

Invasive Plant Management Plan

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Introduction

A. What is the problem?

Invasive plants pose serious ecological and economic threats to Wisconsin's forest resources, including tree mortality, reduction in growth, poor regeneration, and damage to wildlife habitat. They can limit recreational use and are difficult and expensive to manage once populations are established. An invasive plant is defined as a plant not native to the ecosystem under consideration (*i.e.*, nonindigenous) whose introduction causes or is likely to cause economic or environmental harm or harm to human health. Most nonindigenous plants were introduced for food, fiber, or ornamental purposes, and escaped cultivation with the unintentional assistance of humans or animals, or by water or wind. Introduced species are no longer regulated by the insects, fungi, disease, grazing, or competition that controlled them in their native habitats, enabling them to become established in natural plant communities and wild areas, replacing native vegetation. Most introduced species cannot thrive in Wisconsin's climate, and thus do not become invasive. However, the absence of natural enemies allow a few species to out-compete native vegetation and become problem species

B. What is the threat?

Invasive plants currently threaten all of Wisconsin's natural resources, from northern lakes and forests to oak woods and wetlands in the south. Each year, large acreages of Wisconsin's forests are overtaken by unwanted plants. More than 70 species of non-native plants are currently causing ecological and economic damage to a significant portion of our public and private forest land, and many more are on the way. Problems in neighboring states and in the northeastern U.S., where climates and soils are similar, indicate that future invasions are likely to be common and much more severe. Some species are already here, but are not yet widespread. Others are not yet present in Wisconsin, but are a very serious problem in nearby states, and are certain to arrive here soon. The arrival of additional invasive species and the spread of existing invaders pose a serious but poorly addressed threat to many of the resources that sustainable forestry protects, including biological diversity, forest productivity, soil and water quality, and socioeconomic values. These resources can be protected via a three-fold management

strategy: 1) preventing new introductions, 2) early detection and eradication of new infestations, and 3) long-term management of established populations.

C. Why create an Invasive Plant Management Plan?

Invasive plants pose number of management challenges for Wisconsin's state forests. State Forest land was set aside to preserve important watersheds and unique ecosystems. They provide recreational opportunities, habitat for wildlife and rare species, quality forest products, and serve as an example of sustainable management of forest resources. These benefits and resources are threatened by the spread of invasive plants. Management and control of these invaders is an important part of sustainable forestry principles that will ensure the economic, ecological and social benefits of Wisconsin's state forests for years to come.

The purpose of the State Forest Invasive Plant Management Fund is to support the State Forests' efforts to identify and manage invasive plant issues. This may include managing new outbreaks, controlling populations affecting regeneration, and identification and control of populations that are likely to spread. The Invasive Plant Management Plans are designed to aid State Forests in prioritizing and submitting projects for funding under the State forest Invasive Plant Management Fund.

PART 1- STATEWIDE PROGRAM PERSPECTIVE

1. INVENTORY

Wisconsin State Forests have a number of different invasive inventory systems, each meeting different needs.

The first system, established in 2006, called Wisconsin State Forest Invasive Plant Inventory (WisIPI), is specific to northern state forests. The IPI is not a comprehensive property inventory rather a focused inventory in places with a high likelihood of invasive introduction, e.g. recreation trails, campsites, etc. The inventory includes a spatial element (a single point) with an attribute for the size of the area as well as other detail information about the invasive species. Each State Forest has a completed inventory and associated spatial and tabular data. Data available at:

<http://dnr.wi.gov/forestry/GIS/Data%5FMaps/data%5Fdownload/#available>

The second system is the Wisconsin Forest Inventory and Reporting System, (WisFIRS). The purpose of this system is to inventory forest stands and schedule forest management activities. Invasive species was added as a viable to be collected at the stand level in 2007. The inventory attributes include the ability to record up to 4 invasive species, and the density of each species.

The third system is WisCFI, a systematic continuous plot inventory across all state forests. The annual inventory includes invasive species information for each plot. The system is not used to identify management practices.

Objective: Maintain and update WisIPI property spatial and tabular invasives inventory as needed.

Action: Identify opportunities to enhance the usability for maintaining and adding new information in the existing WisIPI data base.

Action: Develop training materials for property staff to understand how to keep WisIPI inventory updated.

Action: Provide data to internal and external partners through the web.

Action: Evaluate the value of the initial attributes and identify missing attributes and refine as needed.

Action: Evaluate the attributes in the southern forest inventory system and the northern forest WisIPI and identify opportunities to merge the two.

Action: Evaluate opportunities to integrate WisIPI into existing land management information systems (e.g. WisFIRS).

Action: Incorporate Great Lakes Indian Fish & Wildlife Commission (GLIFWC) data into invasive species inventory database.

Objective: Include invasive species information in forest recon.

Action: All recon stands evaluated should be inventoried for invasives.

Action: Define forest recon inventory reporting needs and develop a core report in WisFIRS.

2. PRIORITIES

A common first priority in invasive plant management is to limit the introduction of species; the second is to limit the spread. The most effective means of managing invasive plants is preventing them from establishing in the state, and then a particular property.

Objective: Inform the forest staff on the invasive plants that pose the greatest threats.

Action: Develop a communication network that lists the species of greatest concern and the movement of such.

Objective: Complete the actions in order to assist the state foresters in prioritizing invasive plant management.

Action: Maintain comprehensive invasive inventory on state forests

Action: Develop statewide and property specific invasive management plans

Action: Control invasive species

Action: Monitoring control efforts

Action: Educate staff and public on invasives on the horizon, as well as existing populations on the move.

3. CONTROL PLAN

Objectives: Develop a control plan based on statewide priorities and threats.

Action: Ensure that the property specific plan is consistent with the potential threat a species has to a property.

Action: Ensure that the property specific plan is consistent with the distribution and movement of invasive species.

4. MONITORING

Monitoring is the periodic inspection of post-activity sites that will evaluate the success of invasive species management plans and consequently help detect new invasions early. Monitoring programs should be simple and integrated into other routine activities such as reforestation surveys whenever possible.

Objective: Monitor and document control work.

Action: Identify monitoring needs and design a system to capture information.

Action: Develop a system to store control activities and track over time.

5. TRAINING, EDUCATION AND OUTREACH

Objective: Provide the tools necessary to educate staff on identification and control of invasive plants.

Action: Develop curriculum that staff can use to train staff.

Action: Train/inform property staff on the identification of invasive species.

Action: Train/inform property staff on the new control methods of invasive species.

Action: Inform our publics and partners on the importance of and mitigation techniques for invasive control through kiosks and discussion with user groups.

6. PARTNERSHIPS

Establishing partnerships is an excellent way of adding to resources designated to invasive plant management.

Objective: Maximize resources to manage invasive plants by utilizing partnerships.

Action: Identify local partnerships opportunities to participate in regional invasives efforts.

Action: Inform the appropriate property when a new regional Cooperative Weed Management Area (CWMA) is formed.

7. LEGAL AND POLICY

This includes codes, rules, policy and guidance that apply to or include invasive plants.

Objective: Ensure staff is updated on existing and new policies as they arise.

Action: Provide existing statutes, manual codes, handbooks, others that apply to invasive plant and their management and update as they change or are added to.

Action: Ensure property master plans authorize the control of invasive species in appropriate places using appropriate techniques.

8. FUNDING OPPORTUNITIES

Objective: Be an informational resource to assist in the search for funding.

Action: Identify funding needs to implement property plans.

Action: Provide funding sources to implement property plans.
(Including Wildlife and Endangered Resources funding)

PART 2- PROPERTY SPECIFIC PLANS

The property specific invasive species management plan is for the property manager or the forester(s) of each property, as well as individuals or organizations identified in “partnerships” below. The objectives, projects, and level of detail within each plan will vary depending on property needs.

Background on the Property

The Peshtigo River State Forest lies approximately 20 miles northwest of Crivitz, Wisconsin in central Marinette County. The Potato Rapids portion of the property—20 miles to the southeast of the rest of the forest—is approximately three miles north of the town of Peshtigo. Established in 2001, the Peshtigo River State Forest is the smallest of Wisconsin’s northern state forests, comprising more than 9,200 acres. Bordering the newly-created Governor Thompson State Park, the property is long and linear in shape, and surrounds the Peshtigo River and associated flowages from Roaring Rapids to an area northwest of the Sandstone Flowage. The property borders approximately 25 miles of the Peshtigo River including: Caldron Falls Flowage, a 1,180-acre reservoir; High Falls Flowage, a 1,670-acre reservoir; Johnson Falls Flowage, a 158-acre reservoir; the Fly Fishing Stretch of the Peshtigo River; and Potato Rapids Flowage, a 281-acre reservoir located downstream.

Located in an area with abundant publicly owned lands including county forest lands, the Chequamegon-Nicolet National Forest, and the Governor Thompson State Park, the Peshtigo River State Forest is an excellent addition to the regional amenity base. Wisconsin Public Service Corporation (WPSC), a natural gas and electric utility, was the former owner of the property and still maintains ownership of property adjacent to Peshtigo River State Forest, most notably along High Falls flowage and Caldron Falls. Private landholdings are scattered along the current forest boundary. The Peshtigo River has been identified as a Land Legacy Place by the Wisconsin Land Legacy Report (WDNR 2006). The Land Legacy Report identifies the places most important to meet Wisconsin’s conservation and recreation needs over the next 50 years.

1. PRIORITIES

A. INVENTORY AND MAPPING

Good inventory practices can keep long-term control costs down by ensuring that new infestations are detected early. The 2006-2007 State Forest Invasive Plant Inventory (SFIPI) was the beginning of an effort to inventory the extent of invasive plants on state lands. It is critical that land managers continue these efforts by integrating invasive plant inventory into standard operations allowing them to maintain knowledge of existing invasives and their locations within the property and detect new populations early. Inventory priorities include areas that are susceptible to invasion, such as transportation corridors and recently disturbed areas, and ecologically sensitive areas that may not withstand invasion..

There were several different invasive species observed in the Peshtigo River State Forest during the 2006-07 inventory. While many were naturalized weeds and species of lesser concern, there were several species that are considered highly invasive. These species are non-native honeysuckle (*Lonicera spp.*), Japanese knotweed (*Polygonum cuspidatum*), Spotted Knapweed (*Centaurea biebersteinii*), and Leafy Spurge (*Euphorbia esula*).

Non-native Honeysuckles – The PRSF has a long history of intertwining land ownership and private landscaping. As a result, landscaping shrubs, especially honeysuckle, are becoming increasingly common within the forest. These shrubs are beginning to dominate the forest understory in some areas.

Leafy Spurge - Leafy spurge is the most common invasive plant in the Peshtigo River State Forest (PRSF), and is pervasive in most dry, open areas. At this stage control of this species will require a widespread effort; a CWMA maybe appropriate for this area.

Spotted Knapweed – This plant was found throughout the PRSF. It was commonly found in those open areas not dominated by leafy spurge.

Japanese Knotweed – At least 1 population of Japanese Knotweed is known to exist within the Peshtigo River State Forest. Knotweed spreads rapidly by rhizome forming large dense thickets that eliminate native vegetation and wildlife habitat. It can be easily spread by water or movement of contaminated soil and eradication should be a priority.

Japanese Barberry – There are at least 2 populations that are known, although on 8-25-10, we were unable to find one of them, however previously, Dan found another while scouting near Bizjak Rd. There are likely more populations on the forest.

Autumn Olive- Although one population was noted on the inventory (maybe more), we observed a population which will be impacted by a harvest in the fall of 2011.

Siberian Peashrub- It is known in a couple areas in disturbed areas. Evidence is clear that it is spreading in the disturbed area, but not into the less disturbed woods.

Inventory and Mapping Objectives: Identify property priorities and opportunities for inventory and mapping of invasive plant species, including identification of areas needing inventory and opportunities for updating the WisIPI.

Inventory and Mapping Projects for the Peshtigo River State Forest:

1. Make invasive plant inventory part of all timber sale planning. Complete a pre/post timber sale inventory as an early detection measure. Survey of roads and landings within the harvested unit. If possible, inventory should be done twice a year once in the spring and once in the fall for active timber sales, and once a year in the spring for previously harvested timber sales.
2. Include invasive plant inventory in forest recon stand updates using existing WISFIRS stand based inventory system
3. Identify additional areas to be inventoried using the WisIPI and update WisIPI as opportunities exist.
4. Do pre/post project inventories for activities where there is potential for introduction and spread of invasive plants, including trail reconstruction, parking lot construction, etc. This should be done twice a year in the spring and fall.

B. CONTROL, RESTORATION, AND MONITORING

Control Objectives: Control invasive plants that impact regeneration and threaten to spread. Those areas that are at the early stages of invasion should be target for control before the severe infections. High quality areas should be priority for treatment.

Control Projects for Peshtigo River State Forest:

1. Eradicate Japanese knotweed populations on the forest.
2. Control honeysuckle in high use recreation areas.
3. Control the spread of leafy spurge and spotted knapweed in ecologically sensitive areas.
4. Evaluate invasive control needs when establishing timber sales and include mitigation actions during sale preparation, during and post harvest.
5. Determine any areas with physical limitations, herbicide limitations, mechanical limitations, or labor limitations that will affect the control of invasive plant species.

Notes and priorities from 8-25-10 visit:

Japanese Knotweed - The discovered population has resprouts that should be treated this fall in the same manner as the last treatment. I recommend placing some seed on the area to help compete with the other invasives that are moving in. There should be many options for species in the back of the Forestry BMP Manual in Appendix H. Scouting for more populations should continue. If you could find out what Kevin Nelson used last time for treatment and at what rate, it would be helpful given the residual damage we saw.

Japanese Barberry – For the pre-harvest site we visited on 8-25-10, I recommend having the contractor treat everything he can as soon as the leaves drop sooner than other invasives. Kevin Nelson has done many foliar treatments for Colleen and he uses Element 3A (triclopyr) with a surfactant. This will require follow up next year as well to address seedlings and any missed plants. Colleen

confirmed that there will be a flush of barberry post harvest, so it is best to treat it now.

I also recommend scouting the area around Thunder Mountain land frequently to see if the plant is spreading from there and if nothing else, maybe contact them to treat the ones along the road to prevent the spread of seeds from mowing.

Autumn Olive- This population should be cut down and treated as soon as possible via cut stump treatment to avoid the seeds from maturing and dropping. The brush should be moved away from the area that will be impacted by the logging operation. The harvest contract should include language or at least discuss the fact that the area will contain seed and precautions should be made to limit the spread, this includes cleaning equipment, grading and plowing that area then lifting the blade once out of the area to keep the seeds where they are there.

Siberian Peashrub- The area by the dam where it was observed on 8-25-10 should be planned for treatment as soon as feasible. Colleen confirmed that it is aggressive and could move into the hardwood stand in time. I recommend jumping on it to minimize control cost. Triclopyr can be used on this as well. It may be worth while talking with WPS to see if they would be willing to treat the populations on their land.

Bittersweet- We were uncertain if the bittersweet was native or invasive, I recommend checking on it every two weeks until the fruits are developed, so you can determine which species it is.

Houndstongue- Although we couldn't find this plant, it is worthwhile checking on. I don't think it needs to be done this year, but certainly next. It flowers June through July. There is also a GPS point for it if you get desperate. We can discuss the plan for it once it is found.

Non-native Honeysuckles – While the barberry work is going on off Bizjak Rd., honeysuckles should be treated in that area as well, if the infestation is not too great, which I do not believe it is.

Example Treatment Options:

- Chemical Control
- Cut-stump treatment
- Basal bark
- Foliar
- Girdling
- Biological Controls
- Manual
- Controlled Burns
- Spot Treatment with Fire

Ecological Restoration Objectives: Restoring native vegetation to degraded sites. The restoration process involves the following: analyzing the site and natural communities in the area, determining goals of the restoration, research and background info, determining whether to seed or allow adjacent vegetation to establish, and monitoring.

Restoration Projects for Peshtigo River State Forest:

1. List possible restoration projects, if any.

Monitoring Objectives: Monitor areas of previous infestations that have undergone control measures. Report monitoring of control efforts to the program coordinator (Tom Boos).

Monitoring Projects for Peshtigo River State Forest:

1. Monitor success of attempts to eradicate Japanese knotweed populations.
2. Monitor success of honeysuckle control efforts.
3. Monitor status of leafy spurge and spotted knapweed in ecological sensitive areas.
4. Monitor high recreational use areas i.e. campgrounds, hiking and trails.
5. Monitor invasive species status when conducting regeneration checks.
6. Identify monitoring needs for invasive species control tracking.
7. **Please submit annual summary of control efforts to Tom Boos.**
8. Submit annual herbicide report to the appropriate person in your region. Refer to [Manual Code 4230.1](#) to determine who that is. It should be the same person that approves the herbicide application. It is also required to enter the herbicide application information into the Chemical Use Report Database.

C. TRAINING, EDUCATION AND OUTREACH

Training Education and Outreach Objectives: Provide the tools necessary to educate staff and the public on invasive plants and their management. Incorporate prevention measures and early detection strategies into work plans.

Training, Education, and Outreach Projects for Peshtigo River State Forest:

1. Develop training program/materials for property staff on the identification and control strategies for invasive species.

- Learn to recognize the invasive plants that are present within the property
 - Learn to recognize some invasive plants that are not yet present or in low numbers on the property
2. Develop educational materials:
 - Develop invasive plant information kiosks in appropriate areas
 - Set up invasive plant display with brochures at the main office
 - Develop signs describing control efforts where practical
 - Develop naturalist series presentations on invasive plants
 3. Develop an outreach program:
 - Work with adjacent landowner(s) cross-boundary infestations when necessary
 - Work with friends group on invasive species identification, location, and control needs
 - Identify local groups or volunteers interested in invasive control project
 4. Install signs and boot cleaning stations at appropriate locations within the Forest.
 5. Establish demonstration plot or trials to educate the public on removal.
 6. Implement Forestry Best Management Practices for Invasive Species (i.e. prevention, cleaning equipment, staff training etc.)

D. PARTNERSHIPS, RESEARCH, POLICY

Partnerships, Research and Policy Objectives: Maximize resources to manage invasive plants by forming and utilizing partnerships, remaining apprised of invasive plant legislation, ordinances and guidance, and by seeking funding for research projects.

Partnership, Research, and Policy Projects for Peshtigo River State Forest:

1. Look for CWMA opportunities – especially for leafy spurge.
2. Identify contractors that have experience working with invasives. Keep a current list of contractors who can do inventory, control and monitoring.
3. List any legal and policy issues that apply to the property
4. Organize tours for internal WDNR and government officials to show the impacts of invasive plants first hand. Depending on how large one of the invasive infestation is, this would be an opportunity to showcase effort in inventory and control on the state forest.
5. Explore options for local, regional and state funding to control invasive plants and list the resources.
6. Submit projects for special state forest funding
 - The gypsy moth fund can cover invasive species projects.
 - Federal funding through grants is available.
 - Partnership with local weed cooperative can provide opportunities.

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