

# **Efficacy of Emerald Ash Borer Sampling Methods and Application to Management**



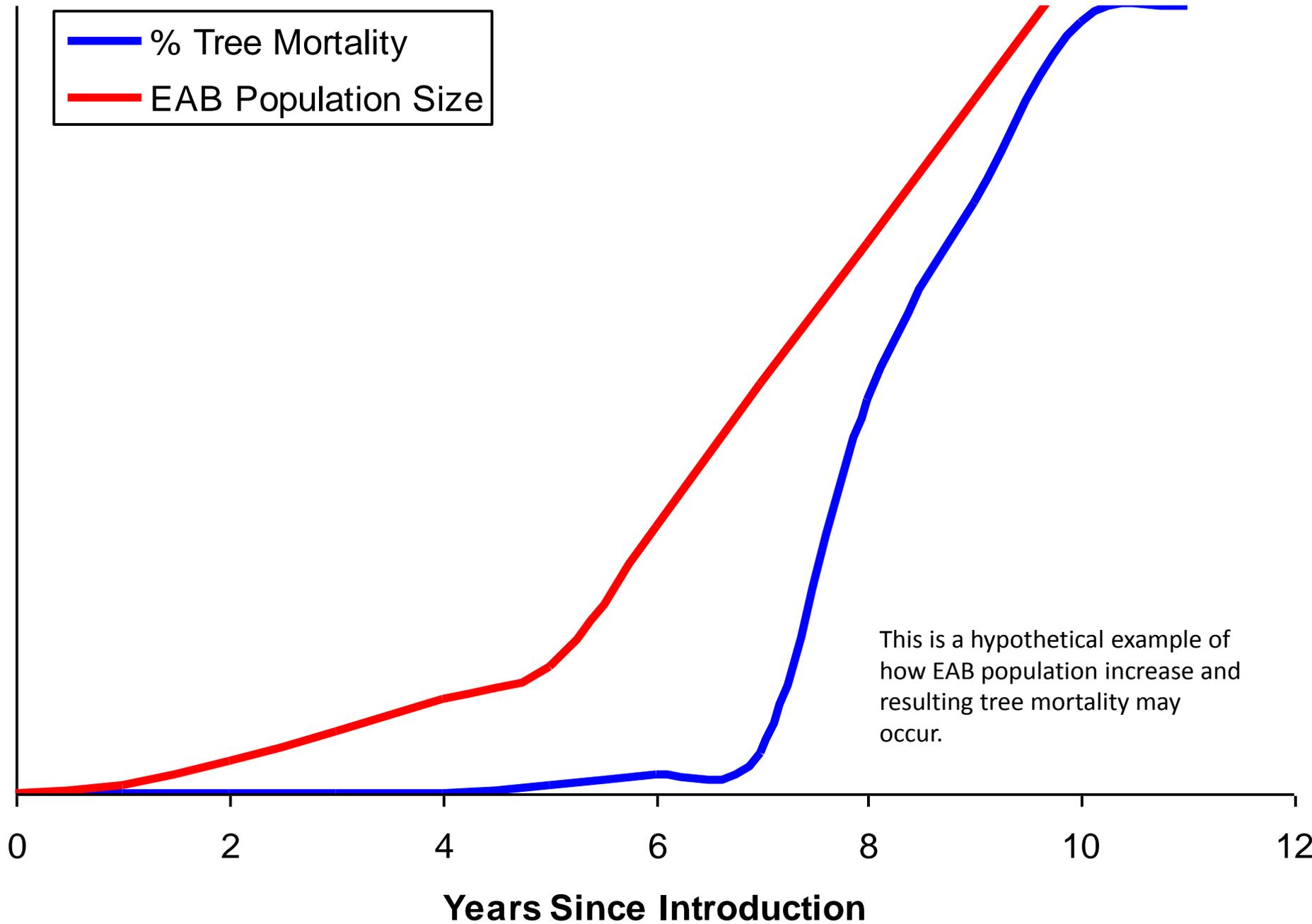
Funding from Environment and Natural Resources Trust Fund

### **Project Partners**

- Brian Aukema – University of Minnesota
- Rob Venette – US Forest Service
- William Martin - MDA
- Chris Mallet - MDA

### **Contributors**

- Many MDA Staff
- Great River Bluffs State Park – Rick Samples, Shawn Fritcher
- Fort Snelling State Park – Larry Peterson, Dave Felleon, Anton Benson
- Minnesota Conservation Core
- Cities of Duluth, Shoreview, Roseville, St Paul, Minneapolis



This is a hypothetical example of how EAB population increase and resulting tree mortality may occur.



**Sanitation**



**Insecticides**

David Cappaert, Michigan State University



**Biological Control**

## EAB Management

Sanitation

Insecticides in infested  
areas

Biological control

## Forest Management

Preemptive removal

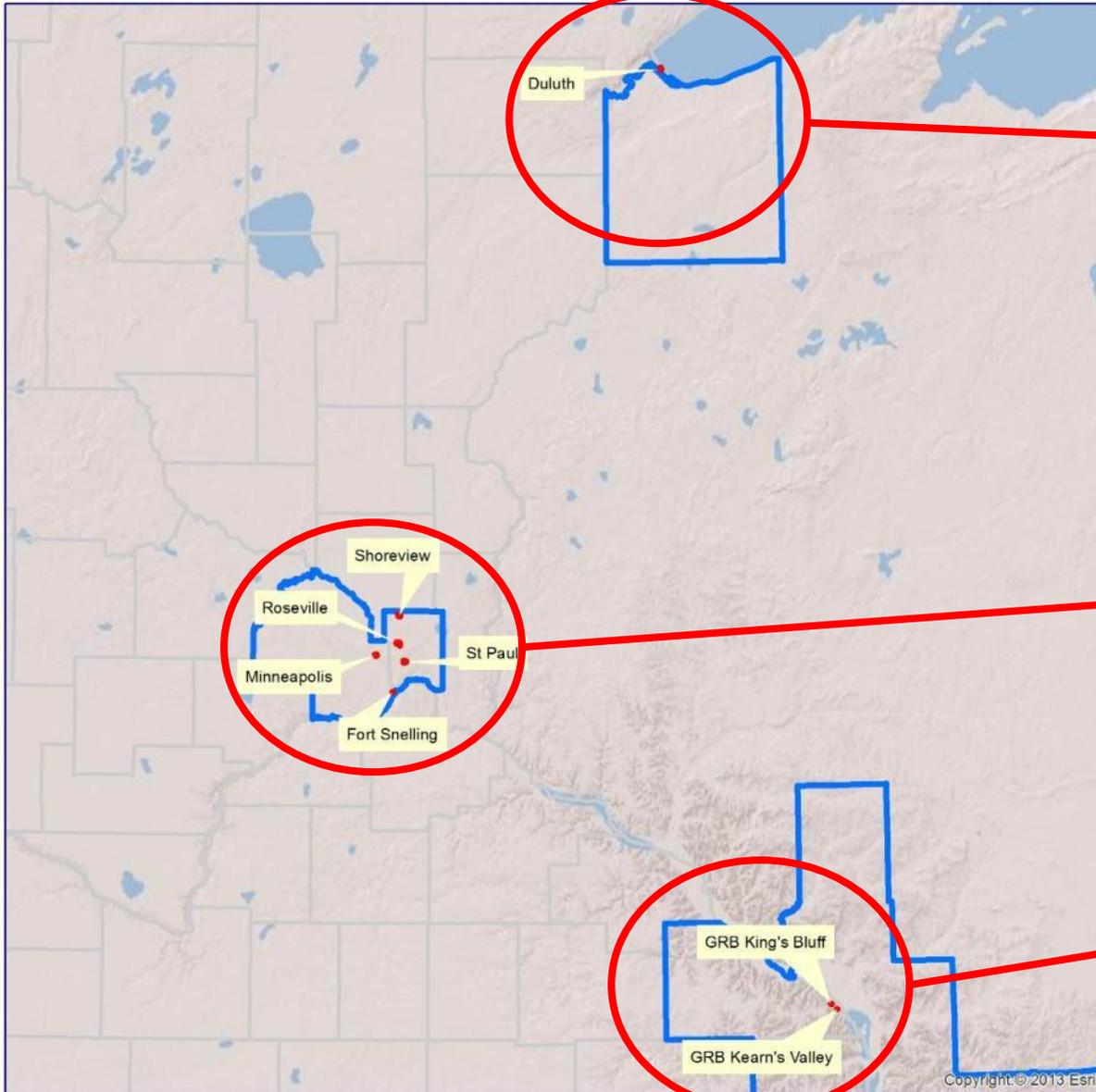
Preemptive insecticide  
use



- **Efficiency of survey techniques**  
**Efficacy vs cost**
- **Utility of survey for management**  
**Is it worth the effort?**

# EAB Detection Study Sites

-  Study Areas
-  EAB Quarantine

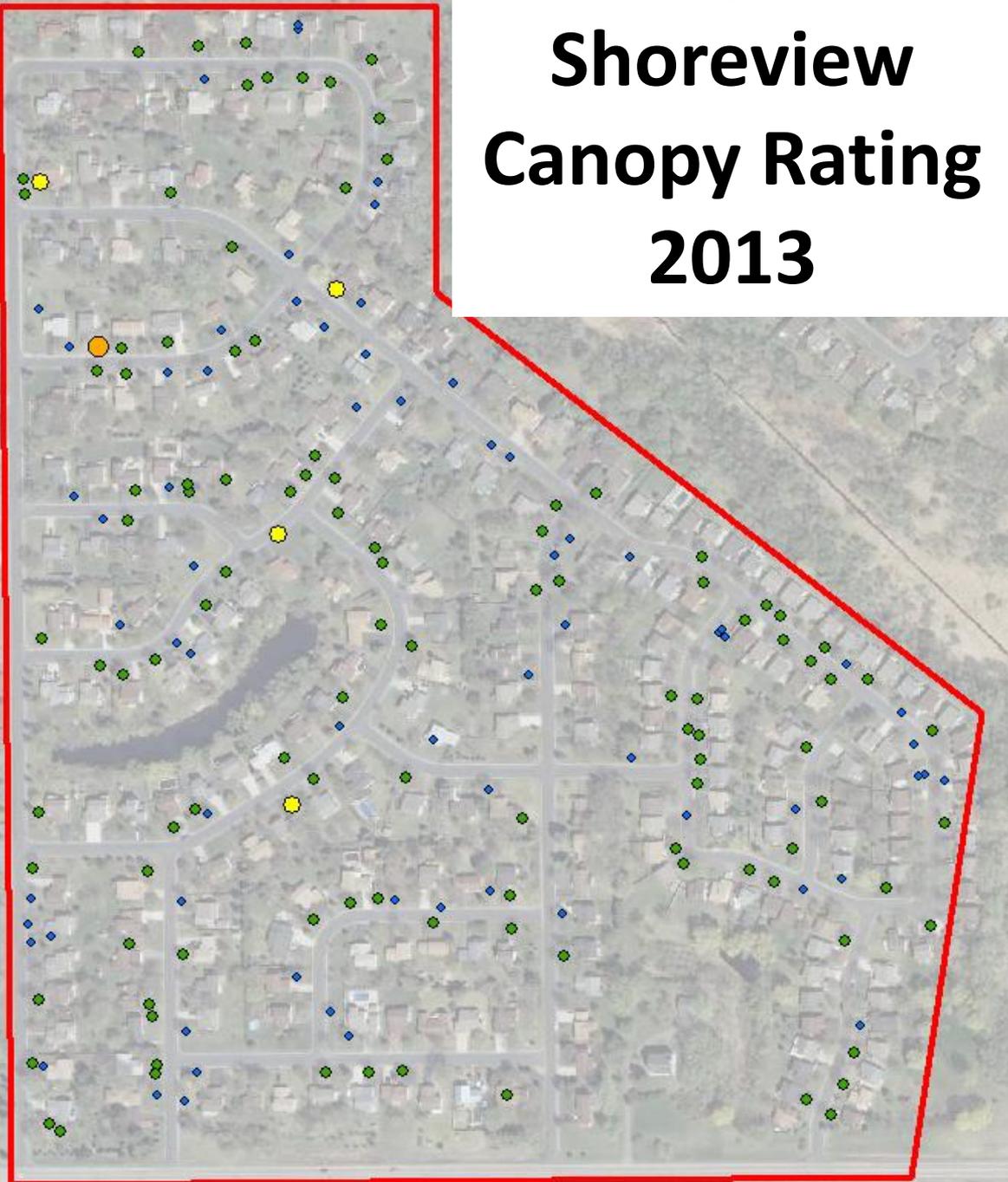


**No EAB?**

**Moderate  
to low EAB**

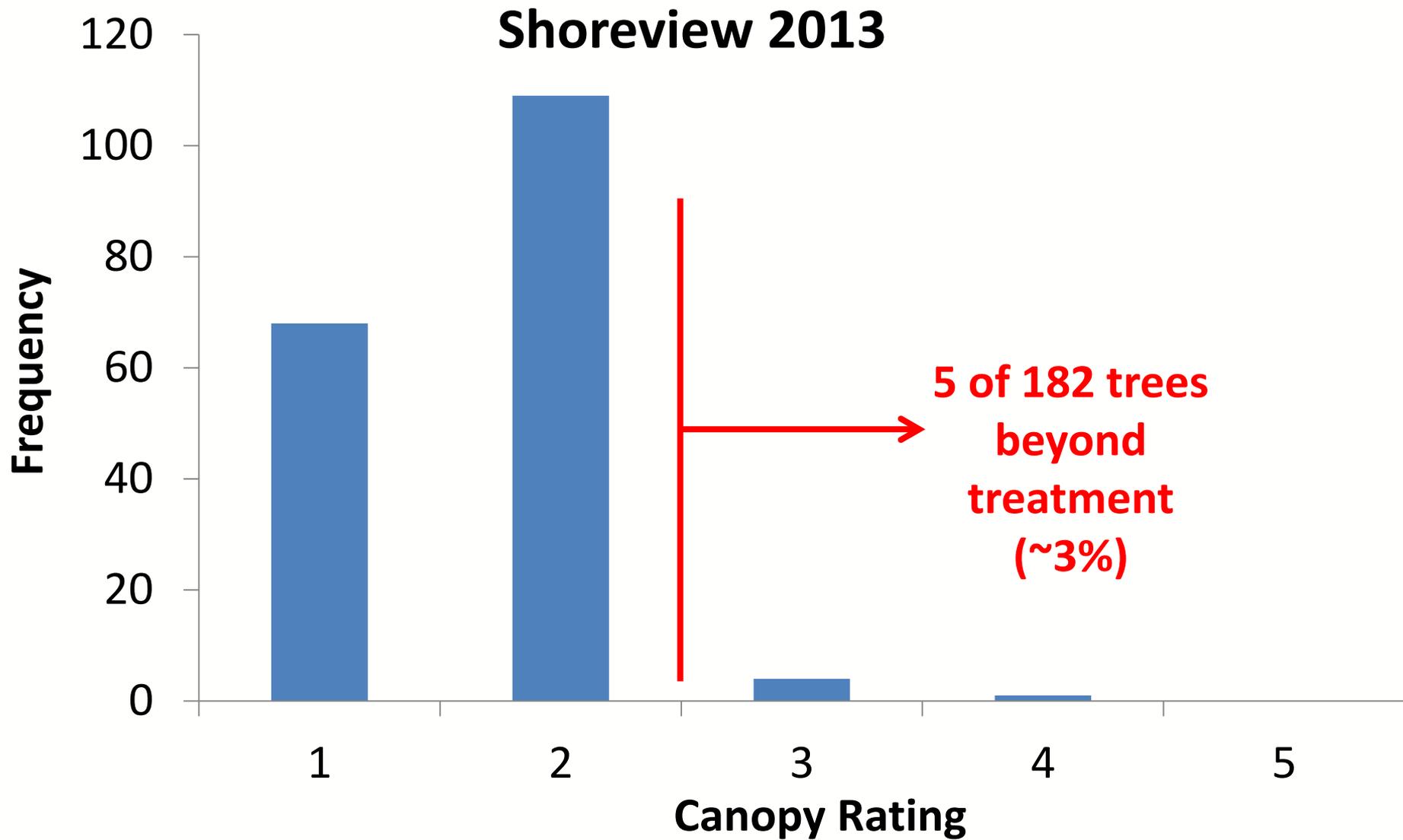
**Lots of EAB**

# Shoreview Canopy Rating 2013

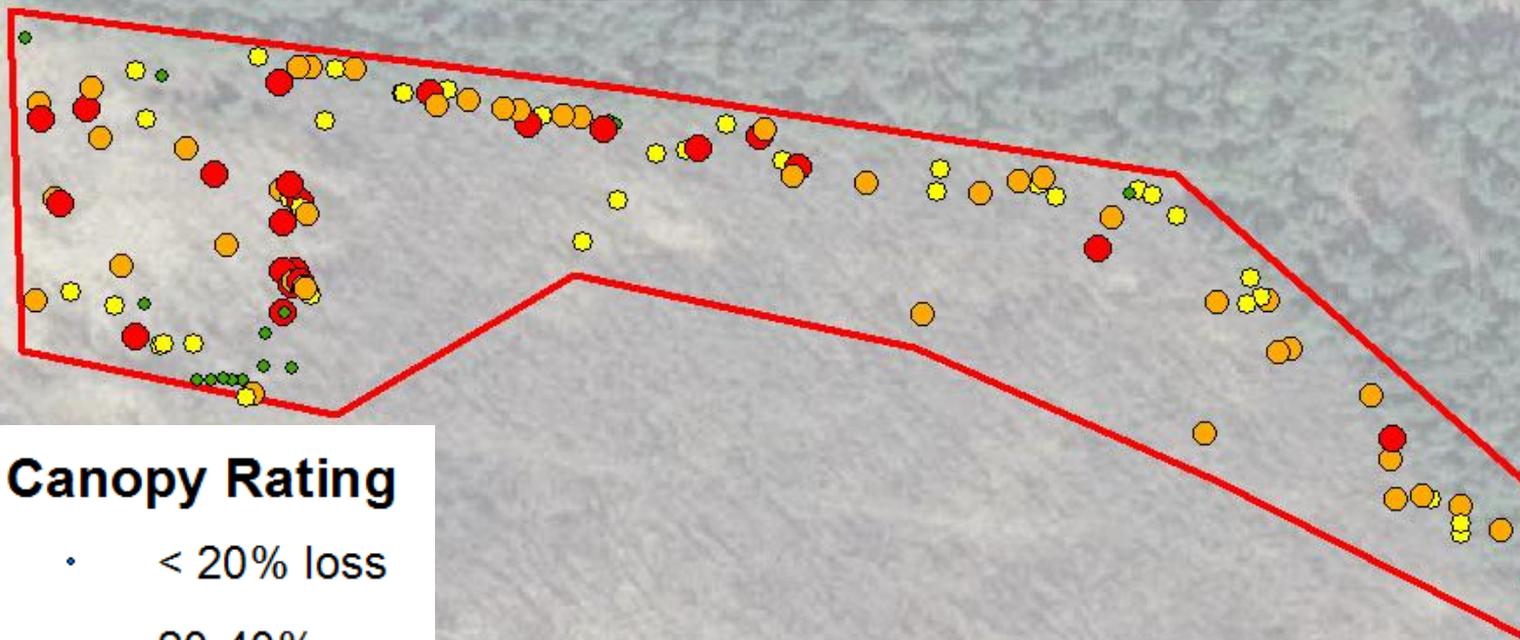


## Canopy Rating

- < 20% loss
- 20-40%
- 40-60%
- 60-80%
- > 80%



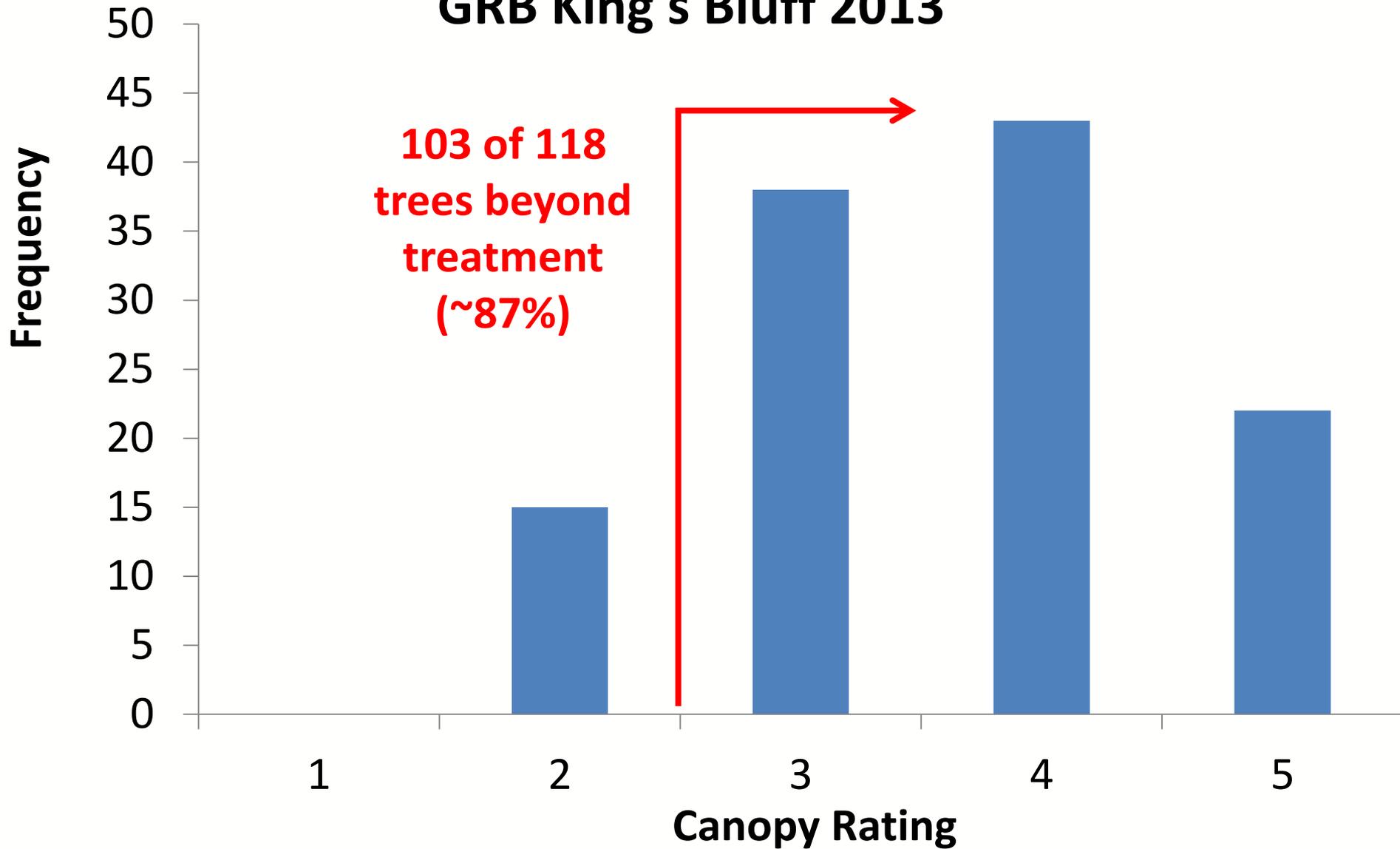
# GRB – King's Bluff Canopy Rating 2013



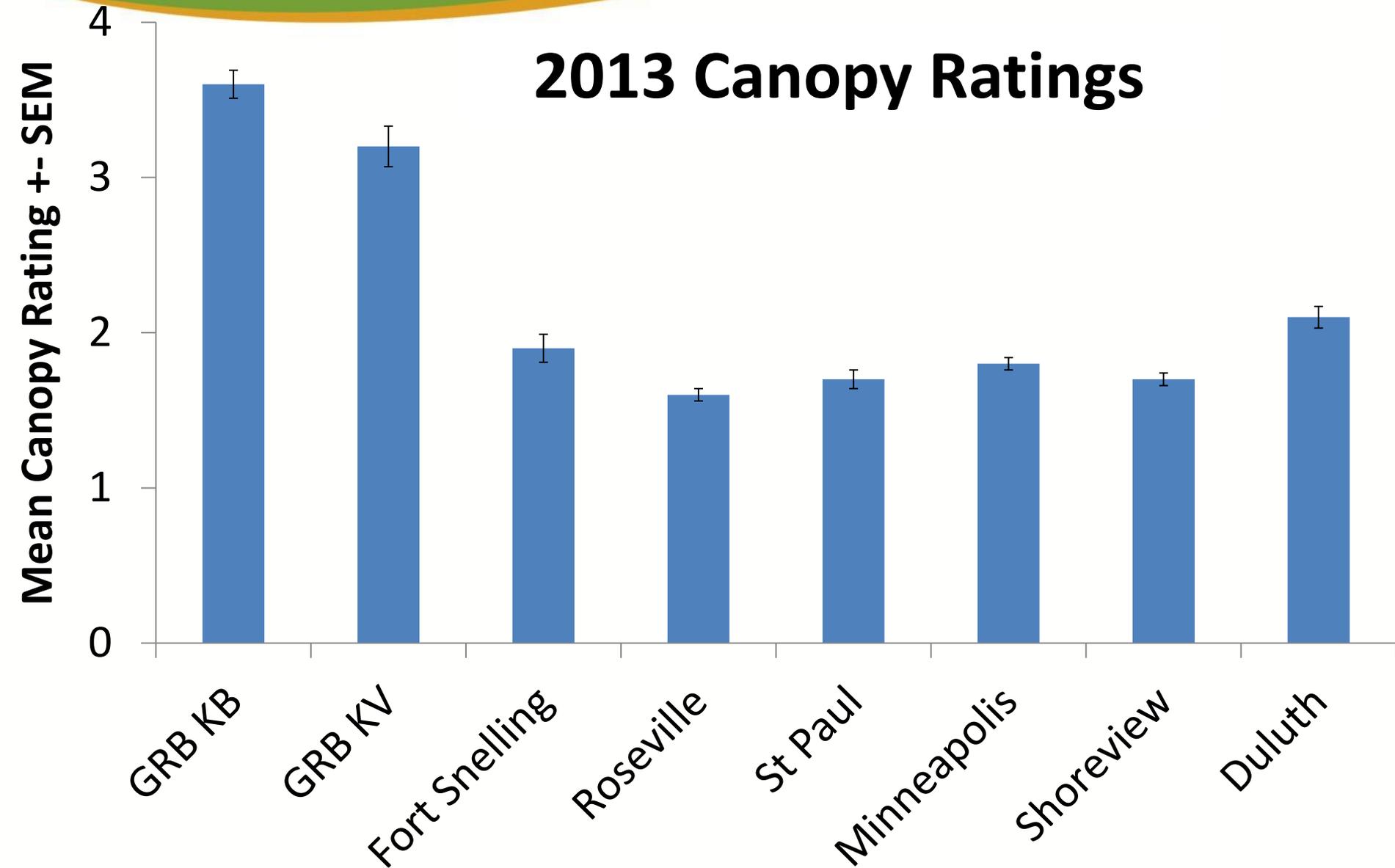
## Canopy Rating

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- 40-60%
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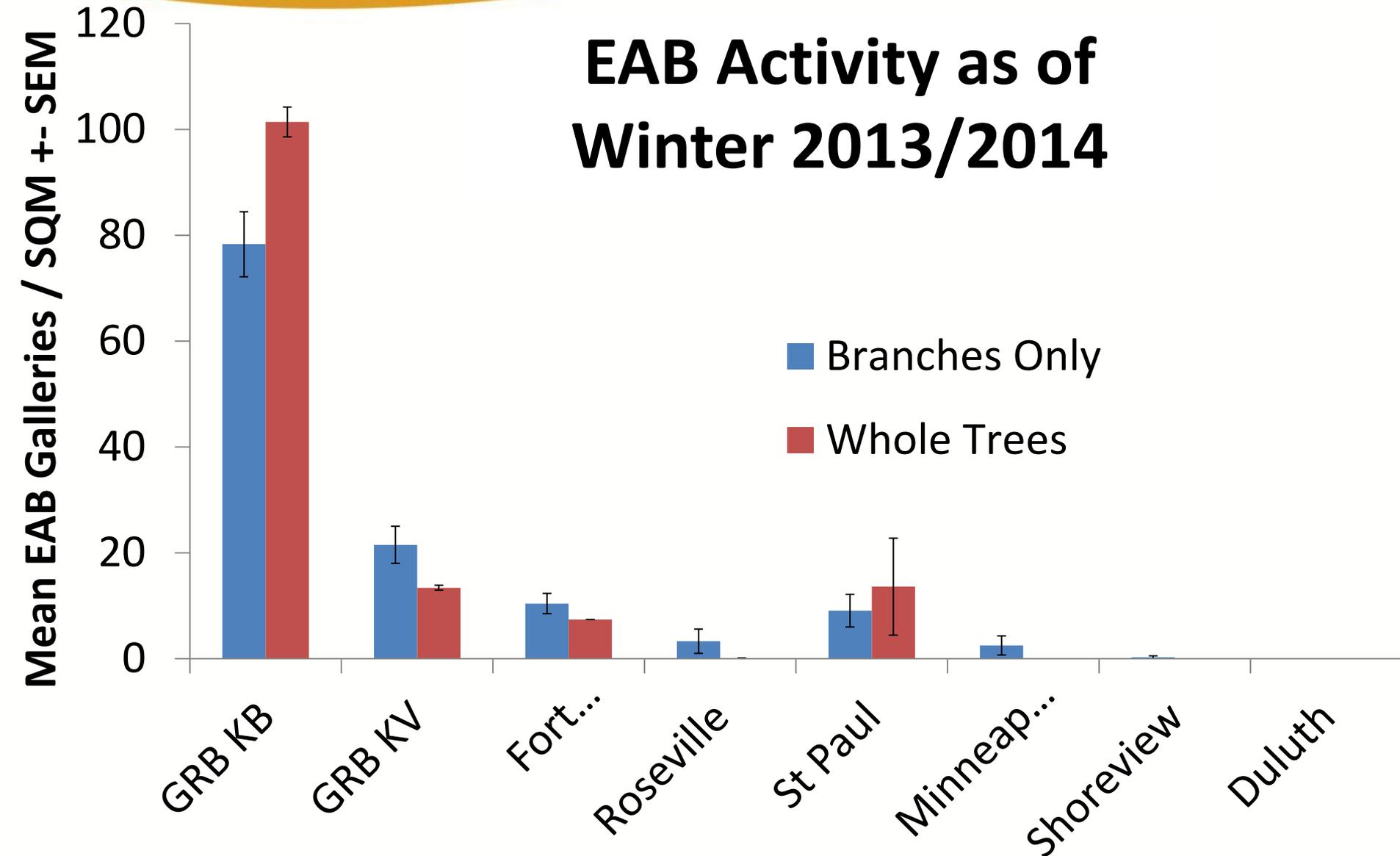
## GRB King's Bluff 2013

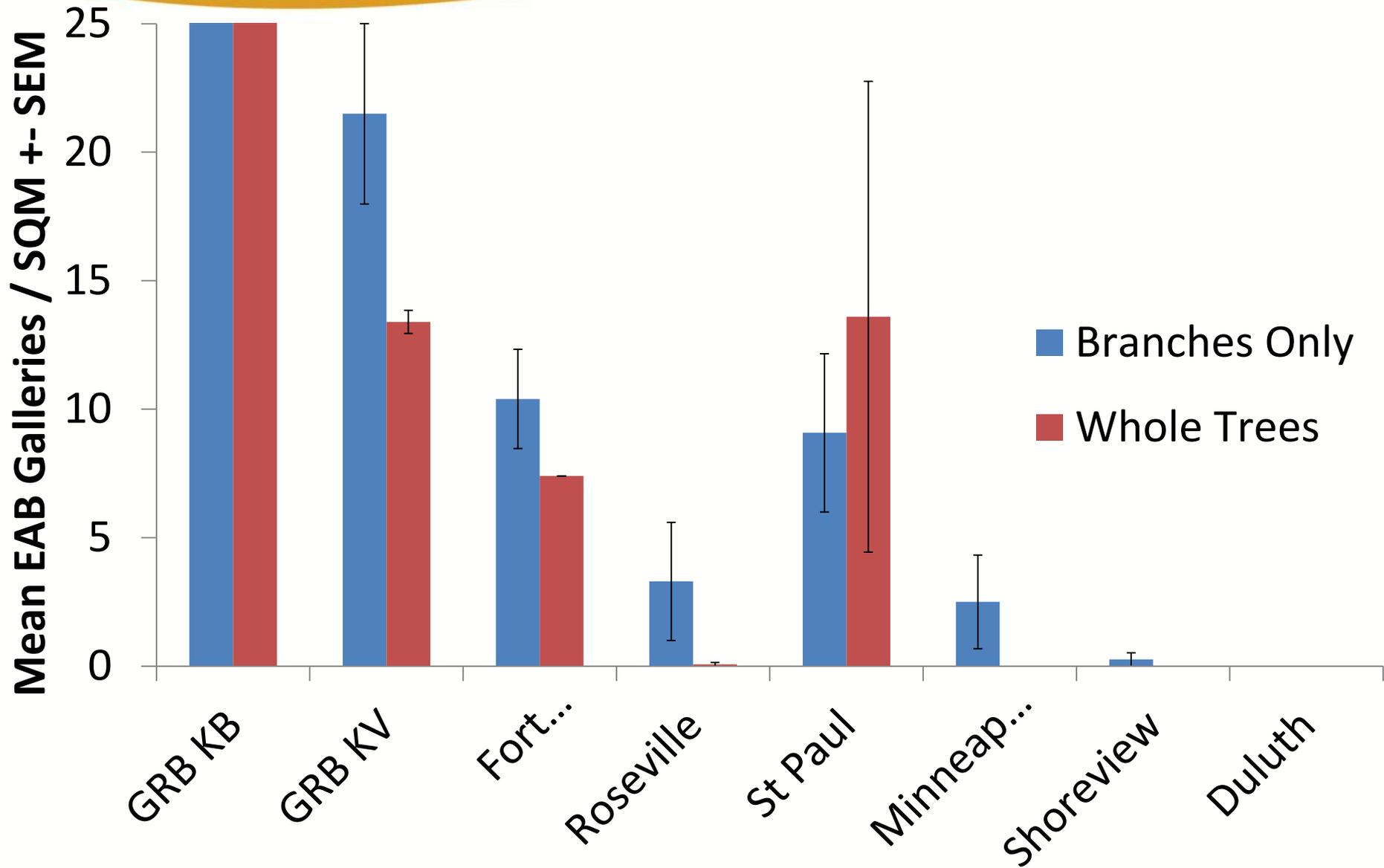


## 2013 Canopy Ratings

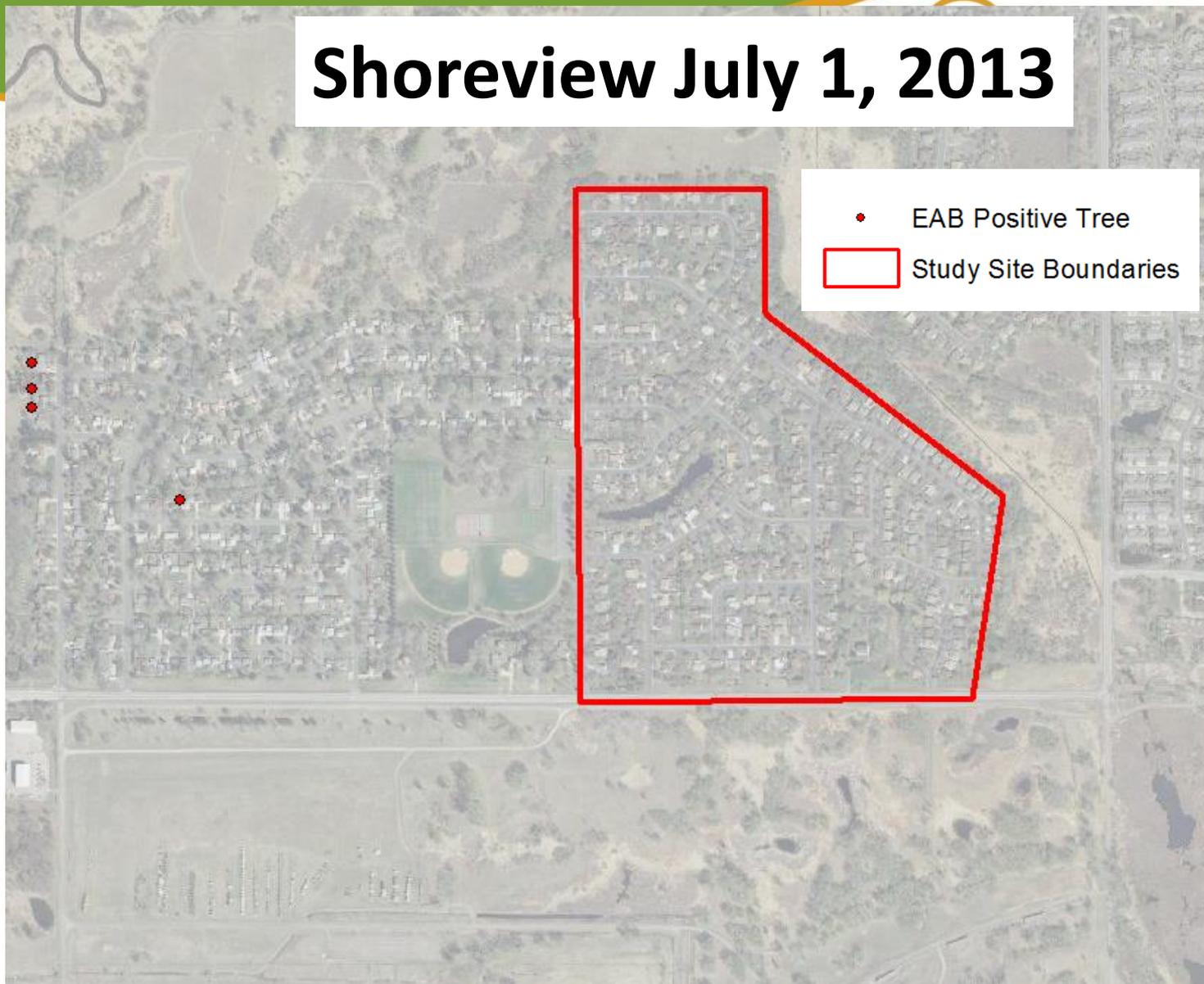


# EAB Activity as of Winter 2013/2014





# Shoreview July 1, 2013



# Shoreview

Department  
ture

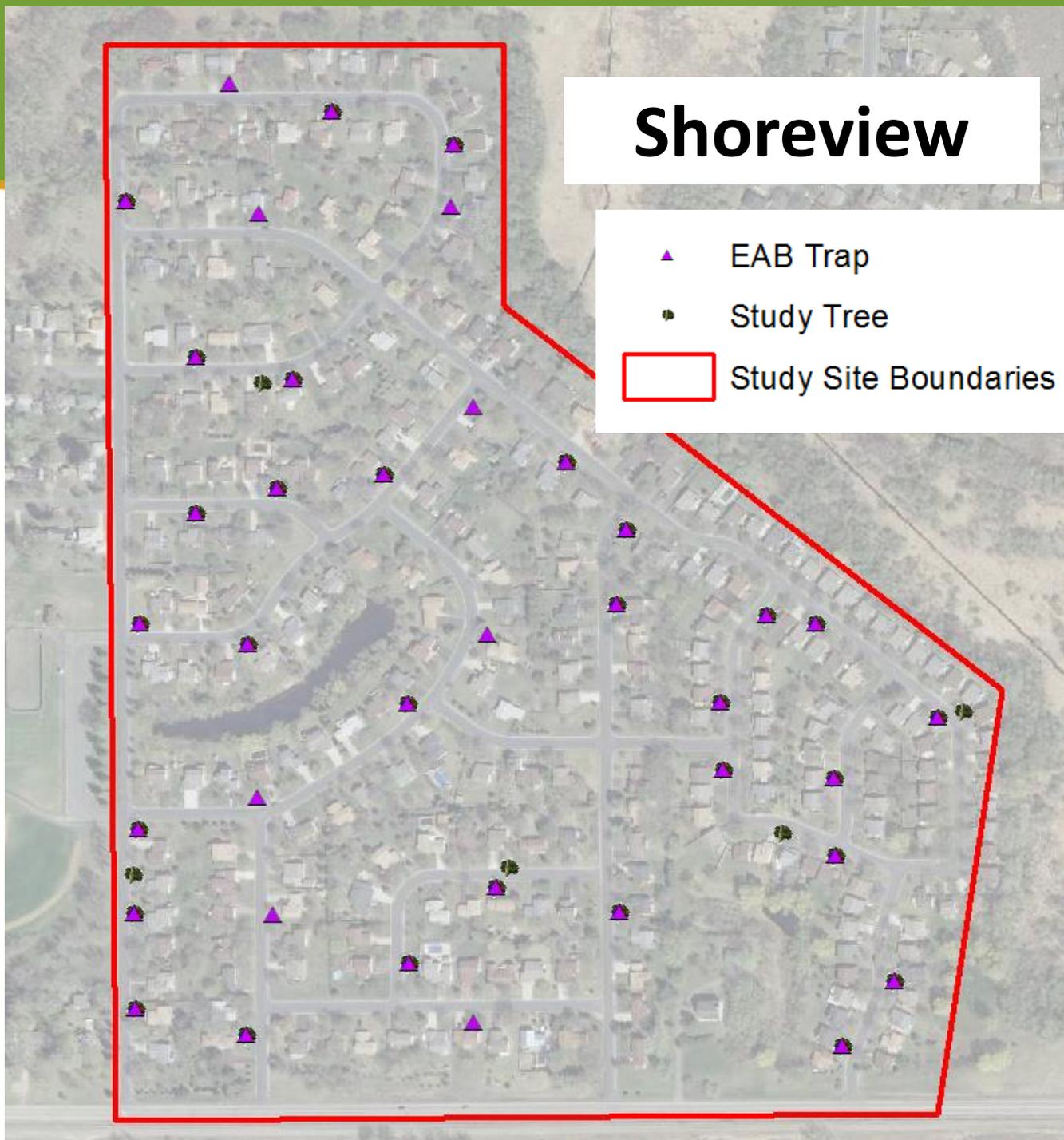
• Study Tree

□ Study Site Boundaries



# Shoreview

- ▲ EAB Trap
- Study Tree
- Study Site Boundaries



## Visual Assessment

- 3 people independently evaluating each tree
- Positive if 2 of 3 scored the tree as infested or suspect



**POSITIVE**

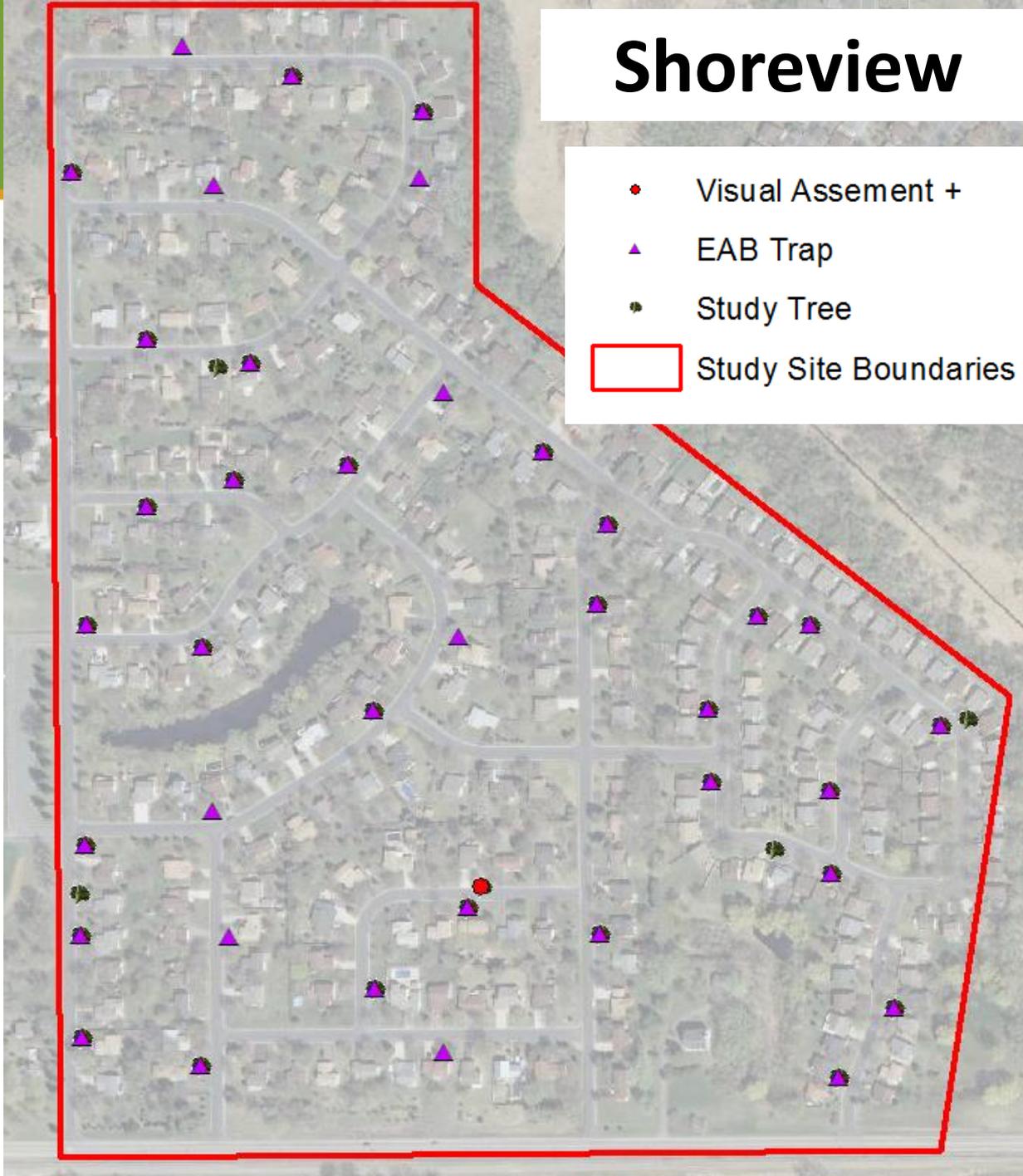


**SUSPECT**

# Shoreview

ta Department  
culture

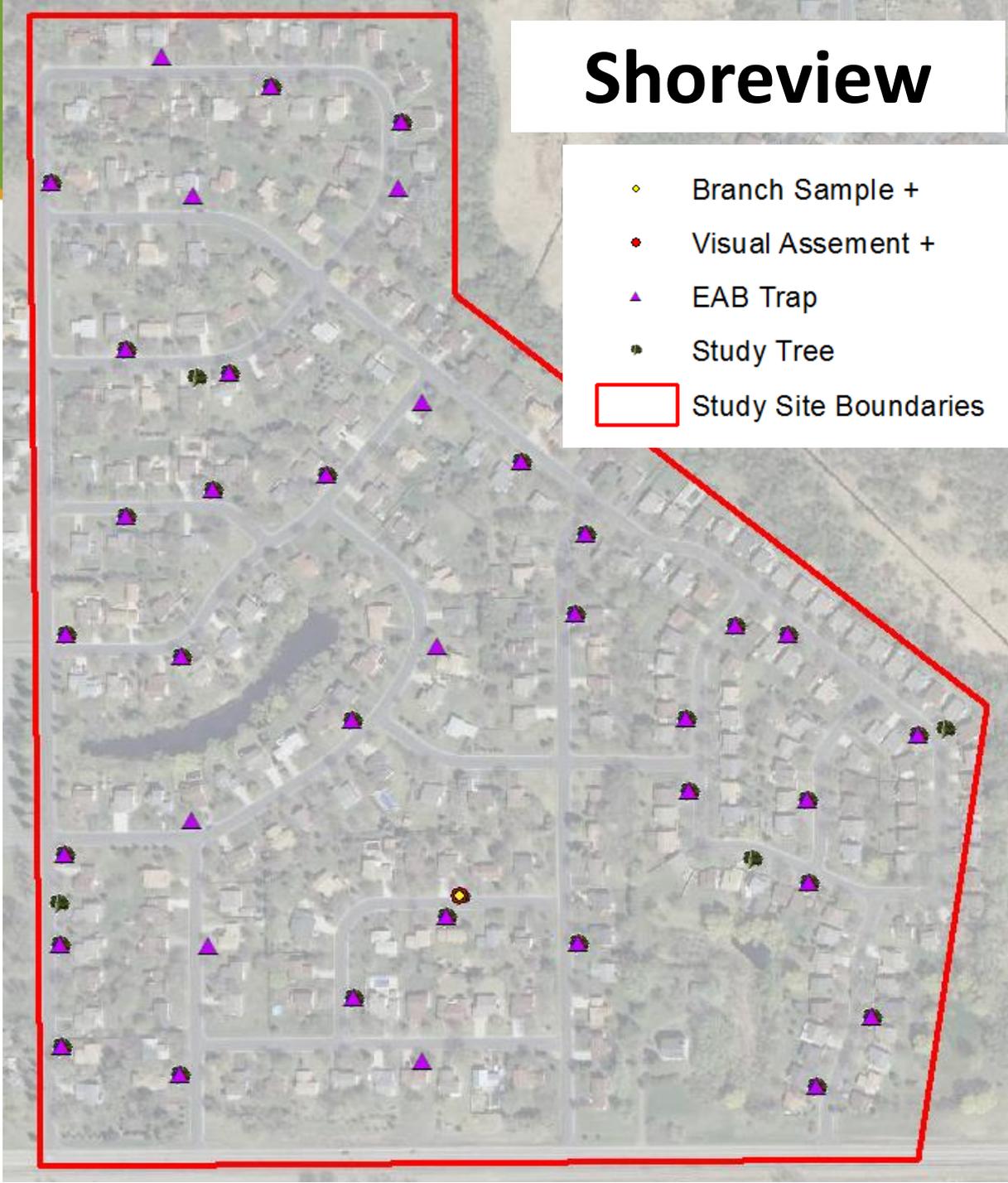
- Visual Assessment +
- ▲ EAB Trap
- Study Tree
- Study Site Boundaries



# Shoreview

ota Department  
culture

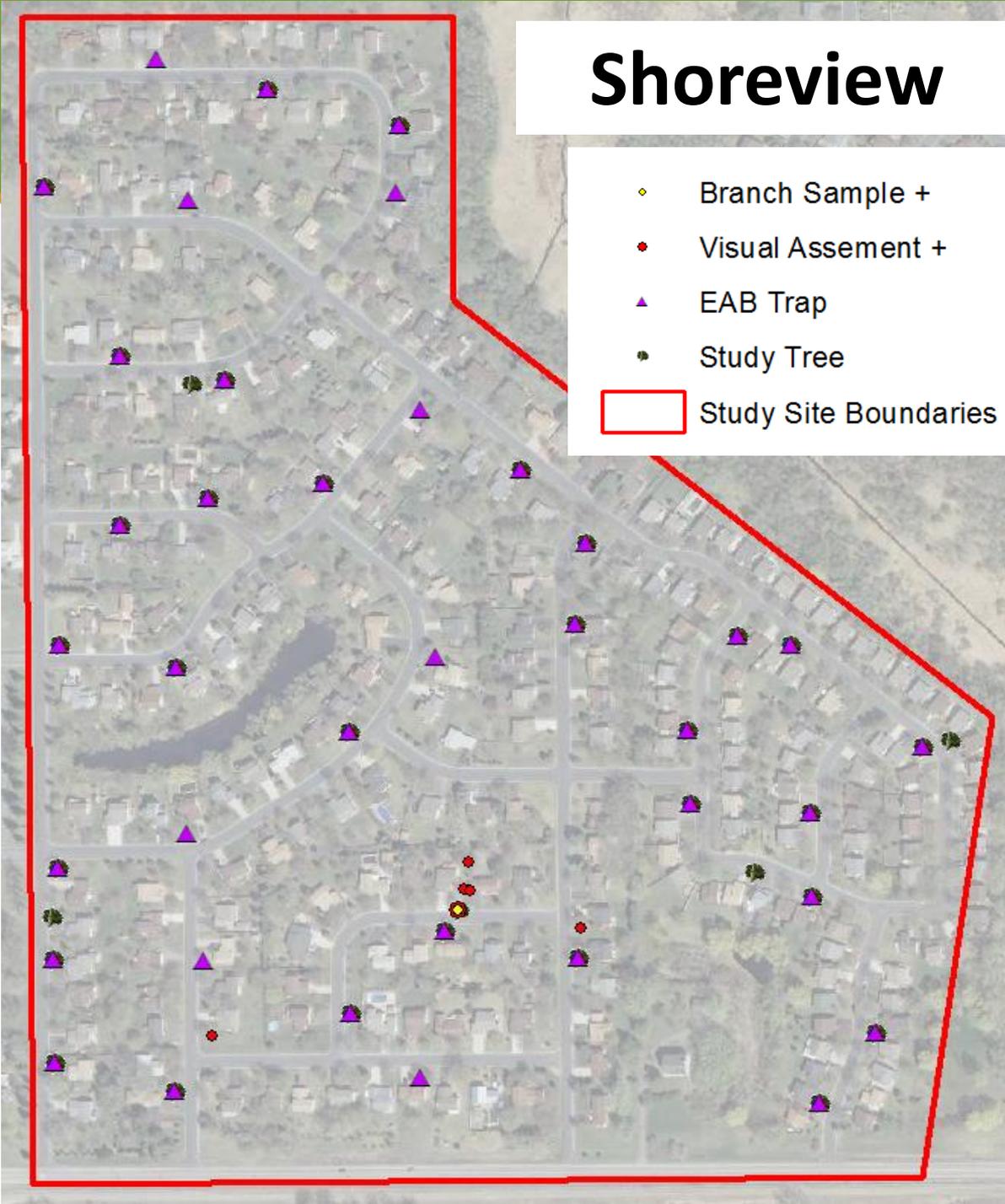
- ◆ Branch Sample +
- Visual Assessment +
- ▲ EAB Trap
- Study Tree
- Study Site Boundaries



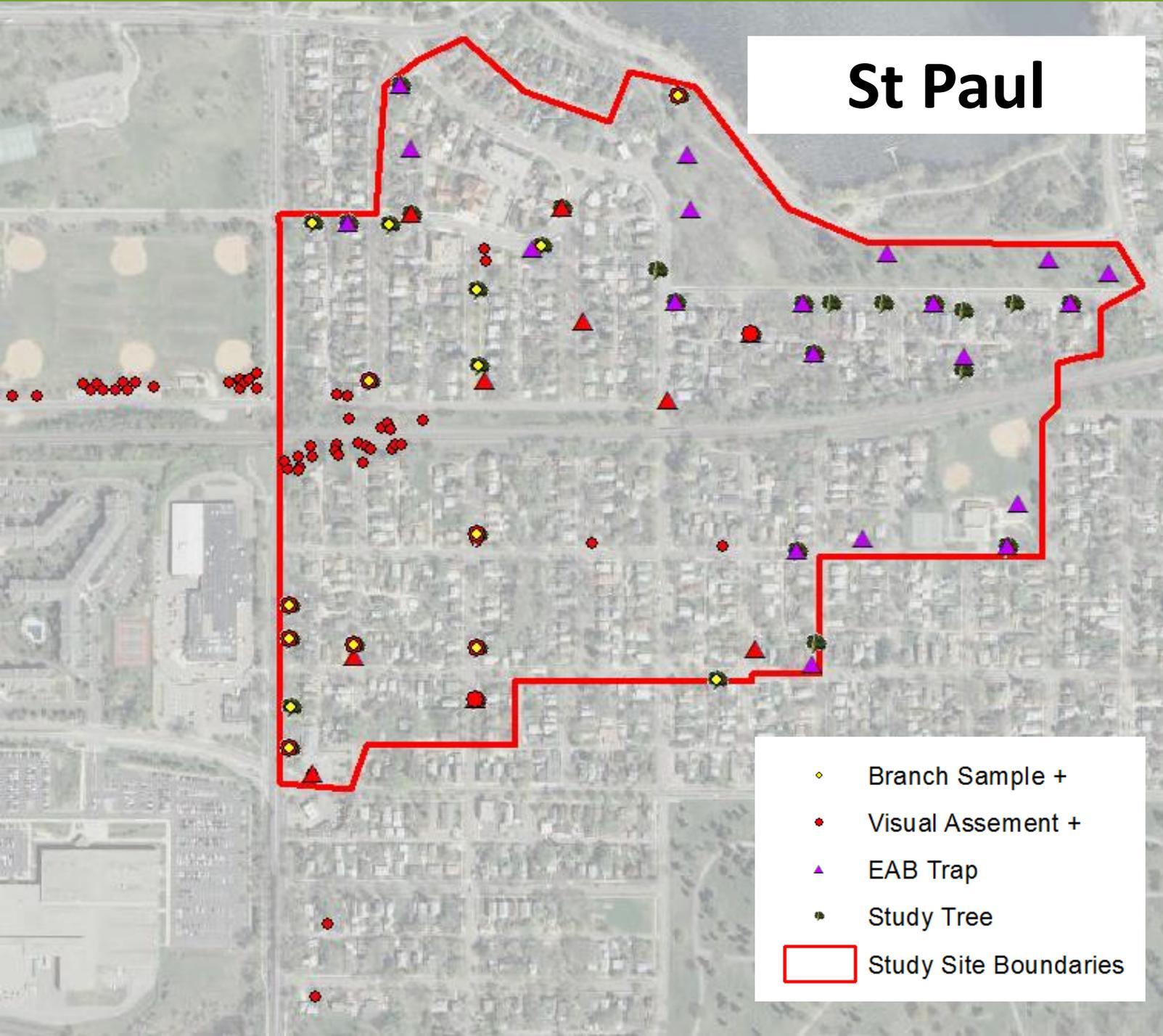
# Shoreview

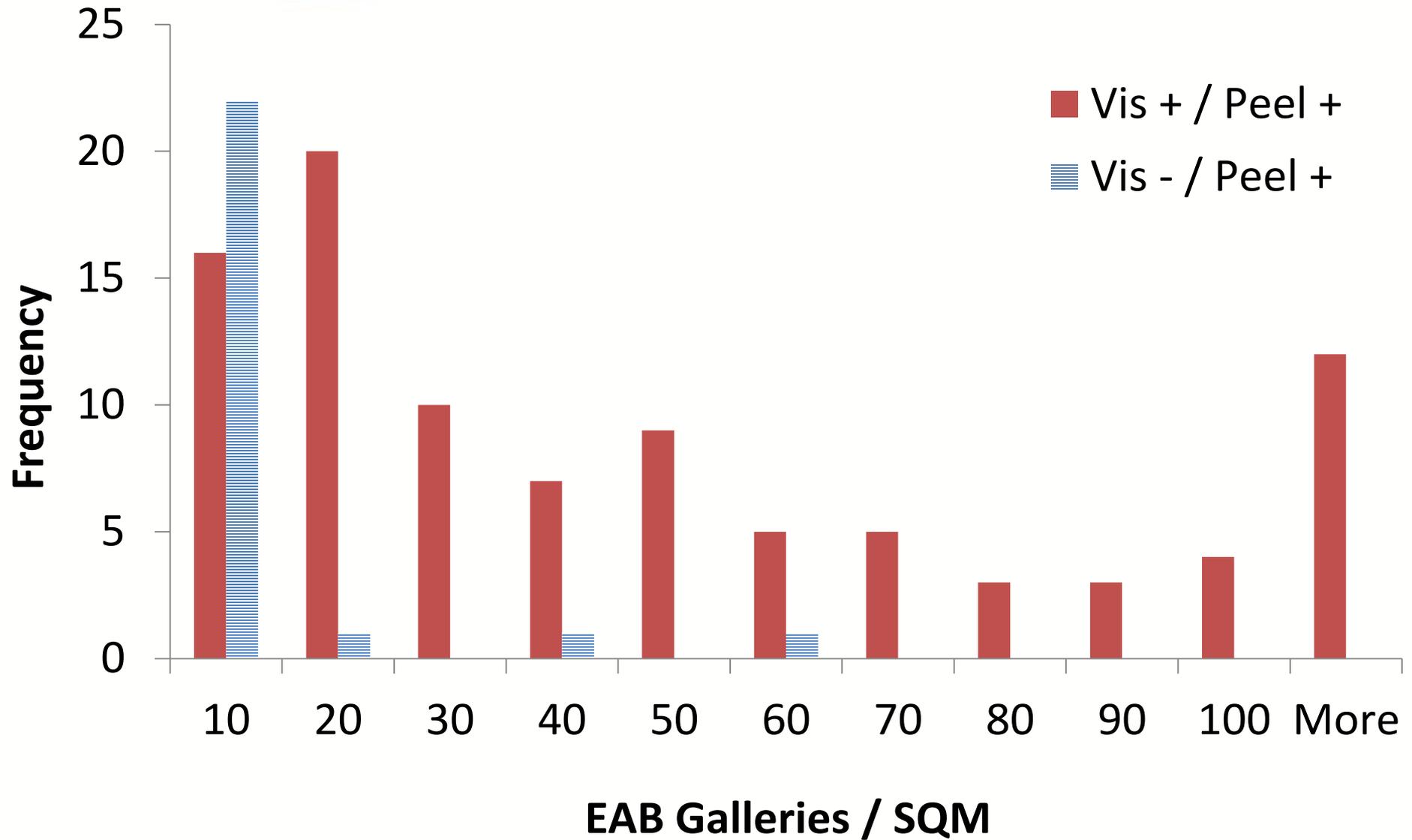
ota Department  
iculture

- ◆ Branch Sample +
- Visual Assessment +
- ▲ EAB Trap
- Study Tree
- Study Site Boundaries



# St Paul





## Hours of Work

Site	Branch Sampling (all sampling)	Visual Assessment (3 people)	Traps (placement only)
GRB K. Bluff	81.25	6.5	0.5
GRB K. Valley	81.25	6	0.5
Fort Snelling	74	3.75	0.5
Roseville	34.75	10.25	13.25
Minneapolis	33	6.5	7.3
St Paul	38.25	11.5	9
Shoreview	42.5	7.5	9.25
Duluth	36	2.5	3

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## **Conclusions / Questions**