

# Oak Wilt

## Problem areas and prescriptions

**Bill Cook**  
**MSU Extension**

**Michigan SAF**  
**Fall 2011 Conference**

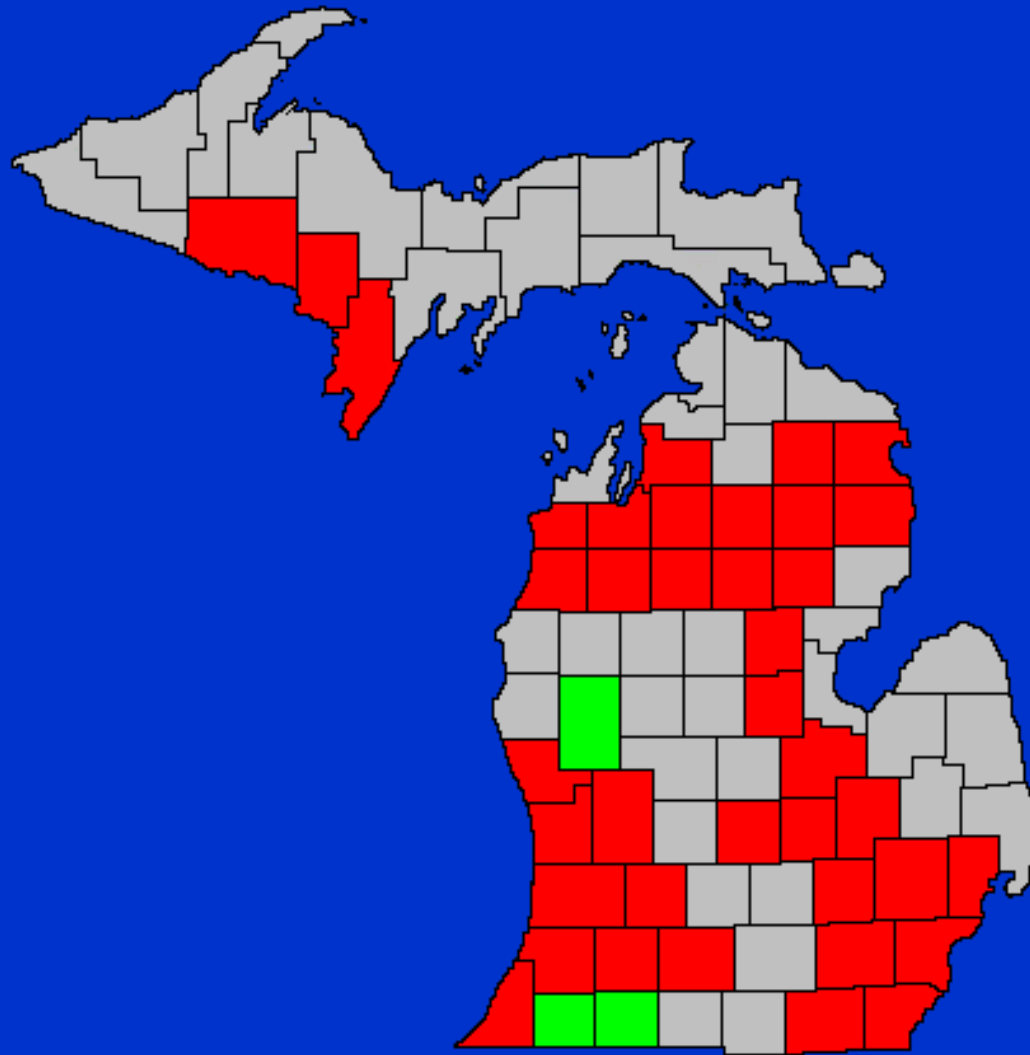


# What is Oak Wilt?

## *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 . . .*

## Continental Distribution of Oak Wilt



## 2010 Distribution by County



# What Does Oak Wilt Look Like?





# What Does Oak Wilt Look Like?







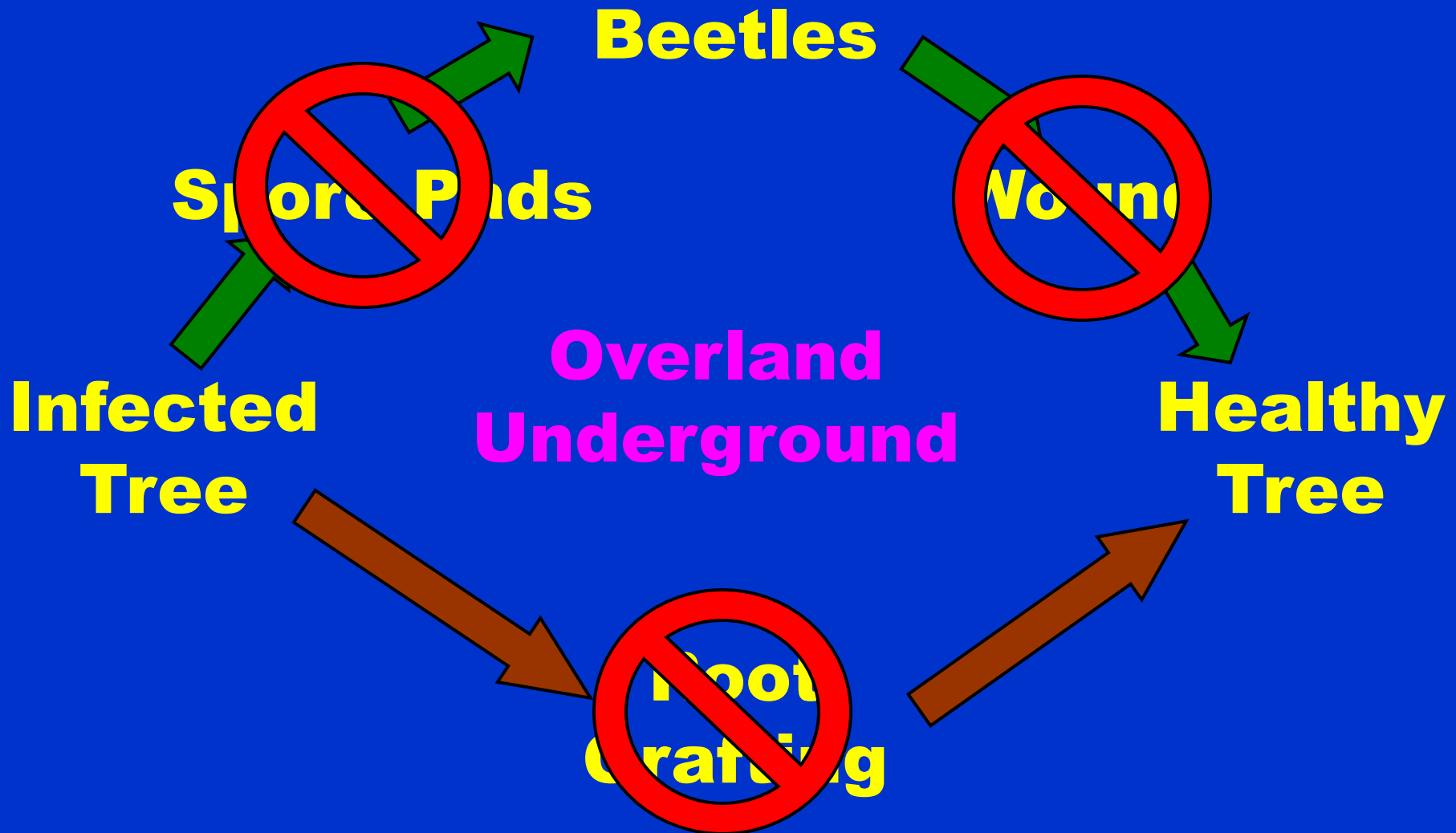


# What Does Oak Wilt Look Like?



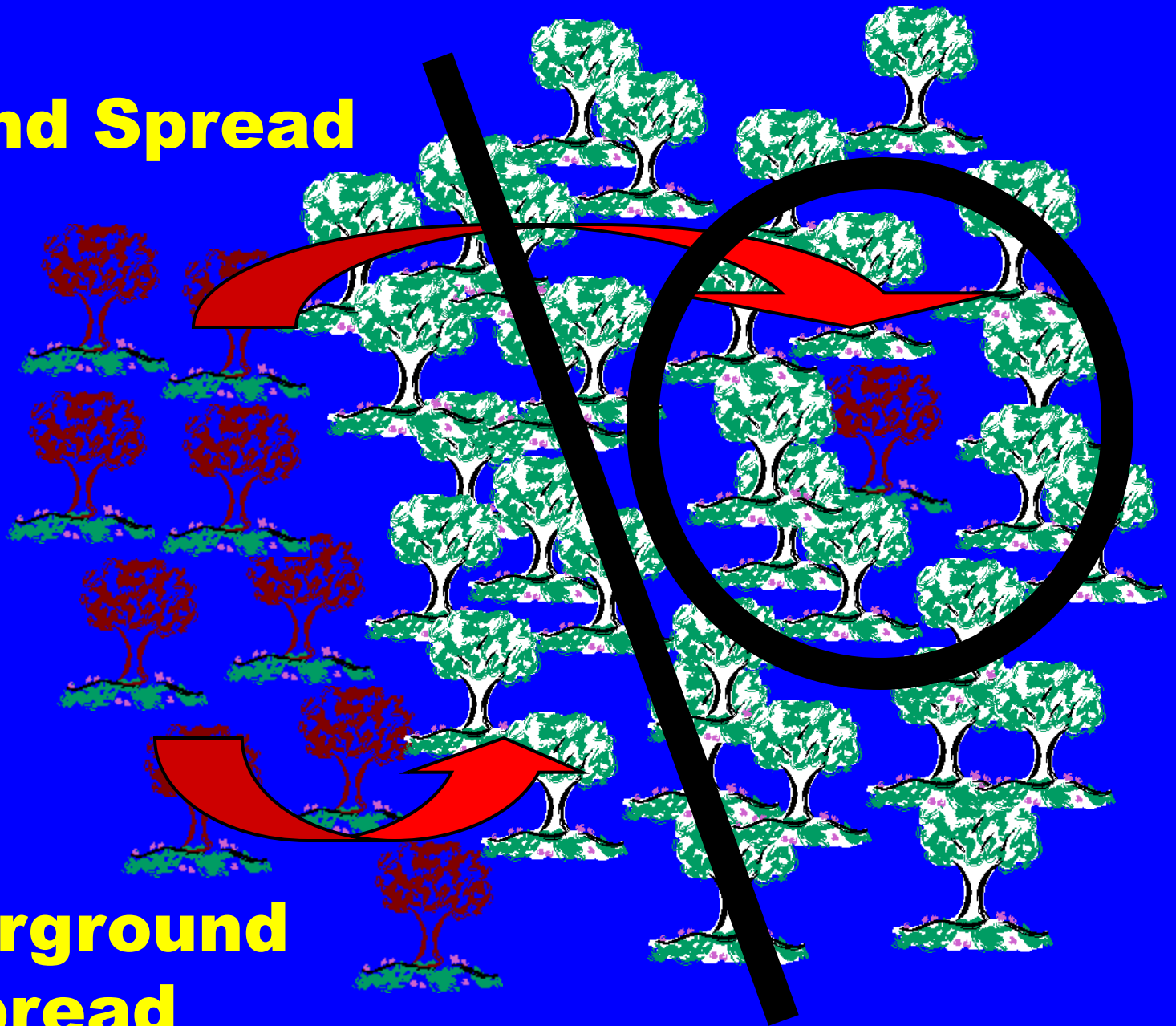
**Pressure pads, also called spore mats, fruiting bodies, etc.**

# 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, 2010

**#Feet:** 154,796 (~29.3 miles)

**#Epicenters:** 178

**#Trenches:** 209

**#Landowners:** 23

**Contract \$\$:** \$315,000





# **L.P. Oak Wilt Control Project - 2011**



**ID & treatment parks and  
campgrounds**

**ID & treatment in high value  
forest stands**

**No oak harvest 15 April to  
15 July (state land)**

**Increase public awareness**

# **L.P. Oak Wilt Control Project - 2011**

**ARRA funding, second of 2 years**

**ID by DNR personnel**

**Line set-up by consultants**

**Trenching by contractor**

**Active in Benzie, Crawford,  
Grand Traverse, and Missaukee**

**9 sites, 7238 feet, all state land**





# National Database Development

Also in its second year

Develop standard ID protocol

Improve distribution map for Michigan

Archive data for mngt. & research

Funding USFS grant

DNR, MSU, MTU



# 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 JULY!**



# 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**

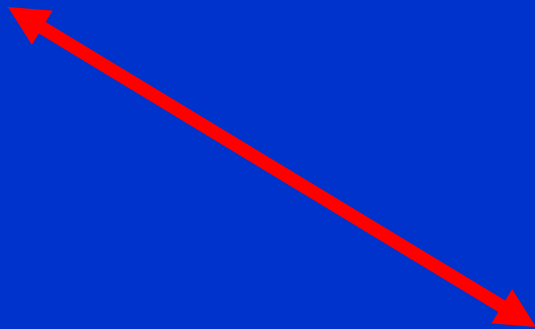
**Ribbon timber  
cutting boundary**

**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  
\$2.00/foot**





# Remove Oak Within Treatment Area



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

# Proper Disposal of Symptomatic Trees

**Lumber  
Chips  
Tarping  
Burning  
Isolation**



**Firewood is a special hazard!!**

# Experimental Stump Pulling

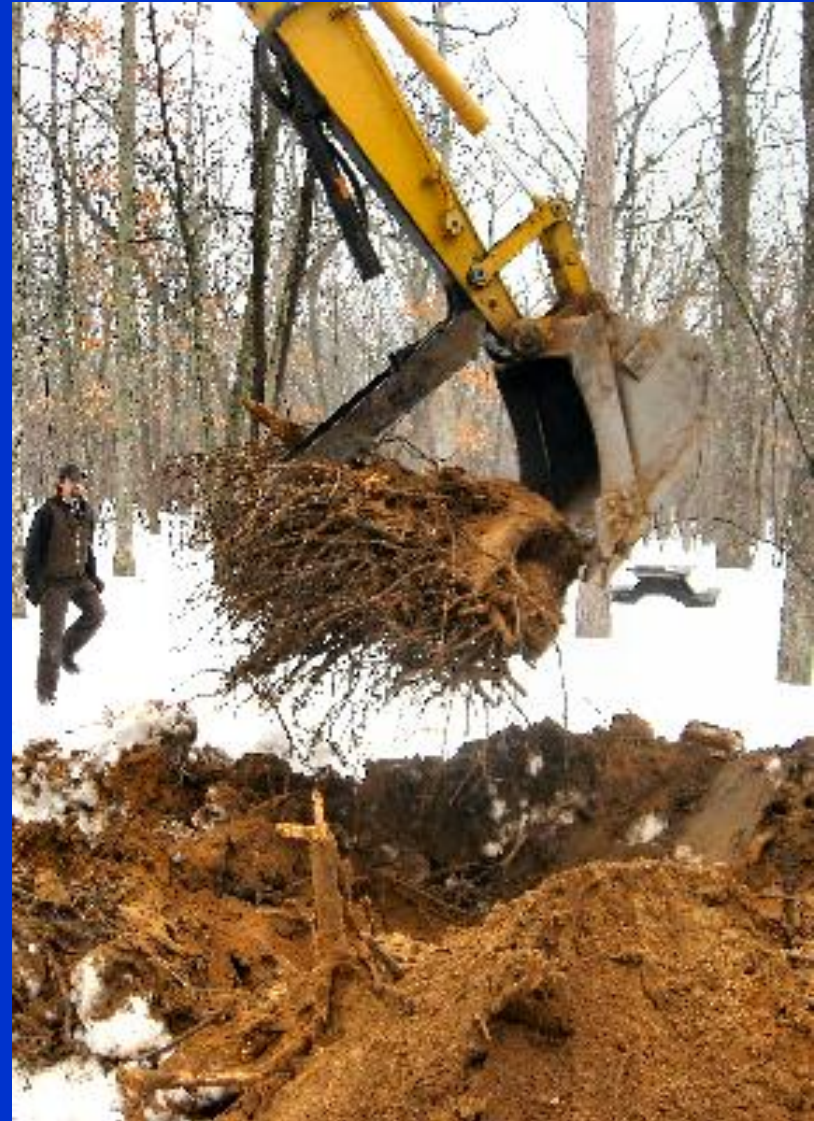
**First year epicenters**

**Pulled stump is  
burned or buried**

**Several test sites  
in the NLP**

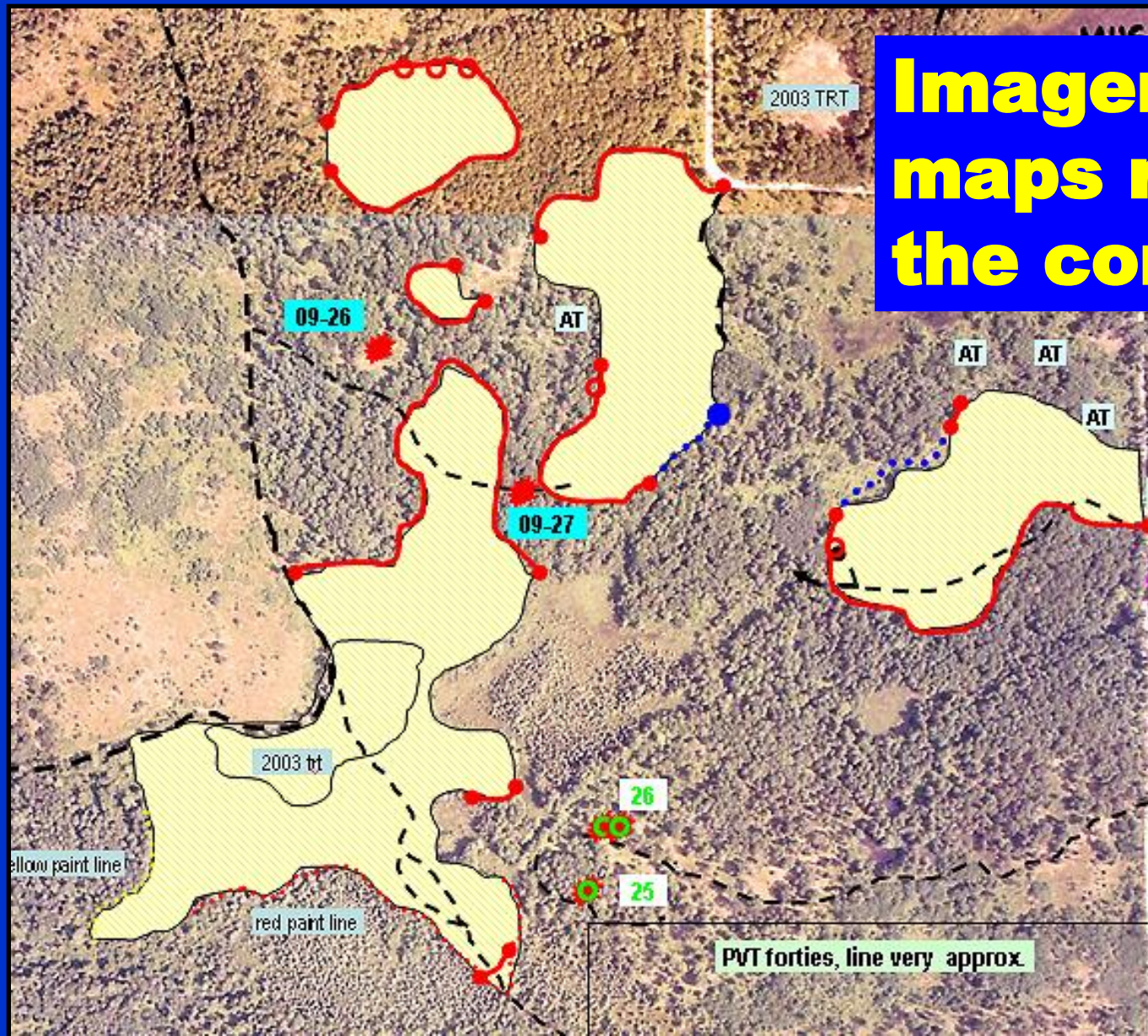
**Looks promising**

**Cooperation with USFS**





# Imagery and maps ready for the contractor



# **Similar Symptoms, Different Problems**

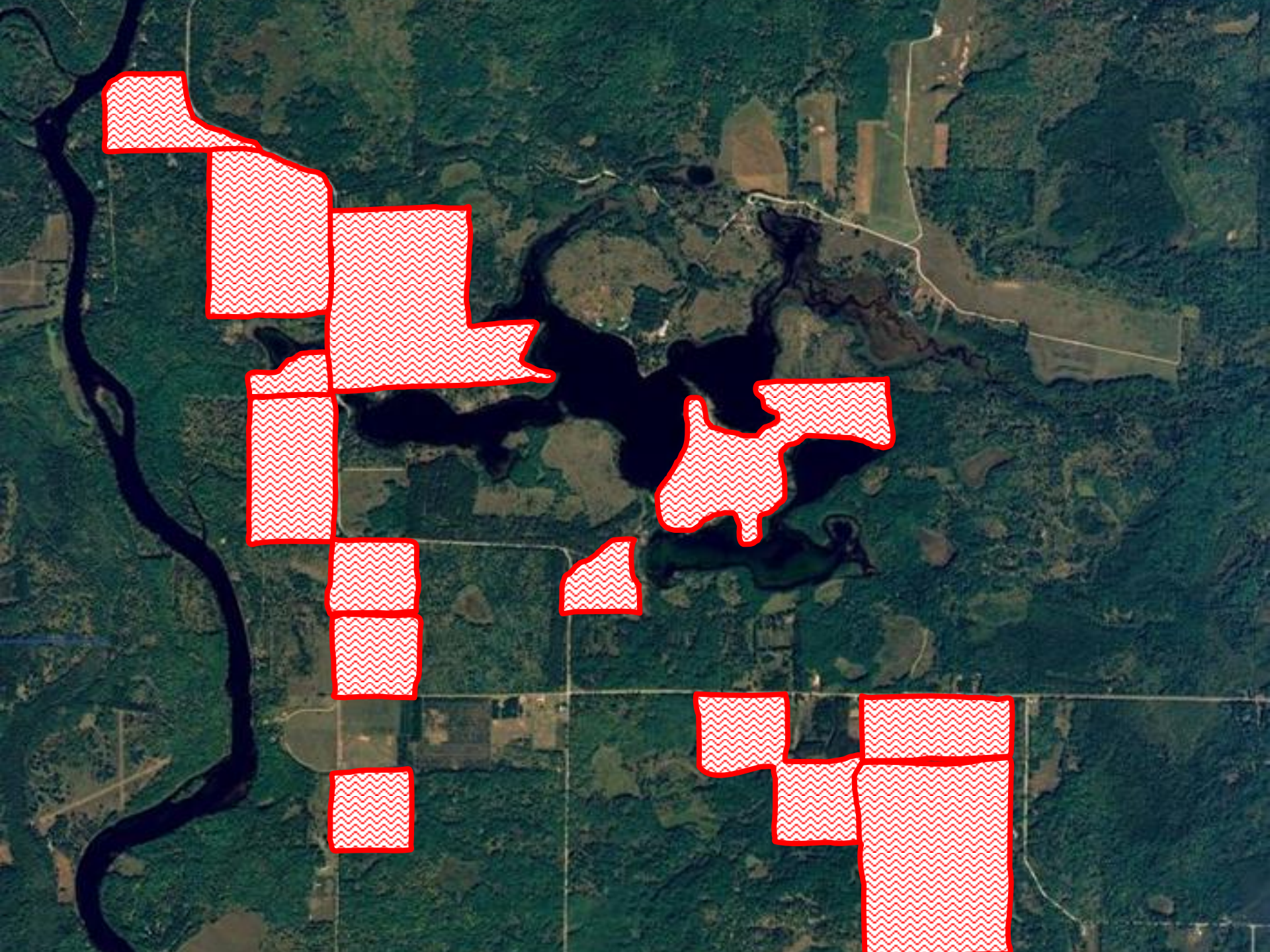
## **Two-lined Chestnut Borer (TLCB)**

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



**Red oak leaf  
with symptoms  
of  
Anthracnose**









**Questions?**

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