

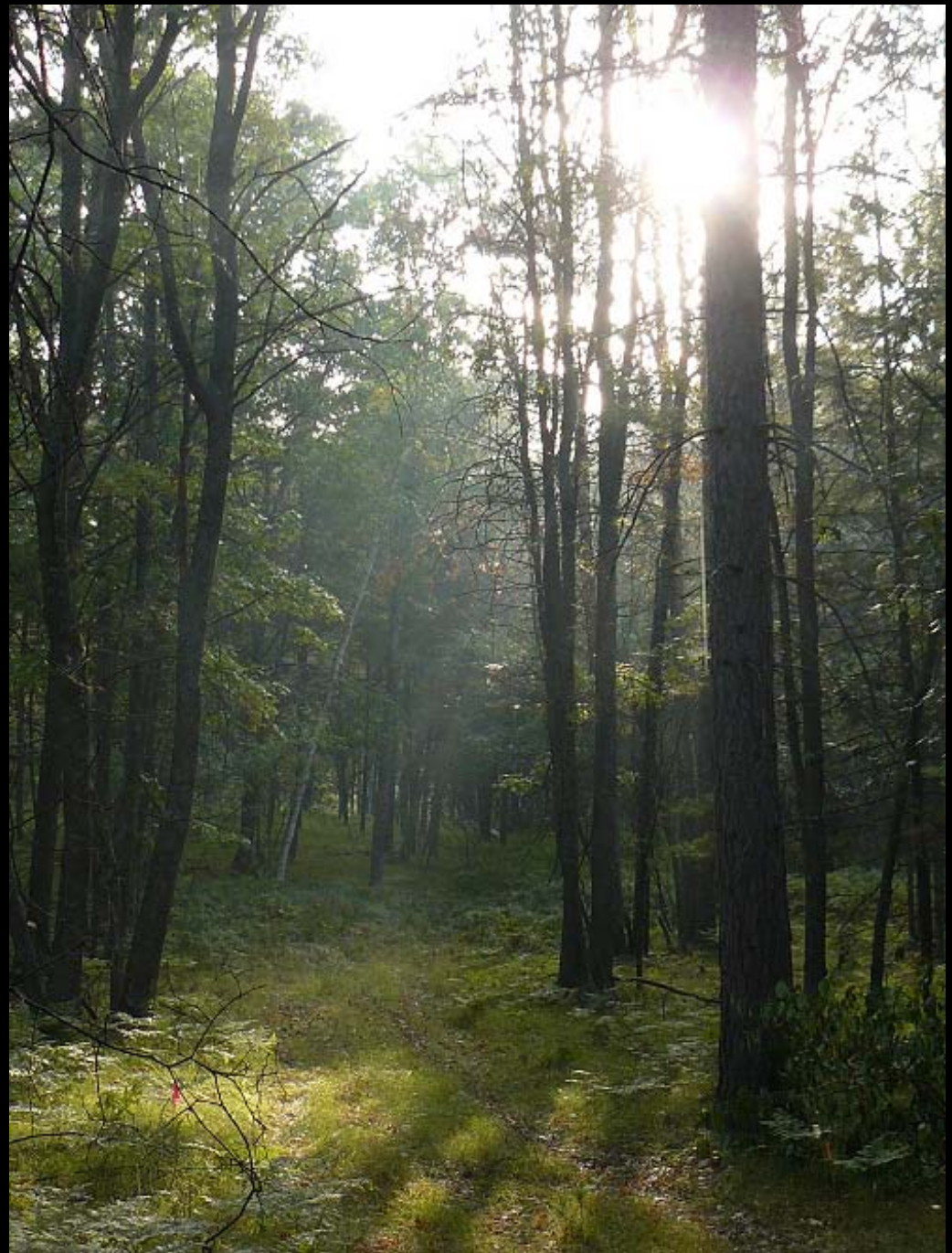
Oak Wilt

Controlling A Quiet Killer

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Michigan SAF
Fall 2009 Conference

MICHIGAN STATE
UNIVERSITY
EXTENSION



What is Oak Wilt?

Ceratocystis fagacearum

- *An exotic fungus*
- *Related to Dutch elm disease*
- *First identified in 1944*
- *Kills by blocking xylem vessels*
- *Spread overland by beetles*
- *Spread underground thru roots*
- *Been around for decades but . . .*

What Does Oak Wilt Look Like?



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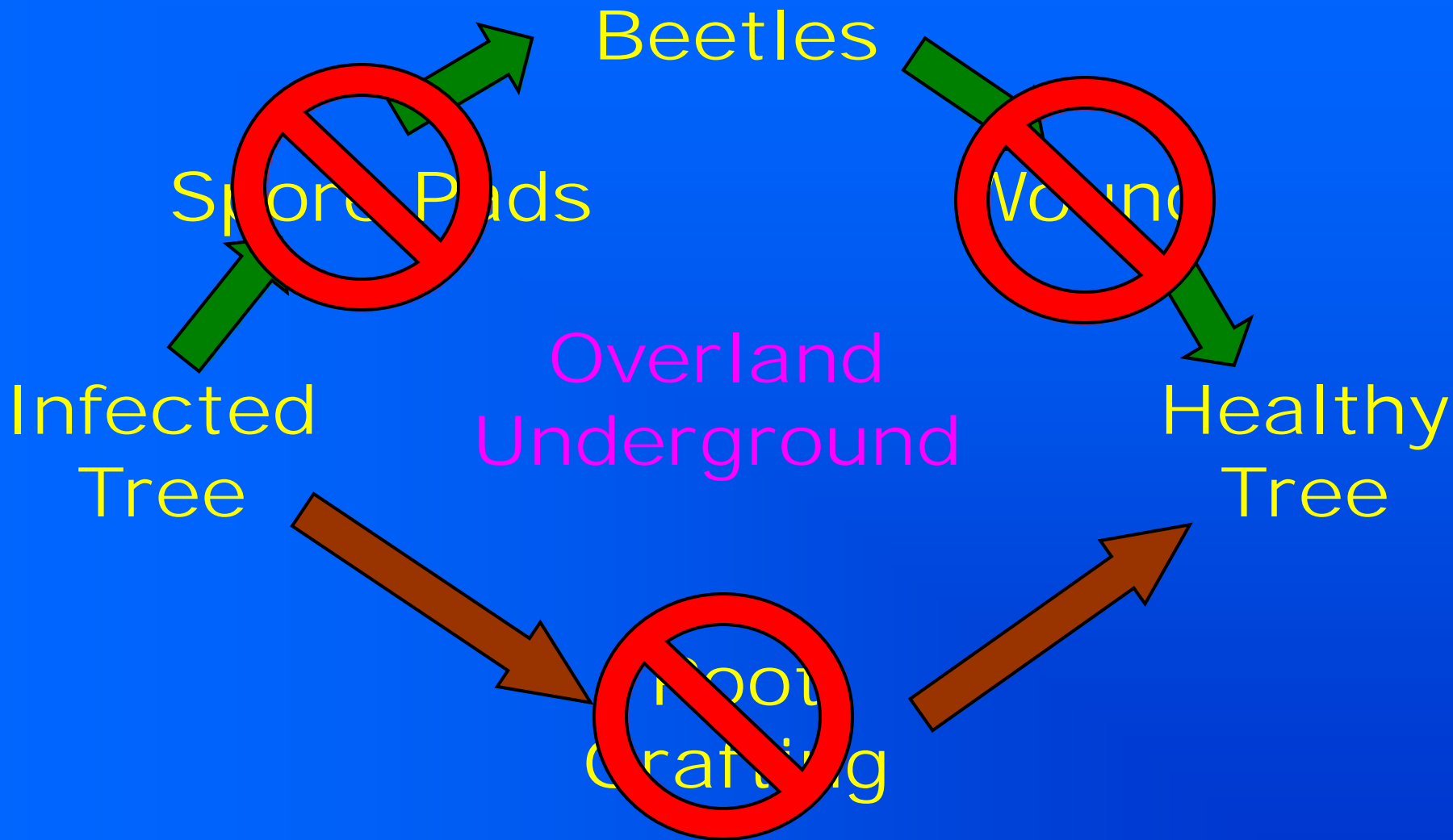


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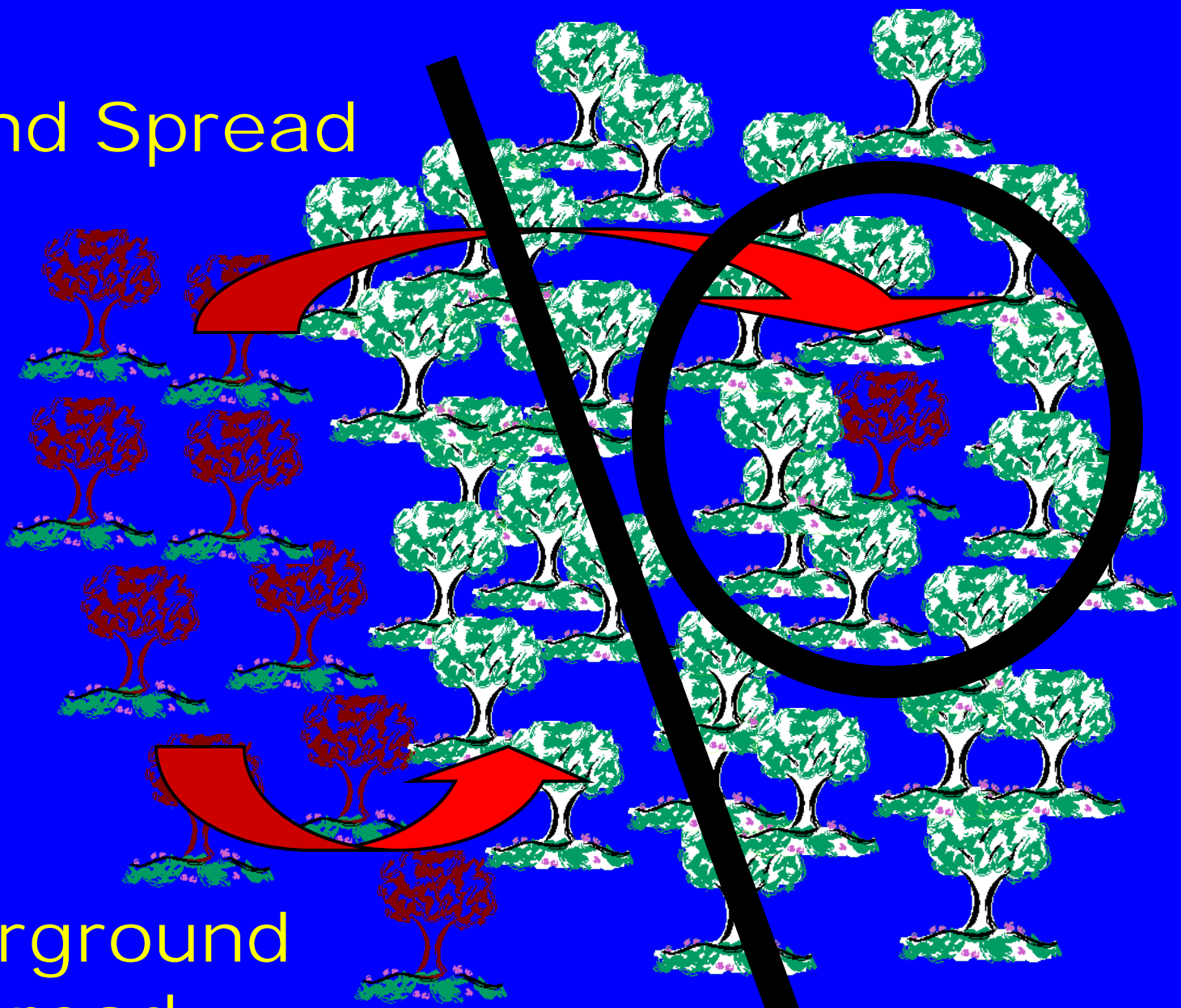


Pressure pads, also called spore mats, fruiting bodies, etc.

Disease Cycle



Overland Spread



Underground
Spread

Spread of Oak Wilt Underground



Root
grafts,
mostly
with red
oaks

So, what to do about it?



U.P. Oak Wilt Control Project

Years: *2004, 2006, 2007, 2009*

#Feet: *135,306 (~25.5 miles)*

#Epicenters: *145*

#Trenches: *171*

#Landowners: *20*

Contract \$\$: *\$265,000*

Human Behaviors

- Home/garage construction
- Cable laying, septic work
- Firewood distribution
- R-O-W maintenance, pruning
- Prevention is the best defense



**DO NOT WOUND OAKS
APRIL through AUGUST!**

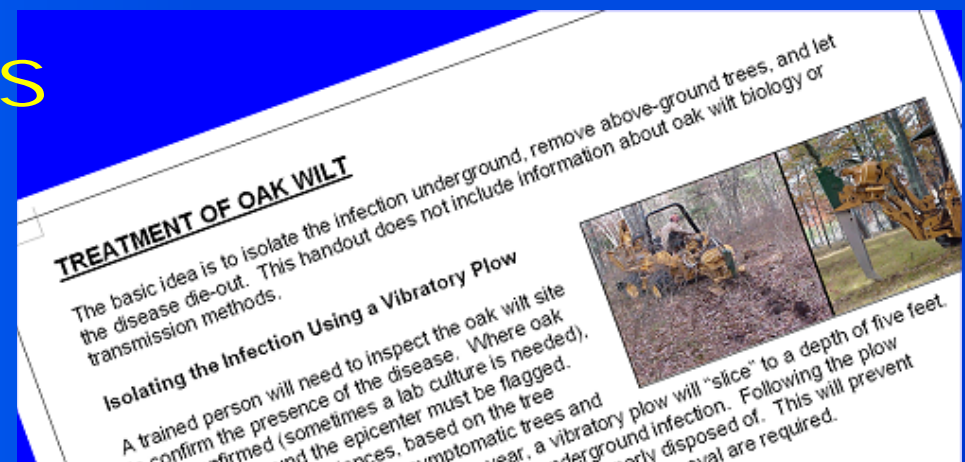
Treatment

- Funding sources
- Public education
- Identify epicenters
- Mark symptomatic trees
- Mark trench line using regression table distances
- Trench with vibratory plow, pack line
- Remove timber
- Proper disposal of symptomatic trees
- Monitoring for 3+ years



Public Education

- Newspaper articles
- Bulletins & flyers
- Public meetings
- Specific mailings
- Notes on doors
- Agency partners
- Radio shows



Identify Epicenters



Air Photos

Roadside
Observation

Field Recon

Landowner
Queries

Access

Confirming Oak Wilt



There are other damaging agents that can resemble oak wilt

Mark Symptomatic Trees



These trees
need special
care

Mark Trench Line

Flag trench line

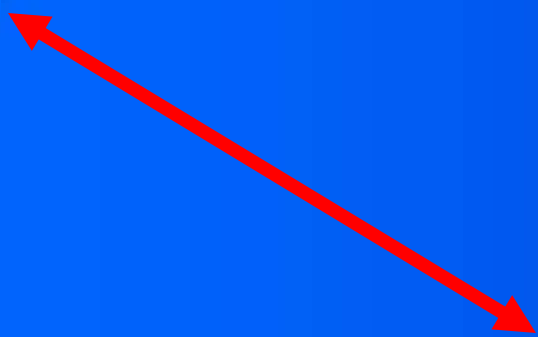
Ribbon timber
cutting boundary

Timing



Regression Distances

Function of
tree diameters
& soil type



$$8 + 12 = 20$$

Distance of 51 ft

| DBHs | Loam | Sand |
|-----------|------|-----------|
| 2 | 4 | 5 |
| 4 | 8 | 10 |
| 6 | 12 | 15 |
| 8 | 16 | 20 |
| 10 | 20 | 26 |
| 12 | 24 | 31 |
| 14 | 29 | 36 |
| 16 | 33 | 41 |
| 18 | 37 | 46 |
| 20 | 41 | 51 |
| 22 | 45 | 56 |

Trench With Vibratory Plow



Depth to 5 feet
Rocks problematic
\$1.50/foot in 2009



Remove Oak Within Treatment Area



Timber sale volumes may be low for many owners and difficult to sell

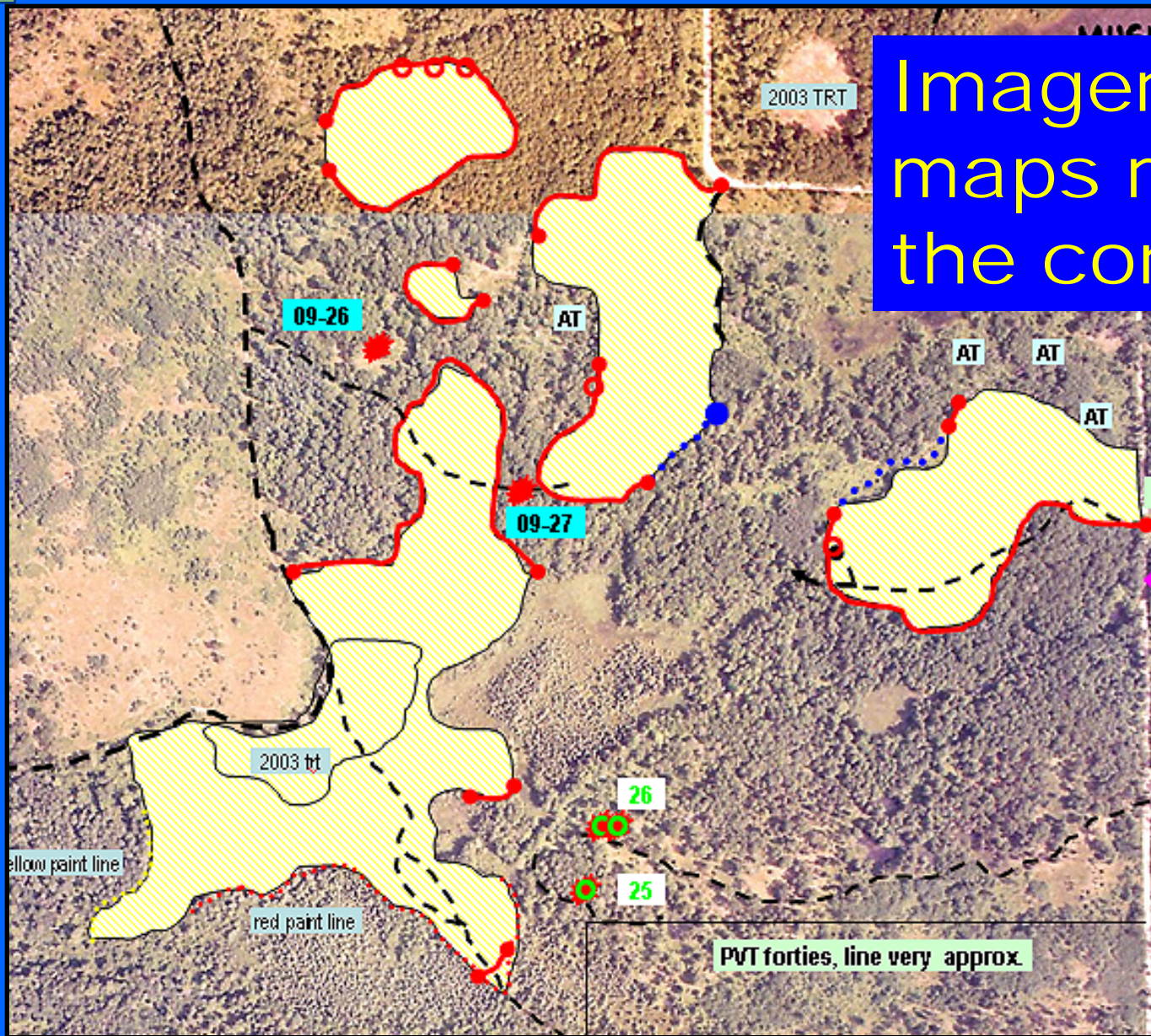
Proper Disposal of Symptomatic Trees

Lumber
Chips
Tarping
Burning
Isolation



Firewood is a special hazard!!

Imagery and maps ready for the contractor



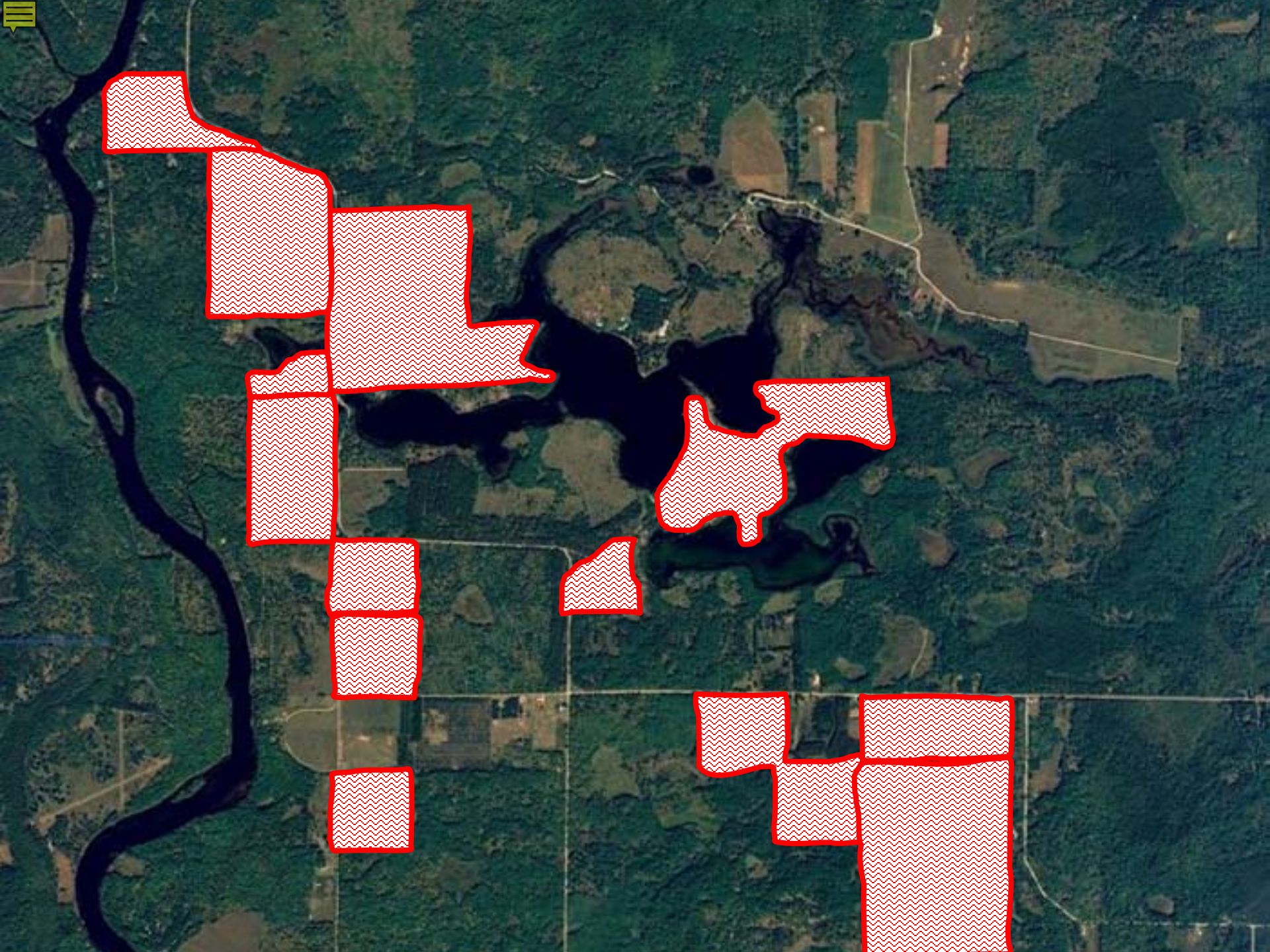
Similar Symptoms, Different Problems

Two-lined Chestnut Borer (TLCB)

Oak decline (drought, poor site, old age, TLCB, gypsy moth, etc.)



Red oak leaf
with symptoms
of
Anthracnose





Questions?

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