

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. This needs to be reworded – recon is accomplished 12 months of the year and invasives obviously can not be inventoried year long

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 property staff in prioritizing invasive plant management. A small technicality but there is only one state forester by title and that is Paul DeLong

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 Black River State Forest is located in central Wisconsin in the Eastern Broadleaf Forest Province which occupies the southern half of the state. The Black River State Forest was established in 1957 after the federal government conveyed 59,000 acres of forest land to the Wisconsin Conservation Department in 1955. Through further land purchases, the forest has grown to its present size of 67,869 acres. The original area within the Black River State Forest, which consisted primarily of white pine and red pine, was heavily logged between 1880 and 1895 and was later settled by homesteaders seeking farmland. Today the forest consists of a mix of white pine, jack pine, oak, and aspen with white pine’s representation steadily increasing in the understory and canopy. During the late 1930’s the Resettlement Administration, using Works Project Administration labor, began a project to develop a series of earthen dikes within the forest. This project changed the hydrology of the area by creating large shallow impoundments within the wetland complex of the state forest. Over 90% of the impoundments created during this time are still present on the state forest today.

Over 300,000 visitors use the forest annually (WDNR 2004). There are 48 miles of snowmobile trails that link with an extensive county trail network. In the 1970s, ATV use was permitted on 33 miles of the existing snowmobile trail system. Today, ATVs are one of the fastest growing recreation activities in Wisconsin and on the state forest. Cross-country skiing, backpacking, hiking, camping, and mountain biking are also popular recreational activities within the forest. Black River State Forest also provides hunting for whitetail deer, ruffed grouse, wild turkey, waterfowl, bear, and a variety of small game. Fishing is popular on the Black River, East Fork of the Black River and on various flowages found throughout the state forest.

The Black River State Forest contains a variety of forest communities that differ in composition and structure depending on site-specific factors like soil type, soil moisture and nutrient levels, landform, disturbance regime, and historical events. Although oak and aspen are important timber types in the forest, pines dominate in this landscape. When the state forest was established in 1957, the jack pine timber type surpassed all pines representing more than 33% of the forest cover while white pine, the most indigenous species, consisted of only 6% of the acreage. Associated with upland sites from dry to dry-mesic, jack pine was also found extensively on a range of moist to wet forest conditions. The widespread jack pine was due to its pioneer ability to capture burned over landscape once farming ceased and fire suppression began in the 1930’s. Second growth white pine following the logging era of the 1880-90’s was mostly relegated to moist (stream terraces) sites and wet areas (swamps) that allowed them to

survive wildfires of the settlement period (1900-1930's). These remnant pockets have been the primary seed source for white pine to regain prominence. Today, white pine is 19% of the property's acreage and now surpasses jack pine acreage. Throughout the nearly 50 years of the Black River State Forest's establishment, oak, aspen, and red pine acreage percentages have remained fairly constant.

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 Black River State Forest 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 garlic mustard (*Alliaria petiolata*), spotted knapweed (*Centaurea biebersteinii*), glossy buckthorn (*Rhamnus frangula*), oriental bittersweet (*Celastrus orbiculata*), non-native honeysuckle (*Lonicera spp.*), and reed canary grass (*Phalaris arundinacea*).

Glossy Buckthorn – Glossy buckthorn is among the most serious infestations on the Black River State Forest. This species currently dominates the forested areas surrounding the campground and trails at Castle Mound. It is also common in Perry Creek Park, at the canoe landing near Mission Road, and along Hunter Haven Road. Small populations were found along Hall's Creek and at the canoe campsites south of Mason's Landing. In addition, a small population of common buckthorn was located in the Pigeon Creek area. Some buckthorn control efforts are underway, however this species remains a serious problem and a priority. **This section needs considerable rewording. We have learned that Buckthorn is much more common than the 2006-2007 inventory alluded to. Buckthorn is common throughout the entire 3,000+ acre block that is west of the interstate.**

Garlic Mustard – Garlic mustard is found in a few locations on the Black River State Forest. A relatively large population was located in Pigeon Creek campground at sites 12, 27, 29, and 34. Small populations were identified in East Fork Campground behind the informational kiosk and in the Smrekar/Wildcat

area. Eradication of these populations should be a priority since they are currently at a stage that will not require a large allocation of resources for eradication.

Oriental Bittersweet – A small population of this species was located in the Castle Mound area. This species poses a serious threat to forested areas and eradication should be a high priority.

Non-native Honeysuckle- A large population of non-native honeysuckles was located along the road to the canoe campsites south of Mason’s Landing. In addition, scattered satellite populations were observed among the campsites and along the river. Smaller populations of honeysuckle were located in the Smrekar/Wildcat area, Perry Creek Park, Pigeon Creek, Scattered along the road to Mason’s Landing, and in the Dike 17 wildlife area. This species can pose a significant threat to forested areas and control should be a priority.

Reed Canary Grass- This species is fairly widespread on the Black River State Forest. Large, sometimes landscape scale, populations were located along Hall’s Creek, the canoe landing near Mission Road, and the canoe campsites south of Mason’s Landing. Other significant populations were observed along the Black River at Perry Creek Landing, Pigeon Creek campground, castle Mound campground, group camp, East Fork Campground along the river, Mason’s Landing, and Oxbow Pond. This species poses a significant threat to waterways, wetland areas, and other lowlands including mesic and wet forest areas,

Spotted Knapweed – This plant is widespread throughout Black River State Forest. It is found in the Smrekar/Wildcat area, Perry Creek Park, Pigeon Creek, along horse, bike, and ATV trails, at the horse and group campsites, Oxbow pond, Mason’s Landing, Dike 17 wildlife area, in a few recently logged areas, and along many roadways within the forest. Spotted knapweed can be controlled, but it usually requires an integrated approach of bio-control, chemical treatment, and carefully planned mowing. It is a threat to disturbed areas and open habitats.

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 Black 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. This may be ideal but is not practical given our current level of resources. What is practical and likely is that all timber sales will be evaluated in the summer during the same period that we do lupine/Karner Blue Butterfly checks. Sales

will be evaluated during regen checks and when sales are active during the growing season – most sales are active in winter.

2. Include invasive plant inventory in forest recon stand updates using existing WISFIRS stand based inventory system Ok I am confused as where we were going to keep record of invasives was discussed at a couple of State Forest Working Group meetings but nothing was ever settled on. Is it WisIPI, is it Wisfirs, is it a hybrid of both?
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. A note that this could/should be included with the biannual safety inspections is a good idea.

B. CONTROL, RESTORATION, AND MONITORING

I find this section somewhat unclear as no place does it state what is the ranking of priorities – is the statement under control objectives is it the six points under projects? I think it clearly needs to state this.

Control Objectives: Control invasive plants that impact regeneration this is the #1 priority in my opinion 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 Black River State Forest:

1. Eradicate garlic mustard populations on the forest.
2. Eradicate population of oriental bittersweet at Castle Mound.
3. Control buckthorn in high use recreation areas. The Castle Mound infestation should be a high priority, and this should be done in cooperation with State Forest staff and other sources of labor. Not sure I agree with this point now that we have better picture of extent of buckthorn on property. I think in the 3000 acre block that includes Castle Mound we need to focus primarily on timber sales where invasives might threaten regeneration efforts. Outside of this the only other invasives control I could see is to go after seed bearing individuals – not sure if this is a good use of resources though either. I think in the 65,000 acre big block of the property seriously denting populations such as spot eradication is more of an option.
4. Control populations of non-native honeysuckle in high use areas.
5. Evaluate invasive control needs when establishing timber sales and include mitigation actions during sale preparation, during and post harvest.
6. Determine any areas with physical limitations, herbicide limitations, mechanical limitations, or labor limitations that will affect the control of invasive plant species.

Example Treatment Options:

Chemical Control

Cut-stump treatment

Basal bark

Foliar

Girdling

Biological Controls

Manual

Controlled Burns (is a good control measure on the NHALSF) If the permission and qualified people on hand, NHAL is a good place to control burn.

Spot Treatment with Fire Remove statements about NHSL

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 Black River State Forest:

1. List possible restoration projects this would include evaluating sites identified for barrens restoration for invasives and in native community areas and particularly in state natural areas

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

Monitoring Projects for Black River State Forest:

1. Monitor success of attempts to eradicate garlic mustard and oriental bittersweet populations.
2. Monitor success of buckthorn control efforts.
3. Monitor the spread and size of the Buckthorn infestation in and around Castle Mound. Its all over and surrounds our border so I don't see the point of this
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

I think a lot of this section could be moved to statewide portion. It should be central office's role to educate us, dispense materials, etc.

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 Black River State Forest:

1. Develop training program/materials for property staff on the identification and control strategies for invasive species. See comments above
 - 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 we don't have a naturalist and will likely never have one – current budget crunch has documented that naturalist, public education is a low priority in the Department.
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 this would not fall under the list of activities that our Friends group would have any interest in
 - Identify local groups or volunteers interested in invasive control project
4. Install signs and boot cleaning stations at appropriate locations within the Forest. I don't see us doing this in future – should not be listed as a we will do but as a we will consider
5. Establish demonstration plot or trials to educate the public on removal. Not practical given our level of resources
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 Black River State Forest:

1. Look for CWMA opportunities.
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.

1.



