

Tree Insect & Disease on the Horizon

Sustainable Forestry Conference

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April 15, 2010



April 2010

Northern Region Forest Insect & Disease Report

*Wisconsin Department of Natural Resources
Division of Forestry*



CONTENTS

Across the Northern Region

- Important New Disease Threatens Some Species in the Northwoods
- Implications of Warm Weather on Oak Wilt Activity
- Annosum Survey Summary
- Reminder of PSC 113 – Oak Tree Cutting and Pruning Service Rules for Electrical Utilities

Pests in Eastern NOR

- Gypsy Moth Defoliation Likely in Southeastern Langlade County
- No Forest Tent Caterpillar Eggs Found this Winter

Sign up for newsletter: brian.schwingle@wisconsin.gov

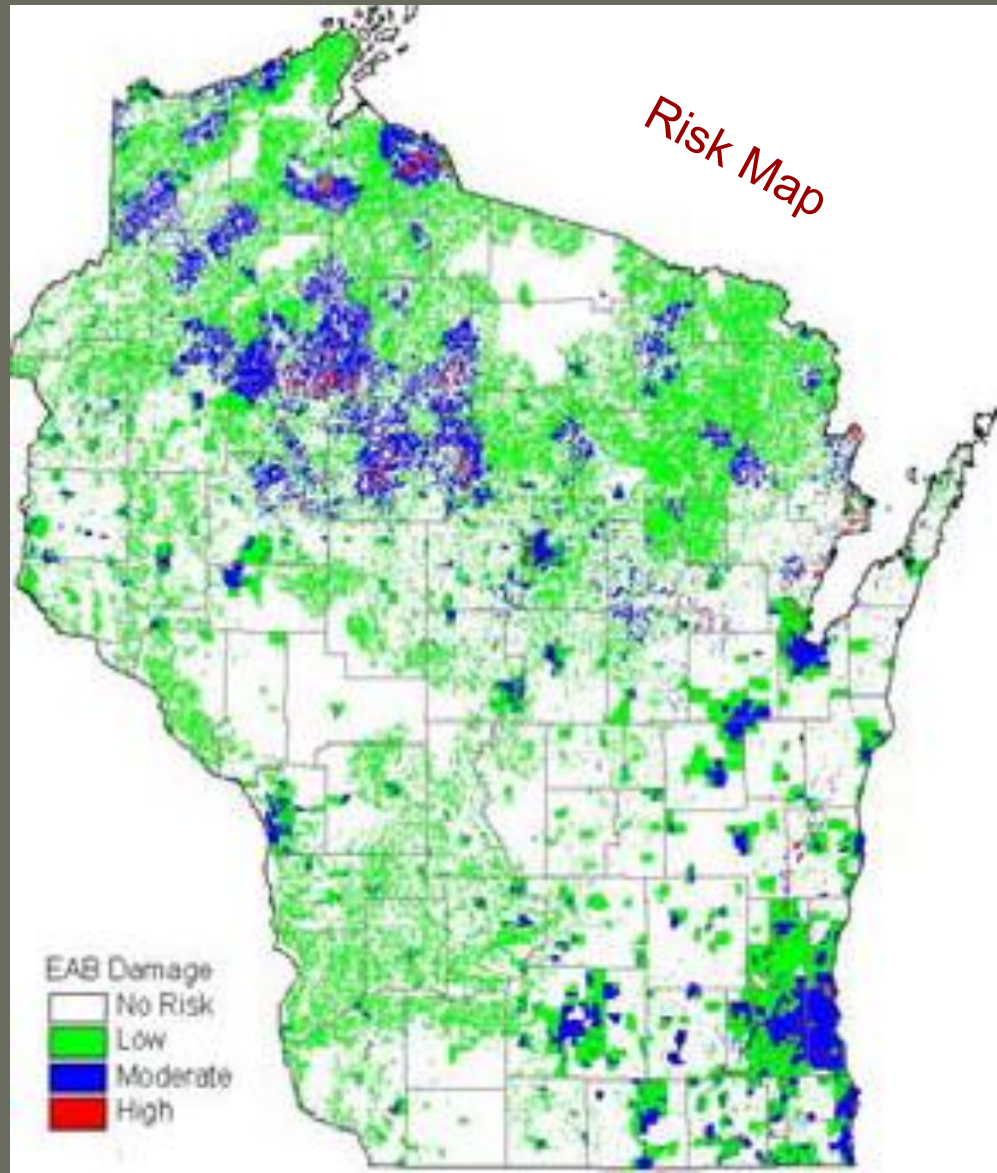
OR

Go to www.dnr.wi.gov/forestry/fh

Agenda

- EAB
- Annosum Root Rot
- Oak Wilt
- Twolined Chestnut Borer
- Other Red Pine Problems
- Spruce Budworm Populations
- Beech Bark Disease
- Defoliators

Emerald Ash Borer (EAB)



EAB Infestation Indications



EAB Infestation Indications



EAB Infestation Indications



EAB Infestation Indications



EAB Infestation Indications



EAB Adult and Larva

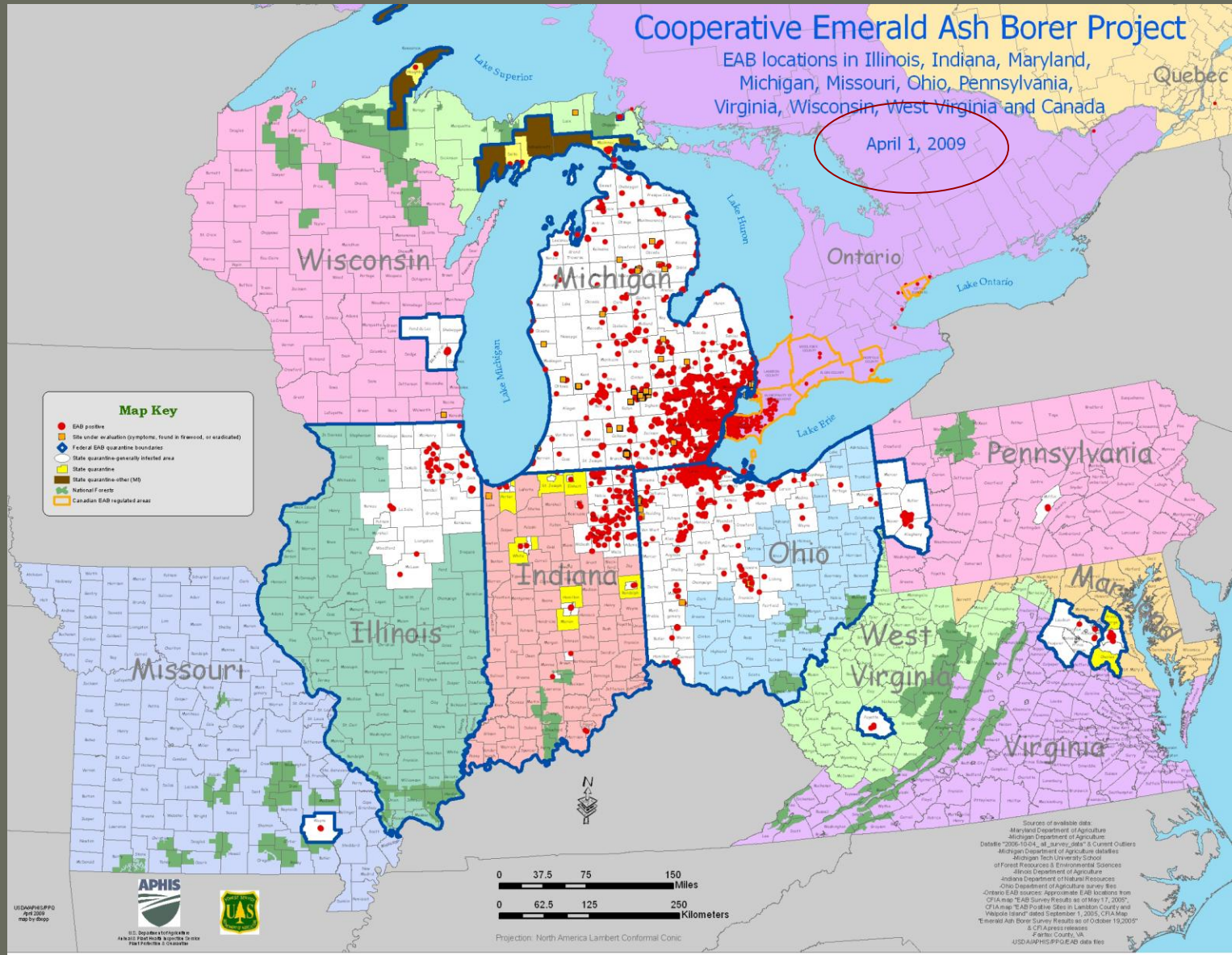


1 - 1½ inches

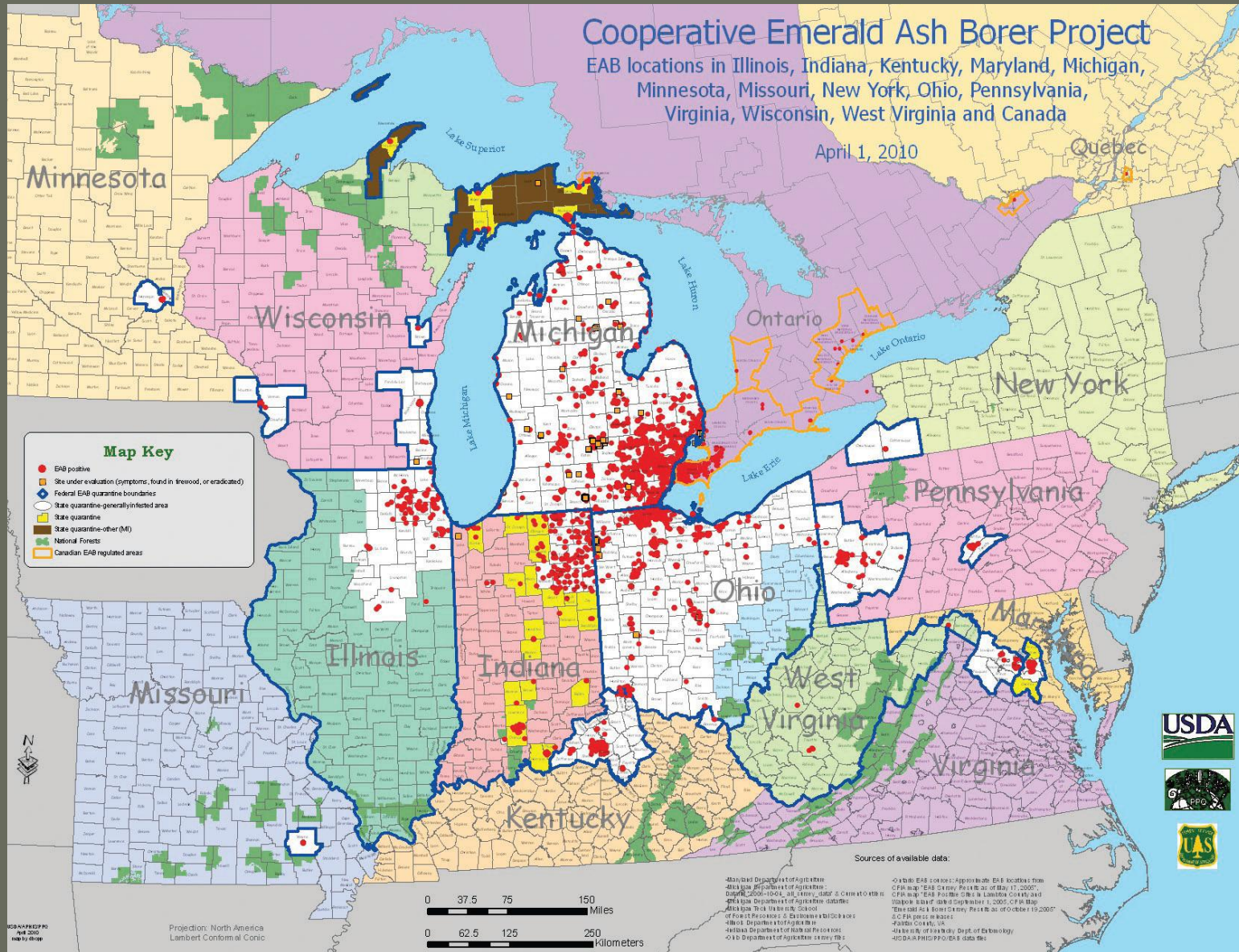
Young EAB Larva



EAB Distribution



EAB Distribution



Prepare Your Forest for EAB

- During your scheduled harvests, reduce the basal area of ash
- If you own black ash swamps, consider converting to a different cover type
- Visit www.dnr.wi.gov/forestry/fh/PDF/EABWIManagementGuidelines.pdf

EAB Reporting In WI

- Suspicious trees should be reported to the EAB hotline by calling 1-800-462-2803.
- Reports can also be emailed to DATCPEmeraldAshBorer@wisconsin.gov
- For more information on EAB, visit the state's website: emeraldashborer.wi.gov

What is Wisconsin Doing about EAB?



What is the State Doing about EAB?



Trap Tree Experiment



Williams

What is Wisconsin Doing about EAB?

- Experiments - trap trees
 - black ash stand conversion
- Early Detection
- Regulation to slow EAB's spread
- Wood Utilization
- Helping small woodland owners
 - inventory ash
 - facilitate pre-salvage timber sales

Want to Move Regulated Ash Material Within Wisconsin?

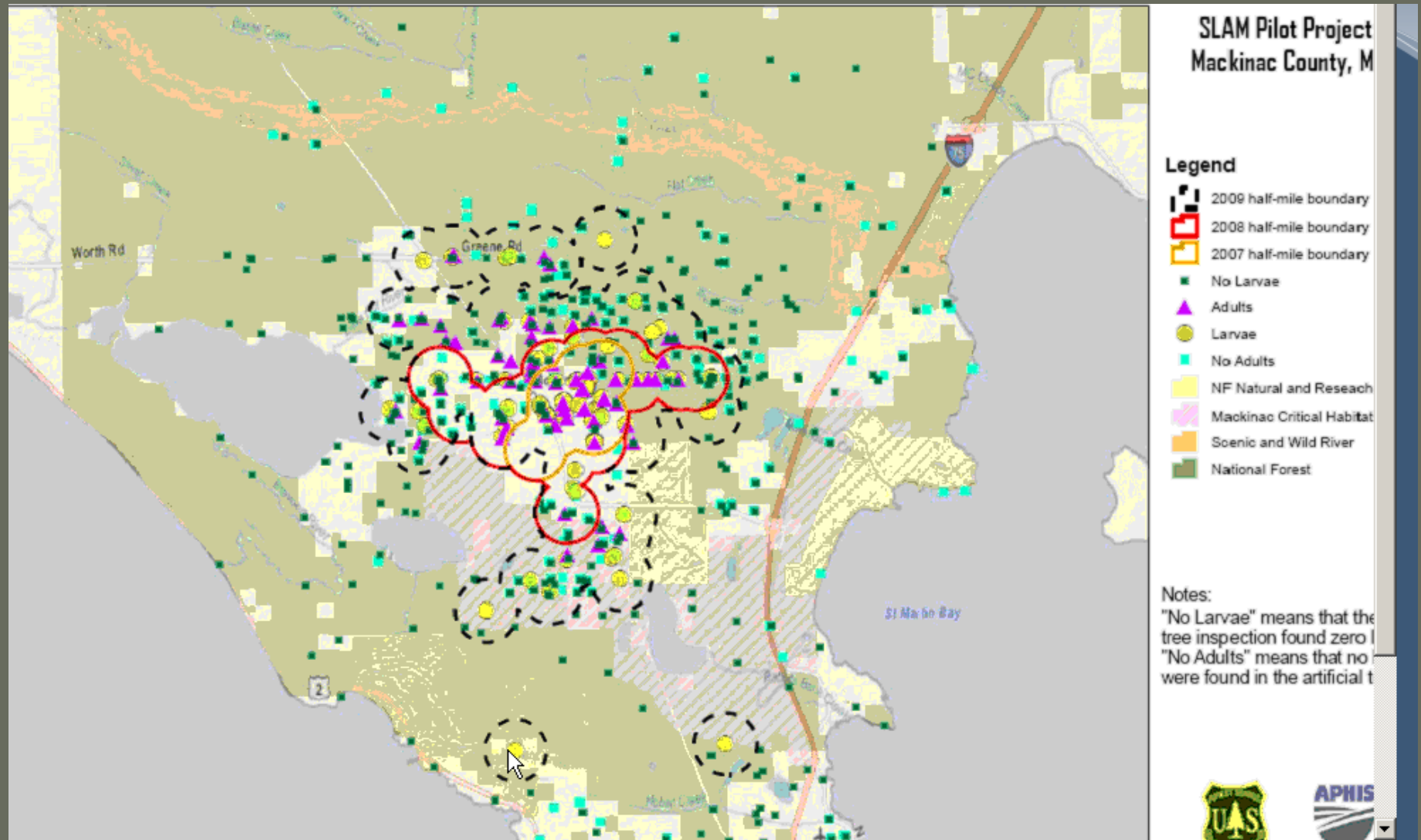
Contact Bob Dahl with DATCP— 608-224-4573

Want to Move Regulated Ash Material Across State Lines?

Contact APHIS:

JoAnn Cruse in Wisconsin – 608-231-9545

What is Michigan Doing about EAB?



Want to Move Regulated Ash Material Within Michigan?

Contact John Bedford with MDA – 517-373-4350
or 517-243-1247

Other Ash Pests



Longhorned Beetles



Other Ash Pests

Glassworms
(ash cambium miner)



Annosum (Heterobasidion) Root Disease



Annosum Root Disease



- Over 200 woody species have been reported as hosts
 - most common in red and white pine plantations in Wisconsin
- Do not confuse with Red Pine Pocket Decline!



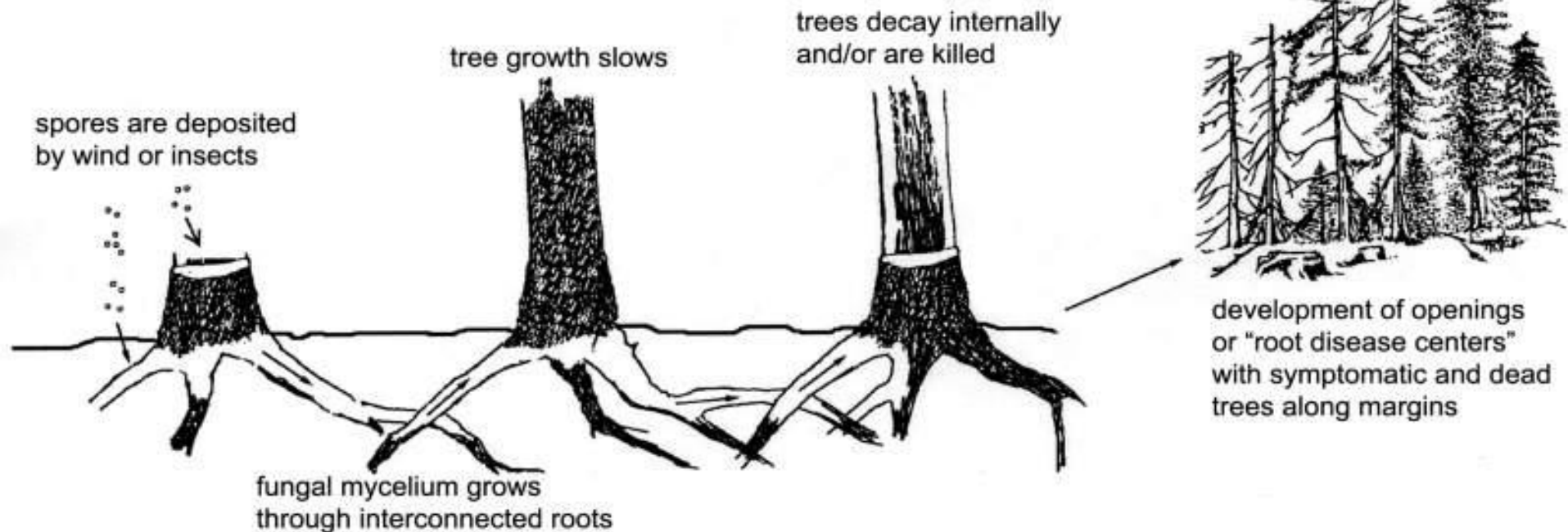
Annosum Root Disease





Annosum Biology

Spread of annosum root rot



Annosum Prevention

- Prevention
 - Thin in the winter
 - Shake Sporax or spray Cellu-Treat on stumps within 24 hrs of cutting



- If you have decline pockets, visit dnr.wi.gov/forestry/Fh/annosum

Forestry

Forest Health Protection

Annosum Root Rot

Introduction

Biology

Impact

Symptoms and Signs

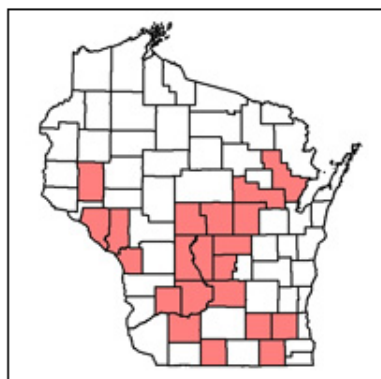
Prevention

Management

Invasive Species

Annosum Root Rot - Introduction

Annosum root rot, caused by the fungus *Heterobasidion annosum*, was first identified in Wisconsin in 1993 and is considered among the most important and destructive diseases affecting conifers in the north temperate regions of the world. Over 200 woody species have been reported as hosts. Red, white and jack pine and white spruce are the species most likely to be infected; particularly in plantation-grown stands subjected to thinning.



Confirmed counties in WI with annosum root rot (as of January 2010)
WDNR

Annosum has been confirmed in 21 counties including Adams, Buffalo, Columbia, Dunn, Green, Iowa, Jefferson, Juneau, LaCrosse, Marquette, Oconto, Portage, Richland, Sauk, Shawano, Trempealeau, Walworth, Waukesha, Waupaca, Waushara, and Wood counties.

Once the disease exists in a stand, it is very difficult to control. **Prevention of this disease is the best approach.** To learn more about how to prevent this disease from affecting your trees, please see our [prevention page](#).

Site Factors/Stand History

In the southeastern United States, disease development is more common on land formerly used for agriculture and with a pH >6 than on old forest soils. Sandy or sandy loam soils at least 12 inches (30 cm) deep, with good internal drainage and a low seasonal water table are also considered sites favorable for disease development. The influence of site factors on disease progression has not yet been studied in Wisconsin. Annosum root rot is most damaging in plantation-grown conifers where thinnings provide infection courts (fresh stumps) and root grafts provide a pathway for Annosum to move from tree to tree.

Compare the Pests

Annosum Root Rot and Red Pine Pocket Mortality share many characteristics. Learn how they are different.

Introduction

[Annosum root rot](#)

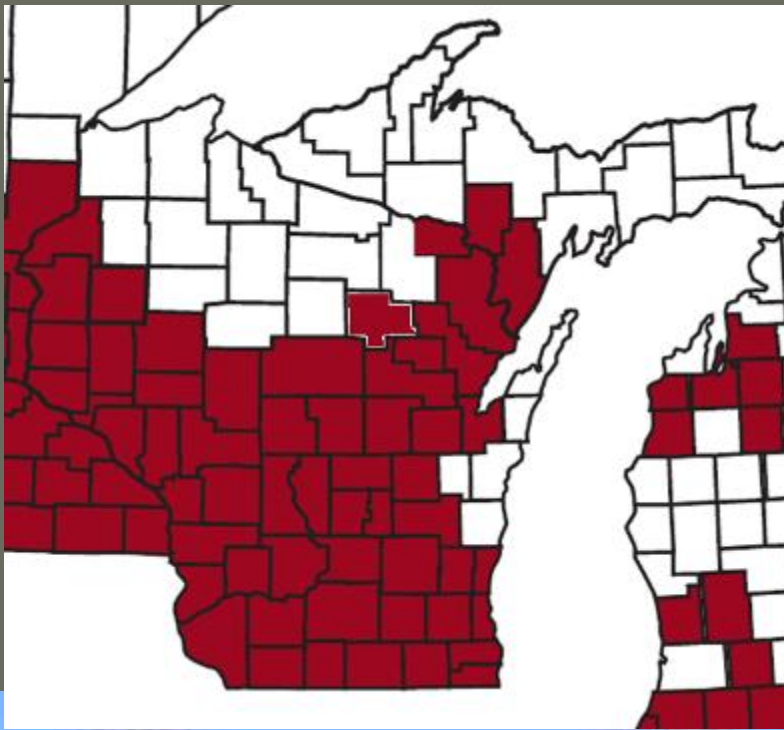
[Red Pine Pocket Mortality](#)

Publications

[Annosum Root Rot and Red Pine Pocket Mortality in Wisconsin](#) [PDF, 1.3 MB]

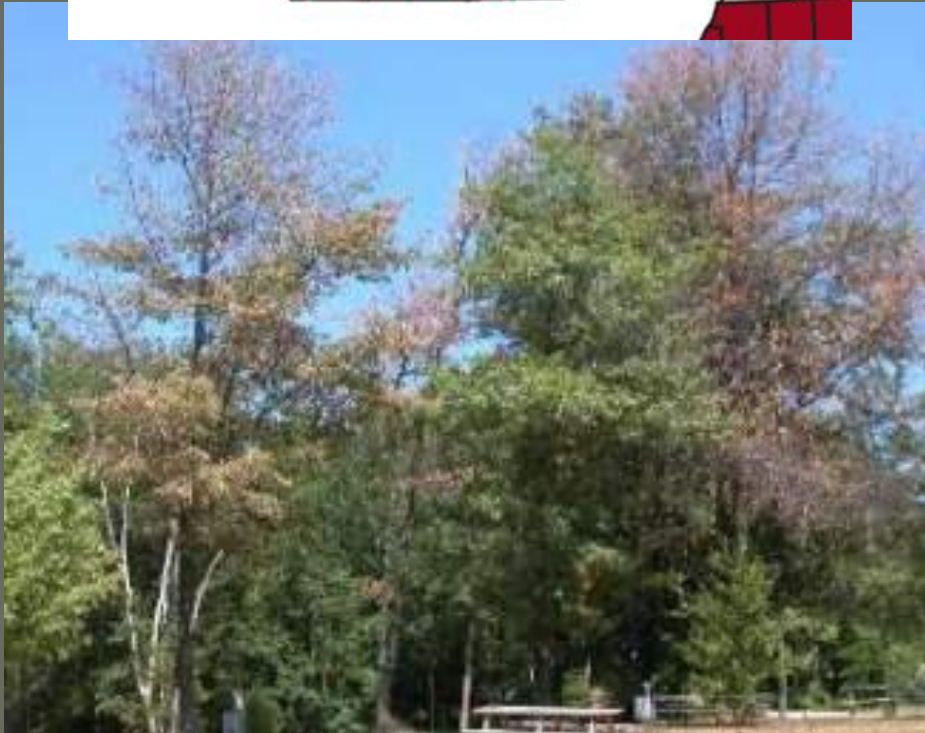
[Annosum Root Rot Factsheet](#) [PDF, 287 KB]

[Annosum Root Rot Economic Analysis: 2008 Annual Report](#) [PDF, 83 KB]



Oak Wilt

- Kills oaks
- Wilting occurs most often in late June - August
- Do not confuse with Two Lined Chestnut Borer!



Two-Lined Chestnut Borer



- Do not operate in stressed oak stands (exception: can winter salvage areas of dead oaks to capture economic value)



Oak Wilt Overland Spread



Oak Wilt Underground Spread



Solomon, USFS

UGA3066036

Oak Wilt Prevention

- Prevention
 - Do not thin between April 1 and July 15 (better yet, no cutting between March and October)
 - Do not bring oak firewood onto your property



Oak Wilt Control

1. Trench around pocket *at appropriate distance*
2. Remove oaks within trenchline & herbicide stumps

OR

1. Remove infected trees in fall/winter
2. Herbicide *appropriate* surrounding oaks in early July
3. Remove trees in fall & herbicide stumps

EXPERIMENTAL



Oak Wilt in Wisconsin: Biology and Management

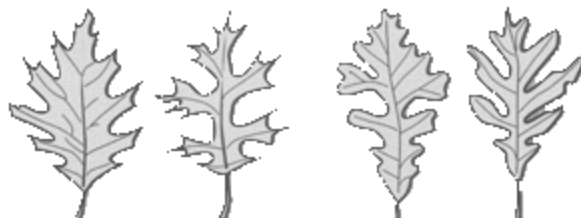
What is the distribution of oak wilt?

Oak wilt has probably been a part of our forests in Wisconsin for 100 years. Oak wilt is widespread throughout the southern Wisconsin oak resource.

What causes this disease?

Oak wilt is caused by a fungus, *Ceratocystis fagacearum*. The fungus invades water-conducting vessels and induces the formation of balloon-like projections called tyloses which also plug the vessels. As water movement within the tree is slowed, the leaves wilt and drop off the tree.

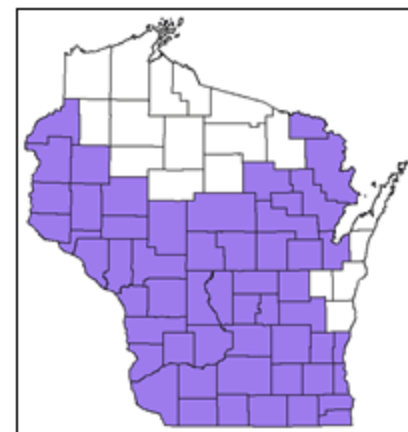
Which trees are susceptible?



Red Oak Group

White Oak Group

Oaks in the red oak group (black, northern red, northern pin and others with pointed leaf edges) are most susceptible. Oaks in the white oak group (white, swamp white, burr and others with rounded leaf edges) are less susceptible.



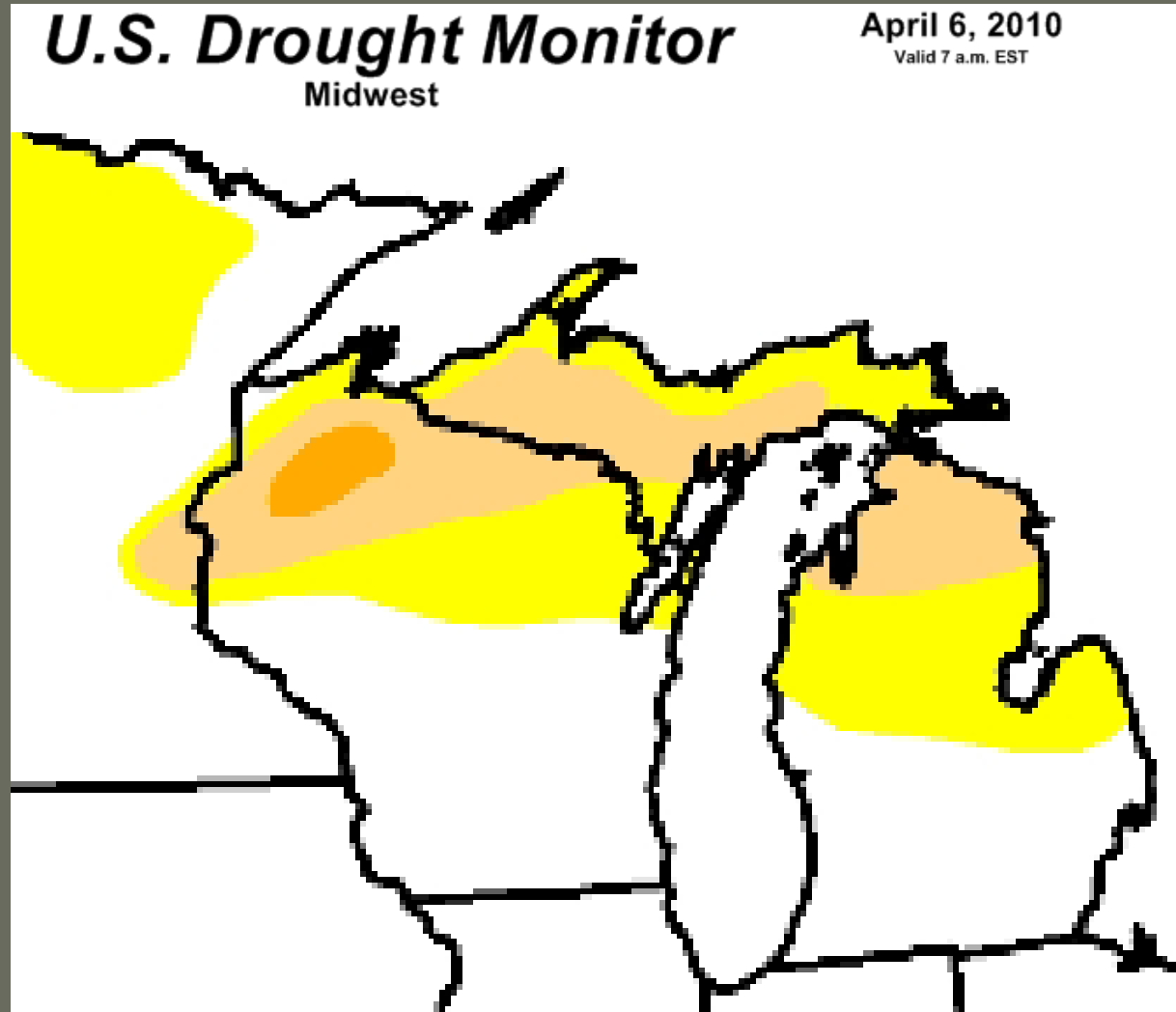
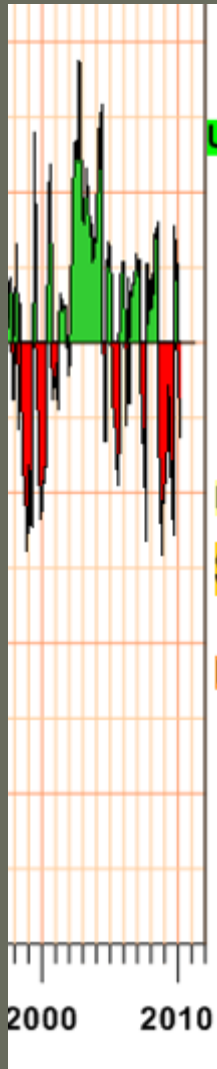
Confirmed counties in WI with oak wilt (as of September 2008)

Note: Oak wilt was first confirmed in Langlade County in September 2008.
WDNR

•If you have dying oaks, visit
dnr.wi.gov/forestry/Fh/oakWilt/

Throughout July and
August, come out in the

Local Red Pine Problems



Armillaria Root Rot



Armillaria Root Rot



Armillaria Root Rot



Armillaria Management

- Promote species diversity
- Maintain tree vigor
- Do not plant pines on a former hardwood site
- Desperate times call for desperate measures:
 - Bulldoze out stumps



Pine Engraver Bark Beetles



Pine Engraver Management

- Prevention
 - Do not thin from March to the mid-September
 - Move logs off landing within 3 wks during the growing season
 - Beware fresh firewood
- Promote species diversity
- Remove newly infested trees ASAP (or before next April)
- Water ornamentals



Spruce Budworm



Spruce Budworm



USFS

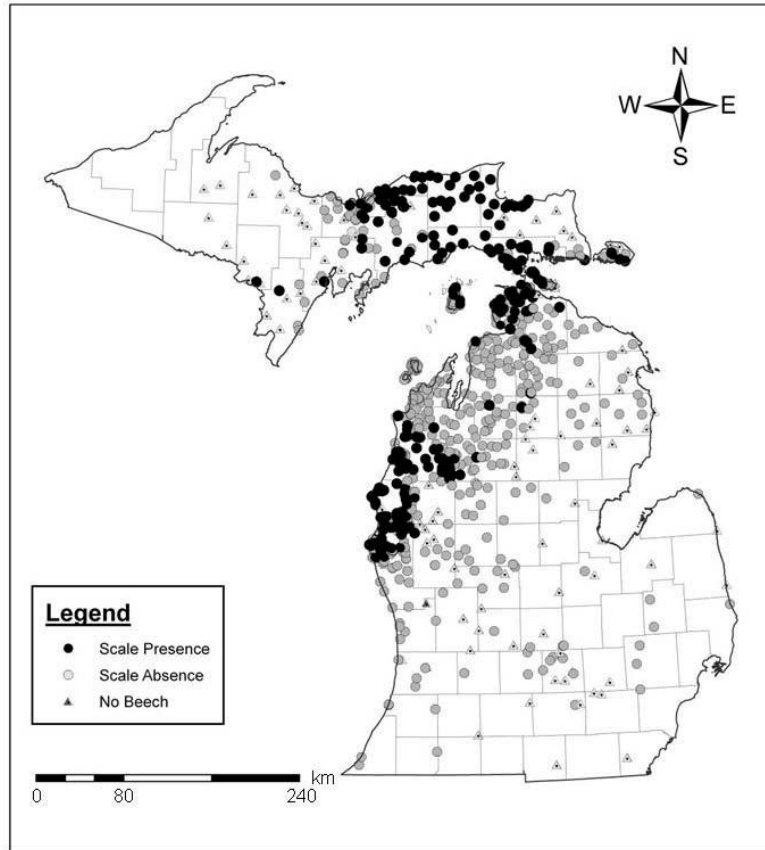
UGA5036025

Spruce Budworm Management

- Reduce rotation age
- Remove older balsam firs and spruces near spruce/fir plantations

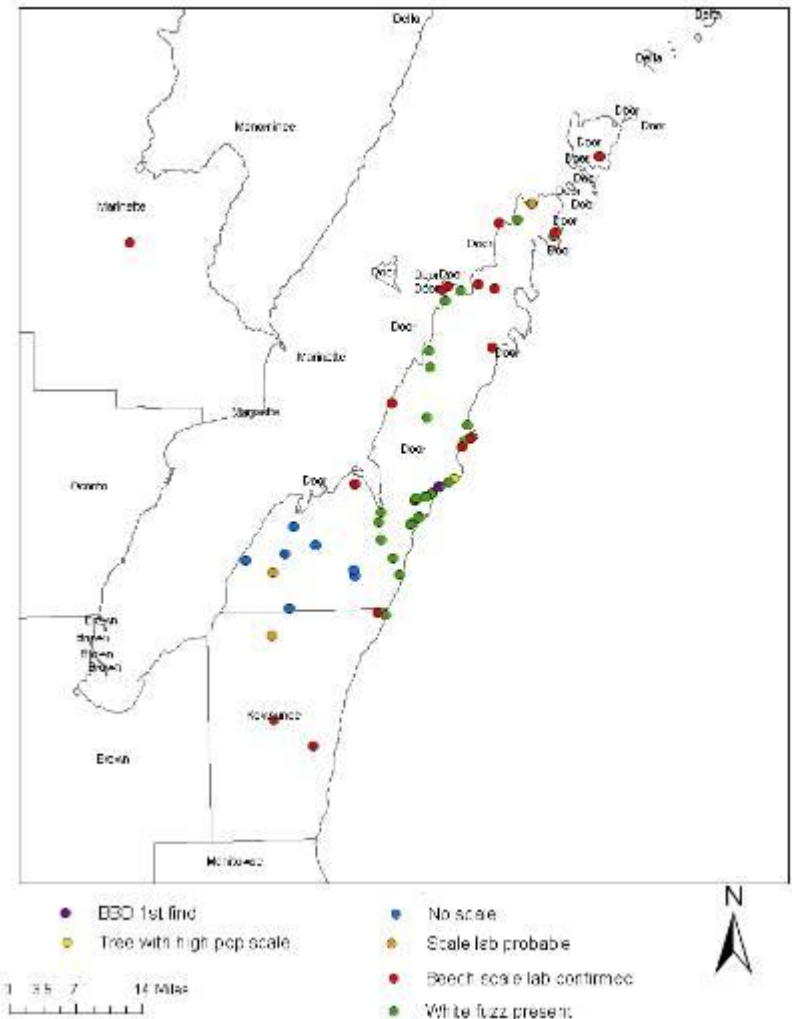


Beech Bark Disease



Confirmed beech scale sites
Created by Daniel Wieferich, MSU

Beech scale distribution in WI as of 1/4/2010
The beech scale (*Cryptococcus fagisuga*) has been confirmed in Door, Kewaunee, and Marinette Cos.



Beech Bark Disease Indicators



Beech Bark Disease Indicators

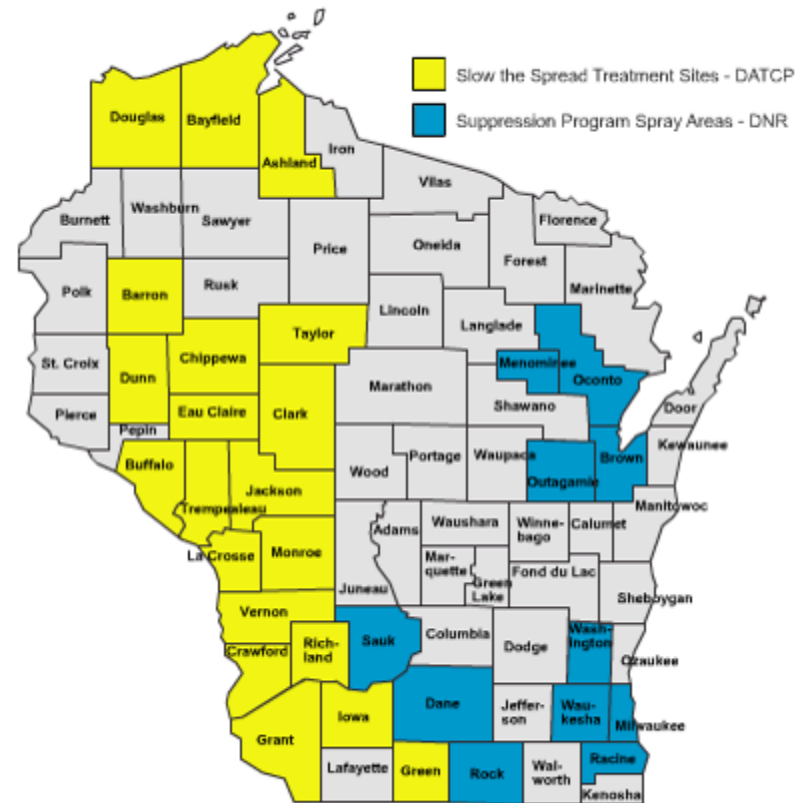


Gypsy Moth



A close-up photograph of a hairy caterpillar with a black, red, and white patterned body, crawling on a green leaf with several holes. The caterpillar has long, fine hairs and a distinctive pattern of red dots on a black background. The leaf is green and shows signs of being eaten, with several irregular holes. The background is blurred green foliage.

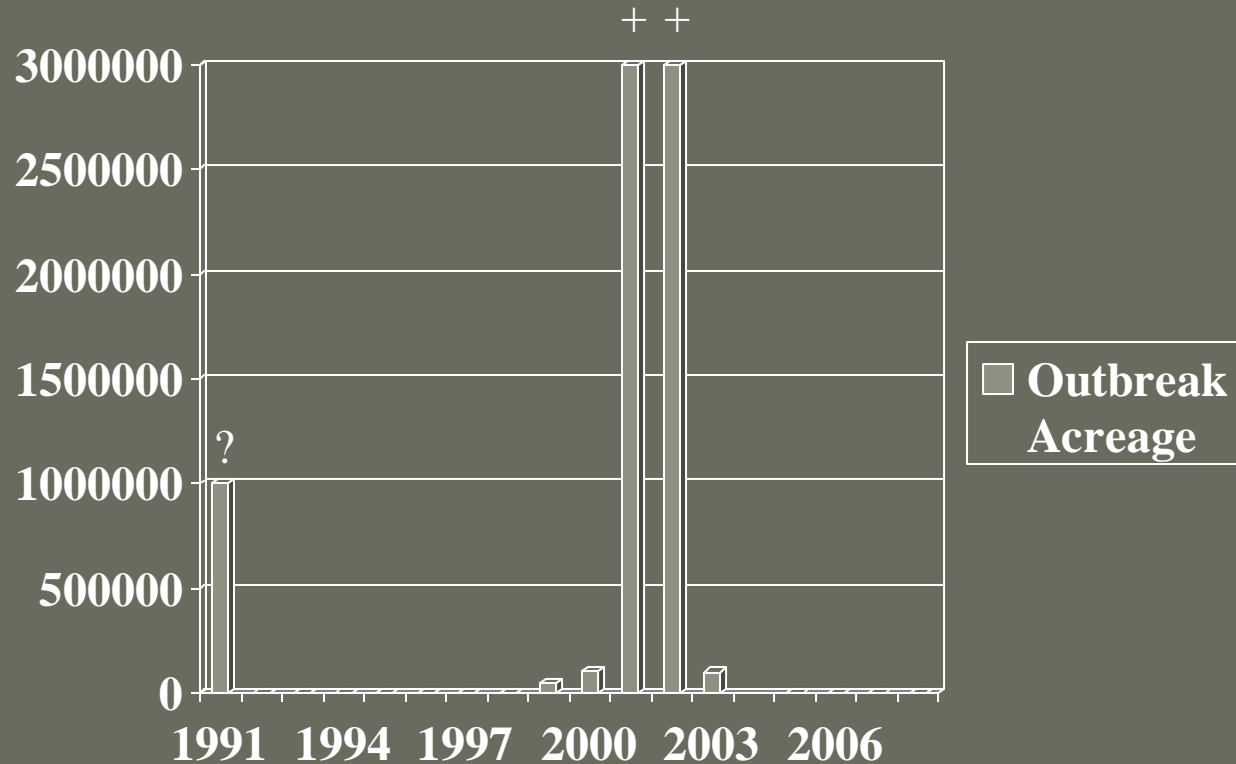
-
- Slow the Spread Treatment Sites - DATCP
- Suppression Program Spray Areas - DNR



More Gypsy Moth Information

- Get answers at 1-800-462-MOTH
- Report or ask questions to dnrfrgypsymoth@wisconsin.gov
- Visit <http://gypsymoth.wi.gov/> for more information

Forest Tent Caterpillar



Help is Available

Sick Forest Trees – contact DNR Forest Health Specialist or DNR Forester

Emerald Ash Borer Reports/Questions – call 800-462-2803, email DATCPEmeraldAshBorer@wisconsin.gov, or visit emeraldashborer.wi.gov

Gypsy Moth Reports/Questions – call 800-642-MOTH or visit gypsymoth.wi.gov

Ornamental Tree Questions – contact local extension office or certified arborist

Community Tree Questions – contact local arborist or urban forester (Don Kissinger, DNR urban forester, Wausau, 715-359-5793)

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MI's UP

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