

Invasive Plant Management Plan

Table of Contents

Introduction

Part 1- Statewide Program Perspective

Part 2- Property Specific Plans

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 Brule River State Forest (BRSF) is located in Douglas County in northwest Wisconsin. The BRSF is over 40,000 acres in size, and encompasses the entire 44 mile stretch of the Brule River, one of the most famous trout streams in the state. Five US Presidents have visited the Brule River and today over 120,000 outdoor enthusiasts visit the state forest annually. The road density is relatively high north of US HWY 2 which divides the forest in half. The southern half has a low road density with only a few roads entering the state forest. North of US HWY 2 the state forest becomes narrow and elongated. The forest’s Eastern border is formed by CTY HWY H and State HWY 13, the Western border is formed by Clevedon Rd, and there are numerous smaller roads branching off of these two main roads. The surrounding lands are mostly forested and are in private ownership. Recreational opportunities include canoeing, kayaking, biking, horseback riding, hiking, camping, fishing, cross country skiing, snowmobiling and ATVing.

Forested cover types account for about 73% of the BRSF. Aspen is the most common cover type followed by red, jack, or white pine, swamp conifers, white birch, swamp hardwoods, and hardwoods. A large percentage of the forest is in the Bayfield Sand Plain and the Superior Clay Plain Land Type Association. The Brule River has good conditions for the use of prescribed fire as a management tool to control invasives.

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 BRSF during the 2006-07 inventory. While many were naturalized weeds and species of lesser concern, there were still several species that are highly invasive. These species are spotted knapweed (*Centaurea biebersteinii*), common reed grass (*Phragmites*

australis), common buckthorn (*Rhamnus cathartica*), common tansy (*Tanacetum vulgare*), and non-native honeysuckle (*Lonicera spp.*).

Buckthorn spp. – Common buckthorn (*Rhamnus cathartica*) and glossy buckthorn (*Rhamnus frangula*) were observed in the BRSF. The infestation appears to have come from the Village of Brule and the surrounding area. The buckthorn population was located in the campground by the ranger station and was well established from the HWY 2 Canoe Landing to the Pine Tree Canoe Landing. This species is the greatest threat to the BRSF and the river corridor due to its rapid growth and spread. This plant will quickly displace native vegetation.

Exotic Honeysuckle – This species was observed in the same areas as the buckthorn and has quickly become the dominant shoreline vegetation in the area. The source of the infestation is likely the Village of Brule and surrounding areas. There are a few isolated patches down stream.

Common Reed Grass - This plant was observed in virtually all moist areas. This species is can be very difficult to control and manage; multiple treatments and many different types of control are often needed.

Common Tansy – Tansy was mostly found in the drier sites along roadsides and parking areas. It spreads quickly by seeds and short rhizomes. The plant has already been observed displacing native vegetation.

Spotted Knapweed – This plant has invaded all roadsides and ditches south of Brule with one small patch in and around the ranger station and fish hatchery. It has also invaded a private gravel pit south of Brule which is contributing to its spread.

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, as opportunities exist, including invasive inventory when planning timber sales, and including invasive inventory when updating forest recon stand updates using existing WISFIRS stand based inventory system.*

Inventory and Mapping Projects for Brule River State Forest:

1. Incorporate invasive plant inventory into 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 invasive species are present they should be eliminated before the sale takes place. This will make the control work easier, and it will remove the species before disturbance occurs. This disturbance creates favorable conditions for its growth and expansion.
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.
5. Look for the population(s) of Dame's rocket and attempt to eradicate as a top priority.
6. Keep an eye on the Siberian peashrub population at the end of Summer Road, to make sure it doesn't spread into the forest.
7. Locate the Bishop's goutweed population and keep an eye on it to make sure it doesn't spread into the forest.
8. Keep an eye on some of the garden forget-me-not populations along trails and other high use areas to monitor the spread.

B. CONTROL, RESTORATION, AND MONITORING

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

Control Projects for the Brule River State Forest:

1. Control and remove buckthorn and honeysuckle from the riparian area. Specifically the area from the HWY 2 Canoe Landing north to the Pine Tree Canoe Landing. These two species are being spread by birds eating the seeds, among other vectors.
2. Control buckthorn. The Brule River State Forest buckthorn control priorities are as follows:
 - a. Timber sales with regeneration concerns
 - b. State Natural Areas
 - c. Native Community Areas
 - d. Forest Production Area stands occurring in 65,000 acre main block
 - e. Seed bearing individuals in 3,000 acre small block

In the areas where a timber harvest is planned, experimentation may be the best bet. I recommend mowing an area beforehand to determine how likely it is to follow-up with a foliar application to the resprouts. This will minimize herbicide use and time. Mowing, brush sawing and fecon work will add the same benefit.

3. Removal of buckthorn from the Bois Brule Campground and the surrounding village of Brule WI.
4. Burn and re-spray the Lamprey Field area for spotted knapweed control and then re-plant.
5. Scout any recent timber-sales and treat as necessary for any invasive species present.
6. Control and treatment of spotted knapweed in and around the ranger station buildings.

7. Work with township and privately used gravel pits to control the spread of spotted knapweed, and release bio-control larvae in the Troy Pit RD area.
8. Determine any areas with physical limitations, herbicide limitations, mechanical limitations, or labor limitations that will affect the control of invasive plant species.
9. Attempt to eradicate Dame's rocket as a top priority. It is highly invasive and relatively uncommon in the north woods, thus important to control upon detection.

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 Brule River State Forest:

1. BRSF has no planned restoration projects at this time

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

Monitoring Projects for the Brule River State Forest:

1. Monitor success of attempts to reduce or eliminate buckthorn and honeysuckle in the river-way between the HWY 2 Canoe Landing and the Pine Tree Canoe landing.
2. Monitor high recreational use areas i.e. ATV trails, campgrounds, hiking and horseback riding trails.
3. Monitor invasive species status when conducting regeneration checks.
4. Identify monitoring needs for invasive species control tracking.
5. Please submit annual summary of control efforts to Tom Boos
6. 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 Brule 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 and pose threats to the forest
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) on Buckthorn and Honeysuckle removal
 - Work with the friends of the Brule River, Brule River Sportsman club, Brule River preservation inc. on invasive species identification, location, and control needs
 - Enlist the local Northwoods Cooperative Weed Management Association in a regular (i.e. annual, semi-annual, etc) weed control day
 - Identify local groups or volunteers interested in invasive control projects.
4. Install signs and washing stations at ATV trailheads and Canoe Landings for washing of waders or appropriate locations within the Forest.
5. Establish demonstration plot or trials to educate the public on removal i.e. the Lamprey field.
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 Brule River State Forest:

1. Participate in Northwoods regional CWMA consortium and work with the basin educator.
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 Upper Chippewa Cooperative Weed Management Area can provide opportunities.

Appendix



