

# **Northwoods Cooperative Weed Management Area Management Plan**

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Ratified: August 9, 2007

## **INTRODUCTION**

The Northwoods Cooperative Weed Management Area (NCWMA) is a multi-agency and community relationship, created to effectively coordinate and implement management and eradication of invasive terrestrial and aquatic plants. Participation in the NCWMA is voluntary.

## **PURPOSE and BACKGROUND**

The Northwoods Cooperative Weed Management Area wishes to be dynamic in its approach to its goals. As new research, national priorities, or regional threats may come in the future, the NCWMA Management Plan may modify its methods to accommodate these changes.

1. The Northwoods Cooperative Weed Management Association is committed to cooperation between signatories and cooperators listed on the signed Memorandum of Understanding (MOU) of May 2006.
2. The Northwoods Cooperative Weed Management Association is committed to the use of Integrated Weed Management methods, including mechanical, chemical and biological treatments.
3. The Northwoods Cooperative Weed Management Association will rank noxious weed management priority efforts as follows:
  1. PREVENTION of new introductions via EDUCATION;
  2. CONTROL of new invaders or new infestations; and
  3. CONTAINMENT and management of established stands.
4. The Northwoods Cooperative Weed Management Associations commits to these activities and association for five years from the most recent signing of the MOU.

The MOU expires five years from the effective date at which time it will be subject to review, renewal, or expiration. If the Interested Parties mutually agree to continue cooperation, a new agreement shall be executed and signatures required. Any Interested Party may withdraw from this agreement at any time before the date of expiration by providing 30 days written notice to all signatories.

### **NCWMA Partners**

The NCWMA recognizes the importance of cooperation among all stake holders. Two categories of participants are included in the MOU. Signatories are those entities where official policy dictates a legal review of the MOU document. Cooperators are those

partners who chose to participate, but on a less formal level. Regardless of status, all parties are encouraged to participate. The NCWMA will focus its efforts to include the widest audience possible in its annual work plan. The NCWMA will also actively recruit new participants in its activities and target non-participatory portions of the NCWMA community in education and outreach activities. See Appendix A for a complete list of partners.

### **Partner Roles and Responsibilities**

All interested parties are encouraged to sign a Memorandum of Understanding (MOU) signatory page as a Signatory or as an informal cooperator to become a part of the Northwoods Cooperative Weed Management Board and actively participate in the NCWMA. Additional parties may, and are encouraged to, be added to the CWMA at anytime. All signatories will be notified of any additional party and will be given 30 days after the notification to determine if there is a conflict of interest. If a conflict of interest is identified, the signatory may choose to withdraw from the MOU. If the signatory does not choose to withdraw, then the additional party with the conflict of interest may not be added to the MOU.

Annually a Chair and Vice-Chair will be nominated and an Annual Operating Plan will be developed to outline projects and goals for that year. The steering committee will be composed of no more than one representative per agency or organization and two cooperator positions. Committee members have voting rights and need to maintain active involvement. The agency/organization representative can be substituted at any time. The committee, chair or vice-chair has the power to call for a formal vote on any matter it sees fit.

### **Funding and Administration**

Funding is anticipated to be primarily through competitive grants and gifts. Funds will be administered through the Bayfield County Land and Water Conservation Department (LCD), but technical and fiscal reporting materials will be the responsibility of the technical contact of each grant. It is their responsibility to provide this material to the LCD representative in an accurate and timely manner to meet all fiscal responsibilities.

### **Regional Coordination**

The establishment of a CWMA is new to the upper Midwest. The NCWMA will cooperate with larger special interest groups such as the Midwest Invasive Plant Network, the Invasive Plant Association of Wisconsin and others as pertinent. The NCWMA will cooperate with newly forming weed management areas.

### **NCWMA Geographic Description**

*Location:* The NCWMA is geographically defined as the lands and waters within the geopolitical boundaries of Ashland, Bayfield, Douglas and Iron counties. This area encompasses 6,734 square miles, nearly 32% of which is water. Included in this area are reservations belonging to the Bad River Band of the Lake Superior Tribe of the

Chippewa Indians (Ashland Co.), and the Red Cliff Band of Lake Superior Chippewa Indians (Bayfield Co.).

Much of the land in the NCWMA is forested, with a large proportion (35-52% by county) in public ownership as national, state or county forests. A smaller proportion (2-12% by county) of the land is agricultural. Tribal land accounts for as much as 17% of the area in Ashland and Bayfield counties. Outdoor recreation in all seasons is a driving economic influence in this area due to the large amount of public land and waters.

The four counties served by the NCWMA are relatively rural. County populations from the 2005 census are: Ashland, 16,627; Bayfield, 15,145; Douglas, 44,208; and Iron, 6,649 (U.S. Census Bureau 2005a). The largest cities in each county of the NCWMA (estimated from 2004) are Superior, 26,947 (Douglas Co); Ashland, 8,382 (Ashland Co); Washburn, 2,298 (Bayfield Co); and Hurley, 1,706 (Iron Co) (U.S. Census Bureau 2005b).

*Landscape:* The NCWMA falls within the Laurentian Mixed Forest ecoregion (Bailey 1995) and contains all or part of five of Wisconsin's Ecological Landscapes (Wisconsin DNR 2005). The four counties served border the south shore of Lake Superior. Most of this ecoregion has low relief, but rolling hills occur in many places. Lakes, poorly drained depressions, morainic hills, drumlins, eskers, outwash plains, and other glacial features are typical of the area, which was entirely covered by glaciers during parts of the Pleistocene. Elevations range from 600 ft. (Lake Superior) to 1,872 ft (Mt. Whittlesey, Ashland County) above sea level. A ridge of volcanic igneous rock, primarily basalt, divides the NCWMA area into two major drainages (Wisconsin DNR 1999). Waters north of this ridgeline flow toward Lake Superior, while those south of the ridge flow to the Wisconsin and St. Croix Rivers, which both lead to the Mississippi River.

*Wildlife.* From the pine barrens in the western half of the Weed Management Area, to the waters of Lake Superior, to the deep forests of hardwoods and conifers, the wildlife found here are as varied as the landscape. Sharp-tailed grouse, bobolinks, badgers, and the prairie skink populate the shrub and grassland communities of the barrens. Lake trout and colonial water birds including the common tern make their homes in and along Lake Superior. The forests of the NCWMA are home to bald eagles, songbirds, wolves, fishers, and numerous small mammals. Beaver, muskrat, and mink are found in the lakes and streams as are trout and sturgeon. The area is heavily impacted by a large deer population.

*Flora.* This ecoregion lies between the boreal forest and the broadleaf deciduous forest zones and is therefore largely transitional (Bailey 1995). In most areas, aspen has become more dominant than it was historically. Northern hardwood forests (sugar maple, basswood, paper birch, and red maple) are common throughout the NCWMA, with pines (white, red, and jack), hemlock, spruce, and balsam fir occurring in scattered patches. Stands of mixed conifers and hardwoods occur closer to Lake Superior and in the eastern half of the NCWMA. Red pine plantations can be found on some industrial

timber lands. Open areas in the western half of the area are comprised of jack pine and oak savannas. Active or former agricultural fields occupy large swaths in the north half of the NCWMA, where approximately 1/3 of the land is non-forested (Wisconsin DNR 1999).

*Endangered, Threatened, or Special Concern.* There are 258 species of plants and animals in the NCWMA that are listed by the state of Wisconsin as Endangered, Threatened, or Special Concern. Six of these are also Federally-listed as Endangered or Threatened. Among the listed species is the piping plover, timber wolf, wood turtle, and two lakeshore plants, Fassett's locoweed and dune thistle (Wisconsin NHI 2006).

*Significance to Indigenous Cultures:* The four county area is within the ancestral home of the Ojibwe people. Located on the Bad River Reservation, Ashland and Iron Counties, WI, the Kakagon and Bad River Sloughs are a 12,000 acre estuarine wetland that has formed behind a series of sand spits on the south shore of Lake Superior. The Kakagon Sloughs is where the bulk of Bad River's wild rice (manoomin) is harvested, and is the Band's most culturally significant wetland. Manoomin is an essential part of the Bad River Ojibwe culture; it is the cornerstone of their historical migration story. Its harvest is celebrated annually at their Manoomin Pow Wow, and it is their source of subsistence carrying them through times of plenty and hardship. The name itself means good berry. Wild rice is more important than just a food or a barter item to the Ojibwe. It is a prominent theme in their stories and legends and is principle to their traditions and lifestyles.

*Special Features:* Listed on the National Registry of Natural Landmarks, the Kakagon Sloughs are described by the National Park Service as "An excellent representative of a true freshwater delta by virtue of its large size, complex mixture of marsh, bog, and dune vegetation types and undisturbed condition. They are perhaps the finest marsh complex in the Upper Great Lakes" (48 Fed. Reg. 8703 March 1, 1983). The Bad River/Kakagon wetland complex comprises 40% of surface area of all of Lake Superior's coastal wetlands.

## **GOALS and OBJECTIVES.**

The primary goal of the Northwoods Cooperative Weed Management Area is to prevent the introduction, mitigate spread, and suppress infestations of noxious weeds in the four northern coastal counties of Wisconsin.

Five main objectives will fulfill this goal:

1. To identify the locations of invasive species throughout the area for cooperative and comprehensive management efforts.
2. To educate the populace of prevention and early detection measures.
3. To develop a practical and convenient reporting and monitoring system.
4. To use an integrated approach to manage current infestations.
5. To seek funding opportunities to support NCWMA partnership activity.

**Objective 1:** To identify the locations of invasive species throughout the area for cooperative and comprehensive management efforts.

### **A. Mapping**

Invasive species in the NCWMA will be mapped in order to document existing infestations, reveal new infestations, prioritize management efforts, and track progress of control efforts. To facilitate data sharing and regional planning efforts NCWMA mapping data will include, at a minimum, the following information:

- Geographic Location – GPS coordinates or detailed description
- Date – date the infestation was located
- Data Source – who recorded/submitted the data
- Plant Genus and Species
- Contact Name
- Contact Phone Number
- Contact E-mail Address

Each partner will be responsible for collecting and maintaining their respective data. Data should be submitted to the Great Lakes Indian Fish & Wildlife Commission to be posted on their interactive mapping website at <http://www qlifwc-maps.org/>. Instructions for submitting data can be found on the website.

### **B. Surveys**

Invasive species survey efforts will be recorded to help document where invasive species are absent, and to inform management planning (e.g., where should future surveys or educational efforts be focused?). At a minimum, survey data should include the following information:

- Geographic Location – GPS coordinates, GIS shapefile, or detailed description
- Date – dates the survey took place
- Data Source – who conducted the survey
- Target Species
- Contact Name
- Contact Phone Number
- Contact E-mail Address

**Objective 2:** To educate the populace of prevention and early detection measures.

### **A. Awareness, education, and training programs**

Education is essential to the success of NCWMA. While noxious weeds should be everyone's concern, not everyone is aware of the problem. Only when the public is aware and educated can they provide valuable assistance in reducing the impact of "weeds" in the NCWMA. NCWMA will develop and distribute information in many forms to educate the general public and provide specific information to target audiences about the impacts of invasive plants and their roles and responsibilities.

The NCWMA will work with partners to promote educational and training activities to:

- Develop posters, buttons, pamphlets, calendars, booklets, and newsletters. These are available at public functions and places such as the Northern Great Lakes Visitor Center, community events, and county fairs to further build local awareness in the community.
- Develop presentations, displays, training sessions and meetings with industry representatives.
- Provide accurate, detailed and updated information on linked web pages
- Provide annotated list of invasive plants of concern
- Assist with conferences for property managers, policy makers and others
- Provide educational programs for elementary and high school students. Partners are asked to visit schools and other organizations and present their message about the NCWMA and weed education, prevention and concern.
- Assist with control projects and get schools involved in community service weed management efforts.
- Provide representation at meetings, conferences and other functions
- Develop cooperative work projects or workdays including an annual picnic

## **B. Prevention and early detection programs**

While citizens may be environmentally aware, they may not be conscientious of how human activities spread noxious weeds. Prevention measures in communities can dramatically curtail the expansion of noxious weed infestations. The NCWMA will work to:

- Identify problem weed areas within the NCWMA and have areas of concern mapped or link to existing database (i.e., [www.glifwc-maps.org](http://www.glifwc-maps.org)).
- Work with local governments to develop and enforce weed ordinances and prevention regulations. Currently most municipalities have some type of local weed ordinance. These ordinances are often poorly written, seldom enforced and do not provide education for local weed commissioners or the general public.
- Provide training and materials for cooperators, gardeners, highway personnel, plant industry persons, landowners and others to identify and report potential new invaders or new aggressive plants.
- Develop a system of cooperative use of control tools and herbicide such that individual landowners and land managers don't have to purchase equipment or large amounts of herbicide on their own.
- Develop a forum (via the internet) to allow landowners and managers to ask questions and share information on control methods. Incorporate new information into training materials and web pages.
- Work cooperatively with landowners concerning problem weed areas and assist with development of appropriate control strategies.

**Objective 3:** To develop a practical and convenient reporting and monitoring system.

### **A. Reporting system**

The NCWMA will be developing and implementing a reporting system which will be implemented region wide and allow for integration into state and national reporting systems.

## **B. Monitoring and evaluation programs**

The NCWMA will be developing and implementing a monitoring and evaluation process.

**Objective 4:** To use an integrated approach to manage current infestations.

### **A. Long-term management objectives for weeds of concern**

Using an integrated approach, the NCWMA will outline a weed management plan for priority species of concern for the NCWMA area which includes:

- Background information of each species to understand the biology and ecology and habitat needs of each species.
- Areas of concern within the NCWMA boundaries.
- Landowner cooperation for effective control measures.
- Management techniques for each species of concern that will be practical and effective.
- Monitoring and documentation of the results after control work.
- Follow-up monitoring and scheduling of maintenance treatments.

### ***Weeds of Concern within the NCWMA***

Data collected and compiled by Great Lakes Indian Fish and Wildlife Commission for Ashland and Bayfield counties revealed a total of 108 taxa of invasive or potentially invasive plants (Appendix B), the vast majority of which are terrestrial species. An additional 18 terrestrial invasive plants are known to be present within the NCWMA but were deemed too widespread and abundant to map. Additional surveys are being conducted in Iron County in 2007. With the exception of the Brule River State Forest, Douglas County currently lacks good information on invasive species composition and abundance.

Due to the large number of invasive plants already present in the Northwoods Cooperative Weed Management Area and the limited resources available to control them, management efforts will need to be prioritized. Management priorities will take into account the plant's potential ecological and economic impacts, management objectives of infested areas, available resources, and landowner/land manager support.

Existing management for purple loosestrife and leafy spurge will continue. New efforts aimed at local Japanese Knotweed will likely expand in the near future. Site specific management encompassing multiple species will be pursued where it is practically feasible and consistent with land management objectives (e.g., State natural areas, Whittlesey NWR "invasive free zone", threatened habitats).

It is the desire of the NCWMA not to issue ultimatums for control guidelines. The NCWMA serves to work together cooperatively with interested parties to find the best feasible treatment for a problem. The NCWMA advocates an integrated pest management approach and strive to adhere to best management practices for control and prevention in all of our individual and cooperative activity.

The NCWMA will adhere to legal guidelines regarding the use of herbicides and tools and will enforce the appropriate use of all required personal protective equipment in its collective activities. To insure that herbicides and tools are used safely, a tailgate safety session will be given prior to any on the ground control work. Work leaders will insure that appropriate documentation, licensure, certification, accident and first aid equipment is available at all cooperative events.

### **Control Methods**

**Manual and mechanical.** Manual and mechanical techniques such as pulling, cutting, or otherwise stressing plants can be used to control some invasive plants, particularly if the population is relatively small. In some cases, this may be the only effective control technique. These techniques can be extremely specific, minimizing damage to desirable plants and animals, but they are generally very laborious and time intensive. Manual treatments must typically be administered several times to prevent a weed from re-establishing. During the course of treatment, laborers and equipment may severely trample vegetation and disturb the soil, providing suitable conditions for re-invasion of the same or other invasive species.

Manual and mechanical techniques are generally favored if the infestation is small or if a large pool of volunteer labor is available. Manual control is also frequently used in combination with other techniques. For example, shrubs may be pulled and cut (manual treatment) and re-sprouts and seedlings may be treated with herbicides (chemical treatment) or fire (cultural alternative) several weeks or months later.

**Chemical.** In some instances, herbicide application is the only practical way to control an invasive species due to the physiology of the plant or the extent of infestation. Although chemical controls (i.e., herbicides) are an effective means of controlling unwanted vegetation, they may also have the most adverse consequences. The risk of using an herbicide must be weighed against the negative impact of the invasive species on the area of concern, and the effectiveness of chemical control should be compared to other control methods.

Many herbicides contain the same active ingredients but are designed for either terrestrial or aquatic applications. Prior to using an herbicide, it is critical to research product effectiveness against the target plant, product guidelines and legal constraints for its use. An herbicide must be registered for use in the state where plant control will take place. It is also important to read the entire label prior to mixing and application. Information on the proper use of an herbicide, including procedures related to the rate and timing of application, transportation, storage, cleanup, and emergency situations, must be followed at all times.

**Biocontrol.** Biological control (biocontrol for short) is the use of animals, fungi, or other microbes to feed upon, parasitize or otherwise stress a targeted pest species. Successful biocontrol programs significantly reduce the abundance of the pest or prevent the damage caused by the pest (e.g. by preventing it from feeding on valued

crops). Biocontrol is often seen as a progressive and environmentally friendly way to control pest organisms. Biocontrol leaves no chemical residues that might harm humans or other organisms and, when successful, can provide essentially permanent, widespread control with a very favorable cost-benefit ratio. However, some biocontrol programs have resulted in significant, irreversible harm to untargeted (non-pest) organisms and to ecological processes. Of course, all pest control methods have the potential to harm non-target native species, and the pests themselves can cause harm to non-target species if they are left uncontrolled. Therefore, before releasing a biocontrol agent (or using other methods), it is important to balance its potential benefit to conservation targets and management goals against its potential to cause harm.

**Cultural.** Cultural control involves the use of methods such as flooding, smothering (covering with light barrier), controlled or wild land fires, or the use of cover vegetation to reduce the impact of invasive species. The feasibility of such methods is related to the size of the infestation, the location and the regulatory and permitting processes for flooding and burning. The use of cultural methods is best suited to small scale applications, such as local homeowners or small businesses through the use of non-invasive plantings and mulch.

**Objective 5:** To seek funding opportunities to support NCWMA partnership activity.

#### **A. Funding**

- 1) Funding opportunities will be reviewed on a regular basis with proposals being drafted and reviewed openly by members of the NCWMA.
- 2) Funding is anticipated to be primarily through competitive grants and gifts.

The type and availability of funding opportunities is constantly changing. One of the best resources for State and Federal funding can be found on the Federal invasive species website.

<http://www.invasivespeciesinfo.gov/toolkit/grantsrequests.shtml>

#### **B. Funding Administration and Collection**

Funds will be administered through the Bayfield County Land and Water Conservation Department (LCD), a Signatory member.

- 1) For each grant the NCWMA is awarded, a copy of the approved grant application and a list of three contacts for the grant will be sent to:  
Land Conservation Department  
Washburn, WI
- 2) LCD will submit paperwork to the Bayfield County Clerk Office who will draw up Revenue and Expense Accounts.
- 3) A primary contact and two alternative contacts will serve as the Grant Oversight Committee (GOC) to oversee activities and insure that grant criteria are being met.
- 4) All technical and fiscal reporting materials (progress reports, copies of receipts, in-kind & match tracking) will be the responsibility of the GOC.

- 5) The GOC must provide these materials to the LCD representative in an accurate and timely manner to meet all fiscal responsibilities.
- 6) All reports and deliverables required by the grant will be the responsibility of the GOC, not LCD.
- 7) LCD will submit periodic and a final reimbursement requests par the particular grants only upon receipt of all products and deliverables required by the grant.

## LITERATURE CITED

Bailey, R.G. 1995. Description of the Ecoregions of the United States, 2d ed., USDA-Forest Service Miscellaneous Publication 1391, Washington, D.C.,

Czarapata, E.J. 2005. Invasive Plants of the Upper Midwest: An Illustrated Guide to Their Identification and Control. University of Wisconsin Press, Madison.

University of Wisconsin Herbarium. 2006. Web site: [www.botany.wisc.edu/wisflora](http://www.botany.wisc.edu/wisflora). Accessed 24 August 2006.

U.S. Census Bureau. 2005a. GCT-T1. 2005 population estimates. Population Estimates Program, U.S. Census Bureau. Accessed 18 August 2006 online at: [www.census.gov](http://www.census.gov)

U.S. Census Bureau. 2005b. Table 4: Annual estimates of the population for incorporated places in Wisconsin, listed alphabetically: April 1, 2000 to July 1, 2004 (SUB-EST2004-04-55). Population Division, U.S. Census Bureau. Release Date: June 30, 2005. Accessed 18 August 2006 online at: [www.census.gov](http://www.census.gov)

Wisconsin DNR. 2005. Wisconsin's Strategy for Wildlife Species of Greatest Conservation Need. Madison, WI.

Wisconsin DNR. 1999. The Ecological Landscapes of Wisconsin. Unpublished DNR handbook, Madison, WI.

Wisconsin NHI. 2006. Natural Heritage Inventory online database records for Ashland, Bayfield, Douglas, and Iron counties. Accessed 18 August 2006 online at: [http://dnr.wi.gov/org/land/er/nhi/nhi\\_ims/onlinedb.htm](http://dnr.wi.gov/org/land/er/nhi/nhi_ims/onlinedb.htm)

## Appendix A: Northwoods Cooperative Weed Management Area Cooperators

Ashland, Bayfield, Douglas & Iron Counties' Land Conservation Dept.  
Bad River Band of Lake Superior Tribe of Chippewa Indians  
Bayfield County Lakes Forum  
Delta Area Lakes Association  
Douglas County Association of Lakes & Streams  
Great Lakes Indian Fish & Wildlife Commission  
Iron River Lakes Association  
National Park Service, Apostle Islands National Lakeshore  
National Park Service, St. Croix National Scenic Riverway  
Natural Resources Conservation Service  
Northern Native Plantscapes  
Sigurd Olson Environmental Institute & Northland College  
The Friends of the Bird Sanctuary  
The Friends of the St. Croix Headwaters  
The Nature Conservancy, Wisconsin Chapter  
Town of Washburn  
U.S. Fish and Wildlife Service, Whittlesey Creek NWR  
U.S. Geological Survey, Great Lakes Science Center  
Upper St. Croix Lake Association  
USDA Forest Service, Chequamegon - Nicolet National Forest  
UW Cooperative Extension  
Wisconsin Department of Natural Resources

Appendix B: Non-native invasive plants in the Northwoods Cooperative Weed Management Area.

	Common Name	Scientific Name	Degree of Invasiveness
Forbs	Baby's Breath	<i>Gypsophila paniculata</i> *	Medium
	Bird's-foot Trefoil	<i>Lotus corniculata</i> *	High
	Bladder-Campion	<i>Silene vulgaris</i>	Medium
	Bouncing Bet	<i>Saponaria officinalis</i>	Medium
	Bull Thistle	<i>Cirsium vulgare</i>	NM
	Butter-and-Eggs	<i>Linaria vulgaris</i>	Medium
	Canada Bluegrass	<i>Poa compressa</i> *	Medium
	Canada Thistle	<i>Cirsium arvense</i>	High
	Chicory	<i>Cichorium intybus</i> *	NM
	Common Burdock	<i>Arctium minus</i>	Medium
	Common Mullein	<i>Verbascum thapsus</i>	NM
	Common St. John's-Wort	<i>Hypericum perforatum</i> *	Medium
	Common Tansy	<i>Tanacetum vulgare</i> *	Medium
	Creeping Bellflower	<i>Campanula rapunculoides</i> *	Medium
	Creeping Charlie	<i>Glechoma hederacea</i>	Medium
	Crown Vetch	<i>Coronilla varia</i> *	High
	Curly Dock	<i>Rumex crispus</i>	NM
	Curly-Leaf Pondweed	<i>Potamogeton crispus</i> †	Medium
	Cypress Spurge	<i>Euphorbia cyparrissias</i> *	Medium
	Dame's Rocket	<i>Hesperis matronalis</i> *	Medium
	Deadly Nightshade	<i>Solanum dulcamara</i>	NM
	Eurasian Water Milfoil	<i>Myriophyllum spicatum</i> †	High
	Everlasting Pea	<i>Lathyrus latifolius</i> *	NM
	Field Bindweed	<i>Convolvulus arvensis</i>	NM
	Field Sorrel	<i>Rumex acetosella</i>	Medium
	Flowering Rush	<i>Butomus umbellatus</i> * †	Potentially High
	Garden Forget-me-not	<i>Myosotis sylvatica</i> *	Medium
	Garden Heliotrope	<i>Valeriana officinalis</i> *	Potentially High
	Garlic Mustard	<i>Alliaria petiolata</i>	High
	Giant Hogweed	<i>Heracleum mantegazzianum</i>	High
	Giant Knotweed	<i>Polygonum sacchilense</i>	Potentially High
	Helleborine	<i>Epipactis helleborine</i>	Medium
	Hybrid Cattail	<i>Typha x glauca</i> †	High
	Japanese Knotweed	<i>Polygonum cuspidatum</i> *	High
	Kentucky Bluegrass	<i>Poa pratensis</i> *	Medium
	Leafy Spurge	<i>Euphorbia esula</i>	High
	Musk Thistle	<i>Carduus nutans</i>	Medium
	Narrow-leaved Cattail	<i>Typha angustifolia</i> * †	High
	Nipplewort	<i>Lapsana communis</i>	NM
	Orange Day Lily	<i>Hemerocallis fulva</i> *	Medium

(Continued)

## Non-native invasive plants in the Northwoods Cooperative Weed Management Area.

	Common Name	Scientific Name	Degree of Invasiveness
Forbs	Orange Hawkweed	<i>Hieracium aurantiacum</i>	Medium
	Ox-eye daisy	<i>Chrysanthemum leucanthemum</i> *	Medium
	Periwinkle	<i>Vinca minor</i> *	Medium
	Common Reed Grass	<i>Phragmites australis</i> †	High
	Plumeless Thistle	<i>Carduus acanthoides</i>	Medium
	Purple Loosestrife	<i>Lythrum salicaria</i> †	High
	Quack Grass	<i>Elytrigia repens</i> *	Medium
	Queen Anne's Lace	<i>Daucus carota</i> *	Medium
	Queen-of-the-Meadow	<i>Filipendula ulmaria</i>	Potentially High
	Red Clover	<i>Trifolium pratense</i> *	NM
	Reed Canary Grass	<i>Phalaris arundinacea</i> * †	High
	Smooth Brome	<i>Bromus inermis</i> *	Medium
	Spotted Knapweed	<i>Centaurea biebersteinii</i>	High
	Tall Fescue	<i>Festuca arundinacea</i> *	Medium
	Watercress	<i>Nasturtium officinale</i> * †	Medium
	Water Forget-Me-Not	<i>Myosotis scorpioides</i> †	Medium
	White Clover	<i>Trifolium repens</i> *	NM
	White Sweet Clover	<i>Melilotus alba</i> *	High
	Wild Parsnip	<i>Pastinaca sativa</i> *	High
	Yellow Hawkweed	<i>Hieracium piloselloides</i>	Medium
Yellow Sweet Clover	<i>Melilotus officinalis</i> *	High	
Yellow, or Water-Flag, Iris	<i>Iris pseudacorus</i> * †	Medium	
Shrubs	Autumn Olive	<i>Elaeagnus umbellata</i> *	High
	Bella Honeysuckle	<i>Lonicera x bella</i>	High
	Common Buckthorn	<i>Rhamnus cathartica</i> *	High
	European Barberry	<i>Berberis vulgaris</i> *	NM
	European Highbush Cranberry	<i>Viburnum opulus</i> *	Medium
	Glossy Buckthorn	<i>Rhamnus frangula</i> *	High
	Japanese Barberry	<i>Berberis thunbergii</i> *	Medium
	Morrow's Honeysuckle	<i>Lonicera tatarica</i> *	High
	Salt Cedar	<i>Tamarix</i> spp.	NM
	Siberian Pea Shrub	<i>Caragana arborescens</i> *	Potentially High
	Tartarian Honeysuckle	<i>Lonicera morrowii</i> *	High
	Trees	European Mountain Ash	<i>Sorbus aucuparia</i>
Norway Maple		<i>Acer platanoides</i> *	Medium
Scotch Pine		<i>Pinus sylvestris</i> *	NM
Siberian Elm		<i>Ulmus pumila</i> *	Medium

\*Species currently sold commercially in WI; (†) = wetland species. Degree of Invasiveness based on Czarapata (2005); see text for definitions.

Plants whose Degree of Invasiveness is “NM” are species not mentioned in Czarapata (2005). The other ranks: High, Potentially High, and Medium, were subjectively applied based on Czarapata’s (2005) characterization of each plant.

High = “Invasive plants of major concern.” Plants that have “demonstrated an ability to spread aggressively and cause considerable environmental disruption.”

Potentially High = “Potential problem species.” Plants that: (1) are invasive in other areas having similar latitude or climatic conditions to the upper Midwest and are likely to pose a significant future threat to natural areas and restored sites here; or (2) appear to be aggressive and are locally abundant in some areas of the upper Midwest, but it is unclear, at this time, how invasive they will eventually become throughout the region.

Medium = “Invasive plants of lesser concern.” Those that have invaded natural areas, collectively affect a large area, and might pose problems for areas being restored, but they do not pose a major threat to well-established native plant communities and they generally do not displace native plants.