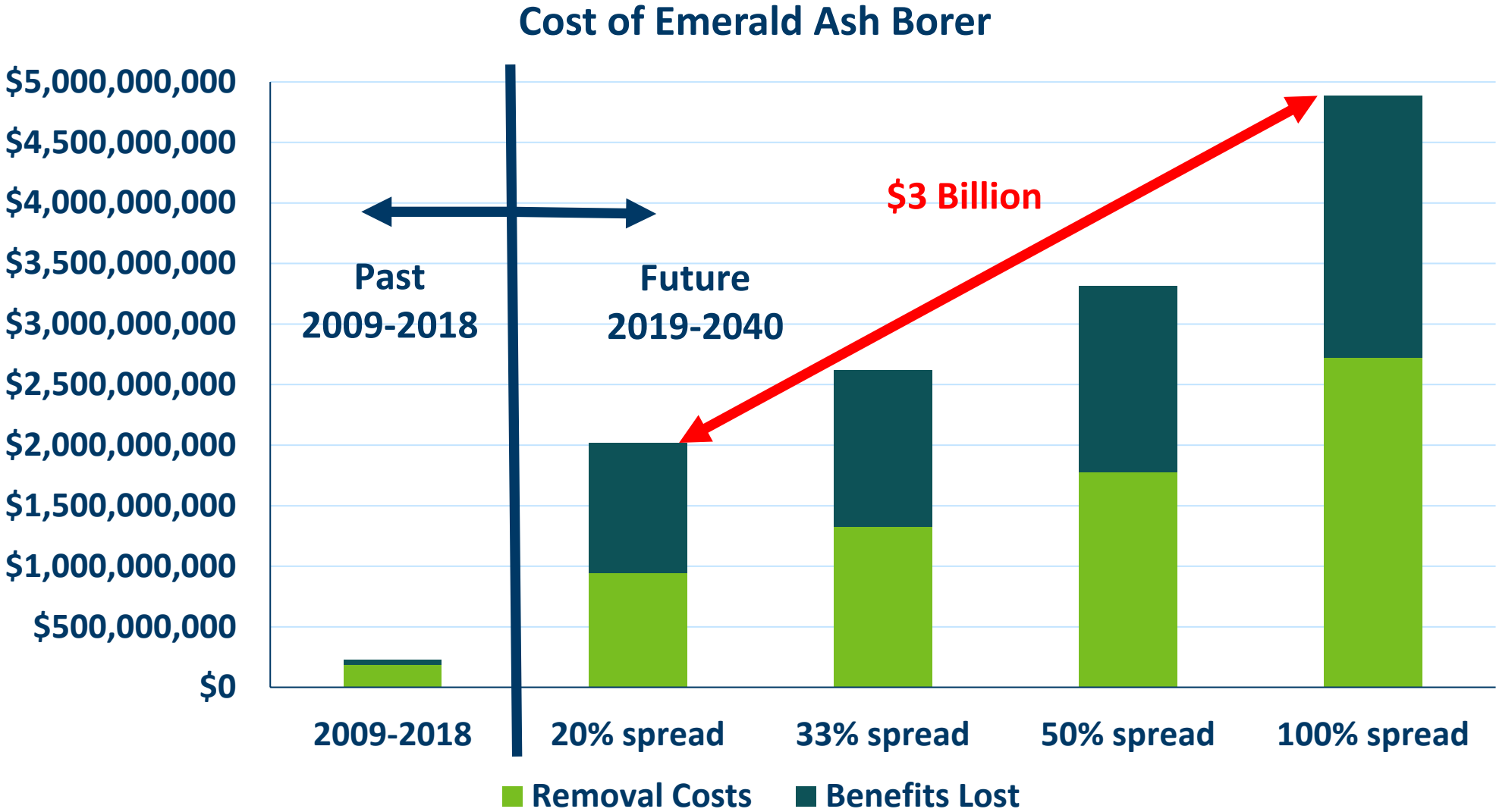
Size	Ann. cost to treat (\$7.50/dia. Inch / 2 years)	Cost to remove *
Small (~8" dbh)	~\$30	\$296
Medium (~15" dbh)	~\$56.5	\$690
Large (~24" dbh)	~\$90	\$1,104
Super (~32" dbh)	~\$120	\$2,464

* Includes stump grinding, from Sadof, et al. 2017

EAB in Minnesota

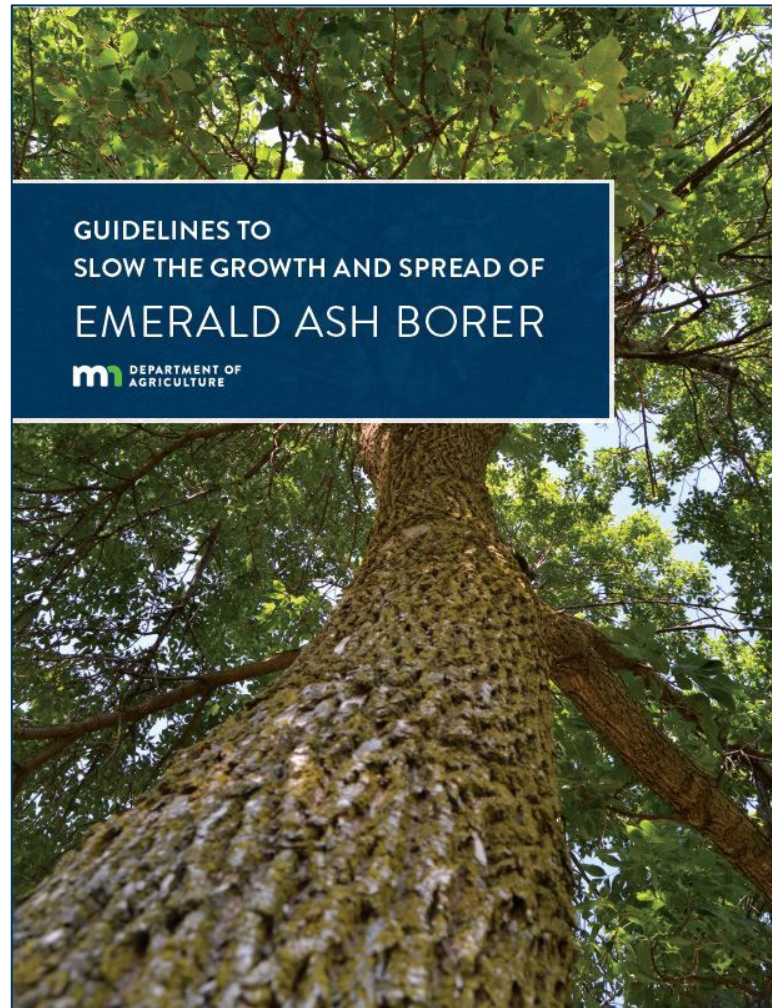


EAB in Minnesota



Management Guidelines

- Assists communities in understanding all aspects of managing EAB



CONTENTS	
GUIDELINES TO SLOW THE GROWTH AND SPREAD OF EMERALD ASH BORER	
Background	4
Planning	7
Inventory	10
Monitoring	12
Treatments	15
Removal/Sanitation.....	19
Wood Management/Utilization.....	22
Replanting	25
Biological Control	27
Closing	29
Appendices	
1: How to Confirm and Report EAB	30
2: Detection Methods.....	32
3: Winter and EAB	39
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United States Forest Service	
Emerald Ash Borer Management Guidelines 3	

Management Priorities

- **Minimize wood movement**
- **Safe disposal / utilization of wood**

- **Treat high value trees**
- **Sanitation**

- **Detecting and reporting infestations**

Heavily Infested Area



Uninfested Area

Solution

- Know what you have and your target
 - There are many options available, create a management plan that fits your City's goals
 - Dedicate funds for EAB tree removal and/or treatment
 - Communicate early and often with residents to gain buy-in

EAB Status >>>		Not Infested		Generally Infested		Heavily Infested	
Management Target >>>		Tree	EAB	Tree	EAB	Tree	EAB
Management Tactic							
Critical to all tactics	Planning	Green	Green	Yellow	Yellow	Red	Red
	Inventory	Green	Green	Yellow	Yellow	Red	Red
	Monitoring*	Dark Gray	Green	Dark Gray	Green	Dark Gray	Dark Gray
Communications – critical to all tactics	Treatments	Dark Gray	Dark Gray	Dark Gray	Green	Dark Gray	Dark Gray
	Removals/Sanitation**	Green	Dark Gray	Yellow	Green	Red	Yellow
	Wood management Utilization	Green	Green	Yellow	Yellow	Red	Red
	Replanting	Green	Dark Gray	Green	Dark Gray	Green	Dark Gray
	Biological Control	Dark Gray	Dark Gray	Dark Gray	Green	Dark Gray	Yellow

- Green – a good time to utilize this tactic
- Yellow – getting late to implement this tactic
- Red – last chance before opportunity is lost
- Dark Gray – not appropriate tactic at this time

Thank You!

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Management Tactics			Elk River	Rochester	Apple Valley	Lake City	Rushford
Management Target			EAB	EAB	EAB	EAB	Tree
EAB Status			Not Infested	Generally Infested	Generally Infested	Generally Infested	Generally Infested
Tree Inventory			All public, no private	All public, no private	All public, no private	All public, no private	Public ash
Shade Tree Pest Ordinance			No	Yes	Yes	Yes	No
Yearly Monitoring			As needed basis	Yes, winter	Yes, winter	Yes, winter	Yes, winter
Disposal Site			City compost site	Private site within City	County compost sites	City compost site	City compost site
Ash Utilization			Mulch	Milled lumber for Park projects, mulch, energy plant	Mulch, energy plant	Energy plant, milled lumber for Park projects	Sold to logging firm, firewood for residents
Replanting			Replace every public ash tree removed	Replace every public ash tree removed	No public boulevard, City runs tree sale	Replace every public ash tree removed	Where appropriate
Biological Control Site			Undetermined	Undetermined	No	Undetermined	No
Ash Tree Removals	Not infested	Public boulevard	No	Yes, poor quality or city project conflict	Yes	Yes	No
		Public park landscape	Yes, hazard trees prioritized	Yes	Yes	Yes	No
		Public natural forest	Yes, as time allows, prioritize hazards	Yes	Not yet	No	No
	EAB Infested	Public boulevard	N/A	Yes, unless treated	Yes	Yes	Yes
		Public park landscape	N/A	Yes, unless treated	Yes	Yes	Yes
		Public natural forest	N/A	Yes, chipped in place	Not yet	Yes	No
		Private	N/A	Within 100 feet of any developed parcel	Yes	Yes	No
Insecticide Treatments	Public boulevard	Residents can treat public trees	Yes, good condition. Residents can treat with city permit.	Yes	No	No	
	Public park landscape	Yes, based on tree condition	Yes, based on tree condition	Yes	No	No	
	Public Natural forest	No	No	No	No	No	
	Private – not infested	Seeking grant funds for a program	City licensed contractor	Residents receive City contracted rate	Yes	Yes	
	Private – lightly infested	N/A	Yes residents can treat in place of removal	Yes, if the tree appeared healthy the previous summer	Yes	Yes	