

Planning for Management of Invasives on Public Lands



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Not to decide is to decide.

Invasives will cause losses and result in costs, your choice is how much and where.

Why make a management plan for an invasive?

- ❖ You will avoid making decisions in crisis mode.
- ❖ It can provide support when addressing public demands for action or objections to management options.
- ❖ Many management options require pre-planning or time to take effect.
- ❖ Having a plan can allow you to spread costs of management over time, focus your resources, and raise funds.

How to Develop a Management Plan for an Invasive

1. Identify goals for property.
2. Assess and inventory resource affected.
3. Determine risks and high risk areas.
4. Define and prioritize management areas.
5. Estimate time before resource is affected, develop a monitoring plan.
6. Select management tools.
7. Write management plan.
8. Obtain funding.
9. Communicate plan to staff and public.
10. Implement management plan.
11. Monitor results and adjust plan.



1. Identify goals for property.



- ❖ Recreation
 - ❖ Time of year
 - ❖ Level of use
- ❖ Timber production
- ❖ Wildlife and fisheries
- ❖ Water quality
- ❖ Aesthetics
- ❖ Endangered resource preservation
- ❖ Potential goal conflicts

What role does your property play in the overall ecosystem of the region?

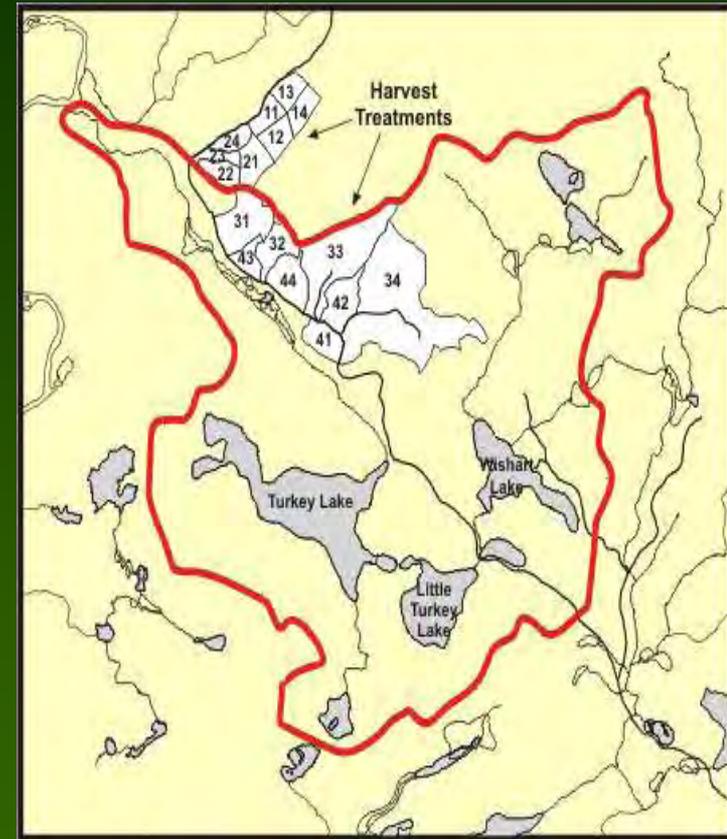
2. Inventory property- recreational areas

- ❖ Campsites.
- ❖ Picnic grounds.
- ❖ Beaches.
- ❖ Boat landings.
- ❖ Hiking, biking, horse trails, etc.
- ❖ Fishing streams.
- ❖ Nature centers.
- ❖ Parking lots.



2. Inventory property- ecological features

- ❖ Tree species composition.
- ❖ Density.
- ❖ Size or age class distribution.
- ❖ Regeneration.
- ❖ Soil type.
- ❖ Slope/aspect.
- ❖ Invasive plant abundance.
- ❖ Rare species affected by invasive or its management



3. Determine risks and high risk areas



❖ Susceptibility is the likelihood that the invasive will cause damage, for example defoliation.



❖ Vulnerability is the likelihood of tree mortality following damage from the invasive.

Susceptibility: ex Gypsy Moth

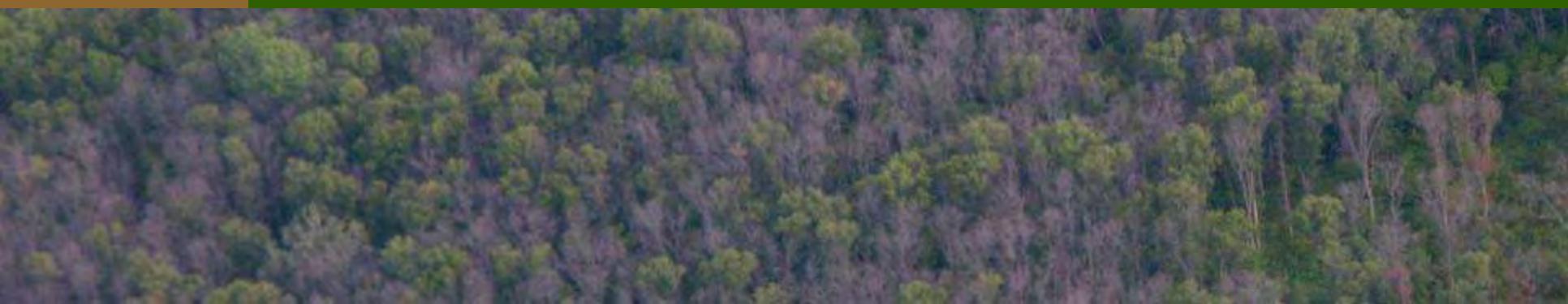


- ❖ Mostly determined by tree species, preferred species will be defoliated more frequently and severely.
- ❖ Can be influenced by factors affecting natural enemies such as ground cover and soil dryness.



Vulnerability: ex. Gypsy Moth

- ❖ Recent history of defoliation.
- ❖ Severity of defoliation, >50%.
- ❖ Vigor, suppressed trees die first.
- ❖ Drought or flooding.
- ❖ Recovering from thinning.
- ❖ Any other source of additional stress.



4. Define and Prioritize Areas for Active Management

- based on goals for the property

Ex. Gypsy Moth

- ❖ Can nuisance caterpillars be tolerated in an area?
- ❖ If an area is susceptible to defoliation, can this be tolerated?
- ❖ Would tree mortality be acceptable?
How much?

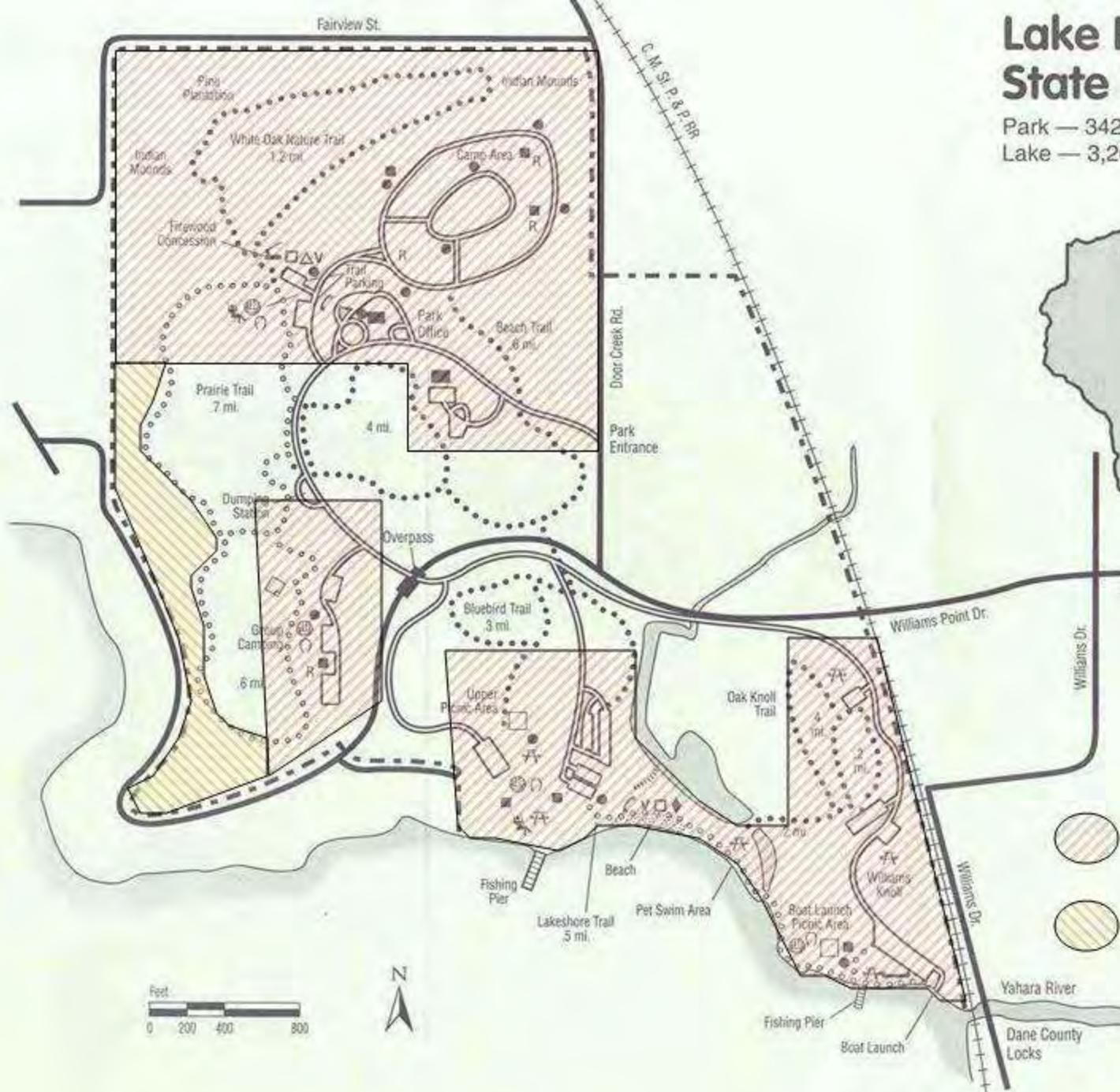
Factors to Consider in Selecting Areas for Active Management

- ❖ Amount of use by the public.
- ❖ Vulnerability of stand: stress level, economic value at risk, regeneration.
- ❖ Wildlife concerns: long term habitat, short term food.
- ❖ Water quality, mostly short term.
- ❖ Rare species or invasive plant concerns.
- ❖ Property goal conflicts.
- ❖ Financial constraints.
- ❖ Providing a buffer for private land.

Lake Kegonsa State Park

Park — 342 acres

Lake — 3,209 acres

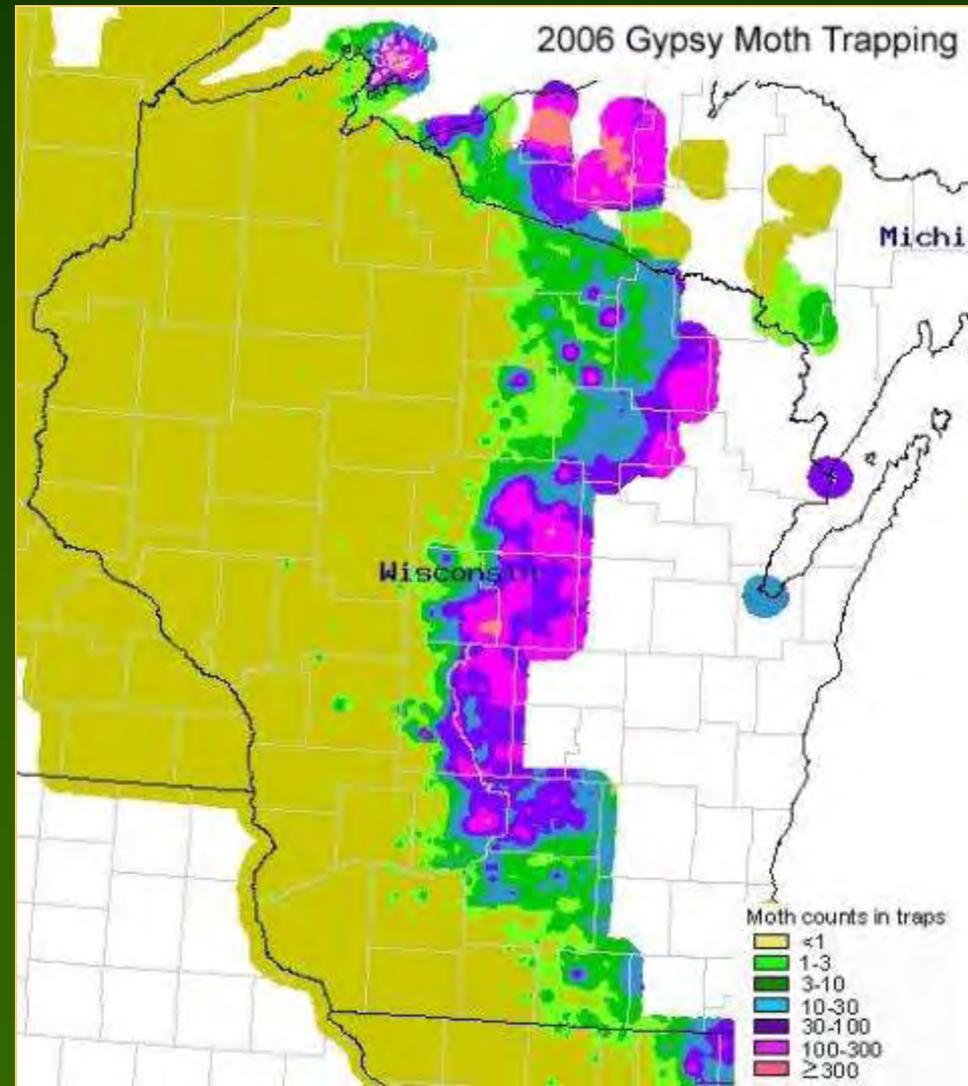


Key gypsy moth treatment zones

Lower priority treatment zone

5. Estimate time before resource is affected, develop a monitoring plan.

- ❖ Ask advice of state forest health staff, some invasives such as gypsy moth and EAB are monitored on a large scale.
- ❖ Monitor areas of your property where problems are likely to develop first.



Monitoring Your Property: High Risk Introduction Areas



- ❖ **Campsites**
- ❖ **Check-in Stations**
- ❖ **Shelters**
- ❖ **Picnic Areas**
- ❖ **Boat Landings**
- ❖ **Parking Areas**
- ❖ **Trail Access Points**

Areas where pest increase will occur first:

ex Gypsy Moth

- ❖ Suitable hosts - oaks, willow, lindens, birches
- ❖ Lack of enemies - manicured turf, asphalt, human activity.
- ❖ Dry south- and west-facing slopes.
- ❖ Proximity to an already established population



Sentinel Site Monitoring

- ❖ Select monitoring sites within areas where you would actively manage invasive.
- ❖ Monitoring can be stepped: walking survey followed by predictive or quantitative survey if invasive is seen.



Ex. Gypsy Moth

- ❖ Trap catches are no help in predicting defoliation of a particular stand.
- ❖ Visual survey of eggs or reports of larvae.
- ❖ 1/40th acre predictive surveys of egg masses done mid Aug-fall.
- ❖ Defoliation likely if avg. # egg masses/ac
 - > 500/ac in high use areas (>13/survey circle)
 - > 1000/ac in forests (>25/survey circle)
- ❖ Winter kill is insignificant.

6. Tools for managing the invasive.

Each invasive will have its own suite of management tools.

Ex Gypsy Moth

- ❖ No action, not needed or tolerate losses.
- ❖ Site Manipulations: silviculture, arborculture.
- ❖ Biological controls.
- ❖ Physical controls.
- ❖ Insecticide treatments.
- ❖ Education and communication.



No Action Needed



Site manipulation

❖ Forests

- ❖ reduce proportion of preferred species
- ❖ remove trees likely to die

❖ Landscapes

- ❖ replace lawns with natural landscaping
- ❖ plant non-preferred species
- ❖ promote tree health, reduce other sources of stress.



Biological Controls (Predators, Parasites, Pathogens)



- ❖ Will help slow population increase of GM, delaying outbreaks.
- ❖ Can't prevent or be used to treat outbreaks but may shorten the length of the outbreak.
- ❖ Effectiveness may depend on weather.
- ❖ No effort once established.

Physical Controls

- ❖ Useful for landscape trees but not suitable for forests.
- ❖ Destroying or oiling egg masses is labor intensive.
- ❖ Collection bands require daily tending during June.
- ❖ Highly visible, a great awareness tool for property management program.

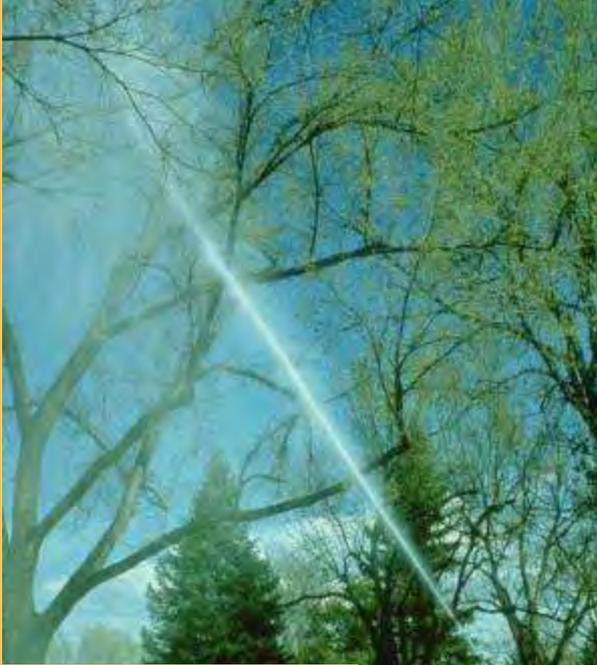


Insecticide treatments

❖ Use when damage is near certain and it and mortality could not be tolerated.

❖ Systemics and ground based sprays protect individual trees. Insecticides used may need to be persistent if reinfestation is possible.

❖ Aerial sprays are best for >20 acres. Non-persistent insecticides may be used if entire infested area is treated

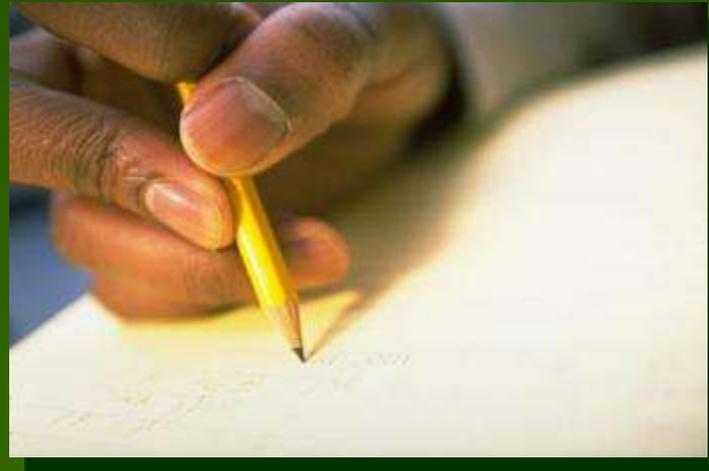


7. Write your management plan.

For a more detailed guide on writing a plan and examples from a variety of WI state lands, go to dnr.wi.gov/forestry/fh/copingwcosts.html

This page will be up until Oct 31

Plans can be short, don't go into more detail than you need. Make use of maps.



8. Obtain Funding

- ❖ Silvicultural options may pay for themselves.
- ❖ Check for state or federal cost sharing or grants.
- ❖ Depending on public exposure, pest control companies may donate some services.
- ❖ Volunteers.
- ❖ Save up over time for intermittent control needs.

9. Communicate plan to staff and public.

- ❖ The public will be more accepting of management activities or allowing impacts if they know there is a strategy.
- ❖ Have your staff understand the management plan and reasons for decisions, actions, or no action.
- ❖ Tools
 - ❖ Outreach by staff. Parks staff are the most trusted public source of information, use them!
 - ❖ Noticable management – physical controls, demonstrations.
 - ❖ Brochures, newsletters.
 - ❖ Signage campaigns.
 - ❖ Press releases.



10. Implement Plan



11. Monitor results and adjust plan as needed

For more information on management of gypsy moth and EAB

- ❖ <http://gypsymoth.wi.gov>
- ❖ <http://extension.entm.purdue.edu/GM/index.php>
- ❖ <http://www.ent.msu.edu/gypsyed/index.html>
- ❖ <http://emeraldashborer.wi.gov>
- ❖ <http://extension.entm.purdue.edu/eab/>
- ❖ <http://www.emeraldashborer.info/>

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