

WISCONSIN INVASIVE PLANTS REPORTING & PREVENTION PROJECT
An Early Detection and Strategic Response Initiative

Co-sponsored by the Wisconsin DNR and the Wisconsin State Herbarium,
with the cooperation of many organizations and individuals.

Invasive Plants of the Future

Update March 12, 2008

*Note: This Word document is a direct copy of the information on the project website, hence the "on-line" language.
For the latest project information, plant photographs, report forms and more, see the website at
<http://www.dnr.state.wi.us/org/land/er/invasive/futureplants>*

About the Project

This site is an online field guide for identifying and reporting the first set of target plants of the **Wisconsin Invasive Plants Reporting and Prevention Project**. The target species list will continue to be updated.

The project has three main goals:

- 1) Identify and report populations of target invasive weed species**
- 2) Eliminate or contain those populations before they spread
- 3) Coordinate long-term monitoring of occurrence sites

**Target species have been selected because of their potential for invasiveness in Wisconsin. All are known to be ecologically invasive in other states or provinces. These plants are either:

- 1) Already in Wisconsin but in localized populations, or
- 2) Not known to be here -- yet -- but are likely to thrive in part or all of the state.

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Target Invasive Plants

**WISCONSIN INVASIVE PLANTS
REPORTING AND
PREVENTION PROJECT**

Be on the lookout for the plants listed here. Some are already growing in Wisconsin, but in limited locations and numbers (marked with [WI]). The goal with these species is to prevent further spread and to eradicate these early infestations. The goal with species that are not yet reported in Wisconsin is to keep the species from establishing in the state.

Target Species List

For Reporting and Prevention

NOTE: These plants and some of their cultivars have the potential to invade wild areas, outcompete native species and degrade habitats. Some species may cause extensive ecological damage, though more information is needed to determine if they already are or will become ecologically invasive in Wisconsin. Inclusion on the list does not imply any legal limitations or restrictions for these plants.

WI = Already in Wisconsin

Upland

- 1. Tree of Heaven** (*Ailanthus altissima*) [WI]

2. **Porcelain berry** (*Ampelopsis brevipedunculata*) [WI]
3. **Wild chervil** (*Anthriscus sylvestris*) [WI]
4. **Hill mustard** (*Bunias orientalis*) [WI]
5. **Oriental bittersweet** (*Celastrus orbiculata*) [WI]
6. **Poison hemlock** (*Conium maculatum*) [WI]
7. **Common teasel** (*Dipsacus fullonum* subsp. *sylvestris*) [WI]
8. **Cut-leaved teasel** (*Dipsacus laciniatus*) [WI]
9. **Baby's breath** (*Gypsophila paniculata*) [WI]
10. **Giant hogweed** (*Heracleum mantegazzianum*) [WI]
11. **Japanese hops** (*Humulus japonicus*) [WI]
12. **Japanese honeysuckle** (*Lonicera japonica*) [WI]
13. **Japanese stilt grass** (*Microstegium vimineum*)
14. **Japanese knotweed** (*Polygonum cuspidatum*) [WI]
15. **Kudzu** (*Pueraria lobata*)
16. **Wineberry or wine raspberry** (*Rubus phoenicolasias*)
17. **Japanese hedge-parsley** (*Torilis japonica*) [WI]
18. **Spreading hedge-parsley** (*Torilis arvensis*)
19. **Black swallow-wort** (*Vincetoxicum nigrum*) [WI]
20. **Pale swallow-wort** (*Vincetoxicum rossicum*)

Aquatic / Wetland

21. **Flowering rush** (*Butomus umbellatus*) [WI]
22. **Fanwort** (*Cabomba caroliniana*)
23. **Pond water-starwort** (*Callitriche stagnalis*) [WI]
24. **European marsh thistle** (*Cirsium palustre*) [WI]
25. **Brazilian waterweed** (*Egeria densa*)
26. **Hydrilla** (*Hydrilla verticillata*)
27. **European frog-bit** (*Hydrocharis morsus-ranae*)
28. **Parrot feather** (*Myriophyllum aquaticum*)
29. **Yellow floating heart** (*Nymphoides peltata*) [WI]
30. **Water chestnut** (*Trapa natans*)

When is a Plant Invasive?

When some plants are introduced to a new area they can become aggressive competitors. There are many possible reasons for why plants may become invasive. Some common reasons are that when a plant is moved to a new area it does not come with the host of pests and other competitors that kept the plant's growth in check. The lack of competition can allow these plants to reproduce to their full potential, which can be quite high as many plants that become invasive are prodigious reproducers (many seeds created per plant per year or a high rate of spread by vegetative means e.g. runners). A plant's invasive behavior can also be influenced by habitat factors, such as areas of low competition (such as trail and road edges or recently disturbed areas) and excess nutrients (such as runoff-polluted lakes and rivers).

Not all non-native plants become invasive. Only a limited number tend to invade and colonize natural forests, prairies, wetlands and lakes. They cause harm by shading and crowding out existing native plant communities and sometimes by changing local soil chemistry. A current example of a serious invasive plant in Wisconsin is garlic mustard. Garlic mustard is a widespread invasive plant of forests and has blanketed thousands of acres in southern and eastern Wisconsin and replaced native wildflower populations. Other plants could become such botanical monsters if we do not stop them first.

Links to more information:

Wisconsin State Herbarium - <http://www.botany.wisc.edu/wisflora>

Invasive Plants Association of Wisconsin (IPAW) - <http://www.ipaw.org>

Invasive Plant Atlas of New England (IPANE) - <http://invasives.eeb.uconn.edu/ipane>
USDA - <http://plants.usda.gov> and <http://www.invasive.org>
USGS Non-indigenous Aquatic Species - <http://nas.er.usgs.gov/taxgroup/plants/default.asp>

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How You Can Help

If any target plants are found: (or if you *think* you have found one, but need an expert to confirm identity)

- Collect a good specimen (fresh or pressed) and/or take photos.
(For plant experts, it may be enough to simply report the plant and its location.
See **Collecting & Reporting Guidelines**)
- Fill out a Reporting Form. Send report (and specimen) to the Herbarium.
- Contact the Project Coordinator at InvasivePlants@mailplus.wisc.edu

If you are certain of the identification of small populations you should eliminate all plants. At a minimum, prevent plants from producing fruits or seeds. If you need assistance to control the population, contact a local land manager or the project coordinator. And ALWAYS report your findings and actions so we can keep track of all target invasives.

Become a Wisconsin Weed Watcher . . .

. . . and join Wisconsin landowners, sport & recreation enthusiasts, naturalists, park employees, educators, gardeners, resource professionals and other citizens as they help nip new plant invasions in the bud.

Go to the <u>Weed Watcher website</u> or contact the project coordinator.

For information:

Wisconsin Invasive Plants Reporting & Prevention Project
Herbarium, UW-Madison Botany Dept.
430 Lincoln Dr., Madison, WI 53706
Phone: (608) 267-7612
Email: InvasivePlants@mailplus.wisc.edu
Website: <http://dnr.wi.gov/invasives/futureplants/index.htm>

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Collecting & Reporting Guidelines

WISCONSIN INVASIVE PLANTS REPORTING AND PREVENTION PROJECT

When You Find a Suspected Target Plant . . .

Here is what to do:

1. Collect Specimens or Take Pictures (See Reporting Instructions below)

(For plant experts, it may be enough to simply report the plant and its location. Please contact project staff.)

A. Collect, press and dry a complete sample. See website instructions for making and using a plant press. This method is best because a plant expert can examine the specimen (which might end up in the state herbarium, with your name listed as collector).

Or --

B. Collect a fresh sample and mail right away. Enclose in a plastic bag with a moist paper towel.

Or --

C. Take detailed photos -- digital or film -- and mail or email them.

Regardless of method used, provide as much evidence as possible. Try to include flowers, seeds or fruit, buds, full leaves, stems roots and other distinctive features. In photos, place a coin, pencil, ruler or hand for scale. If you can, send a specimen and take a photo.

2. Note Location

(Provide one or more of the following)

- Latitude & Longitude
- UTM (Universal Transverse Mercator) coordinates
- County, Township, Range, Section, Part-section
- Precise written site description, noting nearest city & road names, landmarks, local topography

If possible, give the exact geographic location using a GPS (global positioning system) unit, topographic map, or the Wisconsin Gazetteer map book. If using a map, include a photocopy with a dot showing the spot. On the Internet, you can use <http://www.TopoZone.com> to find the precise location on a digital topographic map. Click the cursor on the exact collection site and note the coordinates (choose UTM or Latitude/Longitude).

3. Send Specimen (or Photo) & Reporting Form

Use the REPORTING FORM on this website or create your own. Please provide this essential data:

- Collection date & county
- Your name, address, phone, email
- Exact location (Latitude/Longitude or UTM preferred, or Township/Range/Section)
- Plant name (common or scientific, best guess upon collecting)
- Land ownership (if known)
- Population description (estimate number of plants, area covered)
- Habitat type(s) where found (forest, field, prairie, wetland, open water)

Mail specimen (or photo) with its data form to:

Wisconsin Invasive Plants Reporting & Prevention Project

Herbarium, UW-Madison Botany Dept.

430 Lincoln Dr., Madison, WI 53706

Phone: (608) 267-7612

Email: InvasivePlants@mailplus.wisc.edu

Website: <http://dnr.wi.gov/invasives/futureplants/index.htm>

4. Help Control the Population

After finding and reporting any of these species the next priority should be containment and eradication. Depending on the species found and the time of year, control efforts may be needed immediately. See the control information provided for each species. In general, any hand-pulling, mowing, or chemical treatment strategy should be timed or designed to prevent seed development and further plant dispersal.

NOTE – Even if you are unable to attempt any control work, it is still important to report all target plant discoveries, especially the species that have not been documented in Wisconsin or have limited ranges. We need to know where the invaders are so we can find someone to contain them and monitor the site over several years.

Reporting Instructions

Check photos and descriptions on the website and brochure to help narrow the possibilities for plant identity. Be sure to include notes about site location & description, population size and control actions taken.

Print out (or copy to a word-processing document) and complete the Invasive Plant Report form -- to report occurrences of suspected target invasive plants growing in Wisconsin or near state borders. (See Target Plant List website.) Please use one form for each sample.

Enclose form with your ID Evidence: photographs, pressed plant specimens, or fresh specimens. (See below for guidelines on each method.)

Send to the Wisconsin State Herbarium. (Use address on form.) Botanists will confirm each plant's identity and will tell you the name via email, letter or phone.

"ID REQUIRED"

-- Evidence-Collecting Guidelines

Most of the 30 Target Plants have look-alikes (both native and non-native) which can make identification difficult, especially before flowering. At least one form of evidence will be required to establish plant identity. Use the following as a guide to the preferred evidence.

GUIDELINES FOR IDENTIFICATION EVIDENCE

Photographs. Use either film or digital camera, and try to capture maximum details. Focus on flowers, leaf shape, leaf stem arrangement, and fruits. For scale, be sure to include an object of standard size (e.g. dollar bill, coin, or other familiar object). For giant hogweed, have a person stand near (but not touching) the plant. Send by email or US mail (address below).

Fresh Specimens. Diagnostic samples of the plant; especially flowers, fruits, stem section with leaves, or whole plants; can be sent by US mail. Package specimens in a sealed plastic bag with a moist paper towel. Keep cool until mailing and send as soon as possible.

Pressed & Dried Specimens. To make pressed specimens, see the Voucher-Making instructions. If you have a plant press or can make one, press plants providing as many details as possible. Enclose the specimens in a newspaper sleeve pressed between two stiff cardboard sheets and send by US mail.

Evidence Requirements / Preferences for specific target plants

1. Photos OK (try to take several, with a coin or other object of standard size included for scale)

- Baby's breath (stems, flower)
- Flowering rush (when in flower)
- Frog-bit (when in flower)
- Giant hogweed (leaves, stem closeup)
- Japanese honeysuckle (leaves, stems, fruit, flowers)
- Japanese hops (leaves, leaves with twining stems)
- Japanese knotweed (leaves, stems, flowers)
- Oriental bittersweet (if in fruit)
- Poison hemlock (stems, leaves, flowers)
- Porcelain berry (if in fruit)
- Swallow-wort [both species] (show flowers, or twining stems with pods)
- Teasel [both species] (flower heads, stem & leaf nodes, leaf undersides closeup)
- Tree of Heaven (leaves)
- Water chestnut (floating rosette)

2. **Specimen preferred**

- Hedge-parsley [both species] (flower umbels, stem with leaves)
- Hill mustard (stem, flower)
- Oriental bittersweet (if lacking fruit)
- Swallow-wort [both species] (flowers, leaves & vines)
- Wild chervil (stems, flowers)
- Wineberry (stem tops, especially new growth with prickly hairs)

3. **Specimen required:**

- Brazilian waterweed
- Fanwort
- Flowering rush (if leaves only)
- Hydrilla (leafy stems, fresh or dried)
- Kudzu
- Parrot feather
- Pond water-starwort
- Porcelain berry (if lacking fruit)
- Stilt-grass (leaves with stem, flower spikes)
- Yellow floating heart

4. **BOTH photo and specimen.**

- For all plants: Having both forms of evidence is best, if possible.

Note: If you do not have a specimen or photo, but know the location of a target plant, fill out and send the reporting form and contact the coordinator.

Use the **Voucher-Making Instructions** for guidance on making and using a plant press.

Remember to include a completed **Reporting Form** with **each** specimen. Send to:

Wisconsin Invasive Plants Reporting & Prevention Project

Herbarium, UW-Madison Botany Dept.

430 Lincoln Dr., Madison, WI 53706

Phone: (608) 267-7612

Email: InvasivePlants@mailplus.wisc.edu

Website: <http://dnr.wi.gov/invasives/futureplants/index.htm>

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**We Need YOU –
To be a WISCONSIN WEED WATCHER**

**WISCONSIN INVASIVE PLANTS
REPORTING AND
PREVENTION PROJECT**

The Challenge

Wisconsin is a big place, with lots of places for weeds to grow. There are 54,300 square miles of forests, fields, wetlands, lakes, suburbs and cities. Of the state's 5 million residents, very few are familiar with local native trees, wildflowers and grasses, or the invasive species that threaten them.

With so many potential routes and places of introduction we need you to help. Our goal is to have hundreds of Weed Watchers committed to keeping invasives out of Wisconsin. In the process, we hope volunteers will gain a new appreciation for the state's native species and rich natural heritage.

Ways to be an effective "Weed Watcher"

First, you will need to learn to identify target plants and where they are likely to be found. Get to know the look-alikes, too. You can do this by viewing the [Target Plants website](#) and other project materials, or by attending a Weed Watcher training. For instructions on plant-collecting, voucher-making and reporting, see [Collecting & Reporting Guidelines](#).

Then . . .

- Keep an eye open for target plants wherever you go – whether in settings that are urban, rural, wild, or developed. Often, invasives get their start along roads or near human habitation.
- Adopt a wild place or natural area and watch over it. Get to know the current community of plants, both natives and non-natives, so you can recognize when a target plant arrives.
- Check the Wisconsin State Herbarium website (www.botany.wisc.edu/wisflora) to find current locations of target invasive species (those known to be in the state). Go search for more occurrences in the area, and report them.

Make it Official: Register Now

When you register as a volunteer Wisconsin Weed Watcher, we will periodically send you emails to keep you informed about target plant sightings, invasive plant websites & resources, tips for sample collecting and plant eradication, and more. By letting us know the counties and places where you will be watching, we will know which parts of the state are covered and which need more attention.

NOTE: Whether or not you register, we still hope you will be on the lookout for the target invasive plants and report any findings to the project coordinator. Thanks!

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WISCONSIN WEED WATCHERS

for Invasive Plant Reporting and Prevention

Registration Form

THANKS for your interest in becoming a volunteer [Wisconsin Weed Watcher](#) -- and for helping prevent new species of invasive plants from taking root in the state. When you register, we will be able to keep you informed by email on invasive plant sightings and other important information. (You can still report and help eradicate target plants without registering, but we hope you will keep us posted on your activities.)

Please complete the form and send via email to **InvasivePlants@mailplus.wisc.edu**

Or print and mail to:

**Invasive Plants Prevention Project, UW-Herbarium
430 Lincoln Dr., Madison, WI 53706**

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Contact Information

Name _____

City, town, or township _____

County of residence _____ State _____

Email address _____

Phone number (_____) _____

Your Affiliations (employers, organizations and other groups that might be interested in this project)

Where will you "watch" for target plants? (Mark all that apply, especially question 1)

- 1. Primary **County(s)** of observation: _____
- 2. Roadsides and other travel corridors in my area.
- 3. On my own land (Note county, if different from above) _____
- 4. Aquatic settings (lakes, streams, wetlands)
- 5. Park or natural area – (Note name(s) & location) _____

- 6. Other places (please specify) _____

Are you willing to help control (eradicate or contain) populations of plants you or others find?

Yes _____ No _____ Maybe _____

Which target plants have you seen, and where?

(Use the Invasive Plant Report Form to formally report your sightings)

For a list of Target Plants, see website <http://www.dnr.state.wi.us/org/land/er/invasive/futureplants>

Notice: The information you provide will be used in a statewide volunteer effort to locate, eradicate and monitor selected invasive plants. Personally identifiable information collected on this form may be provided to requesters as required by Wisconsin's Open Records law [ss. 19.31 – 19.39, Wis. Stats.]

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Wisconsin Invasive Plants Reporting & Prevention Project

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How-to-Make
VOUCHER SPECIMENS of PLANTS

This document contains instructions for making a pressed plant voucher, but for the purposes of the Invasive Plants Reporting & Prevention Project other kinds of vouchers may be appropriate. Fresh plants, partial specimens and photographs may also be used. It is important to provide adequate evidence regardless of method used. Fresh or dried samples of key diagnostic parts of the plant (distinctive leaves, flowers or fruit, for example) may be all that are needed to confirm identity. Photographs can serve as vouchers if enough details are captured. Complete, well-preserved dried specimens are best, of course, but the object of the project is to recognize and eradicate new invasives before they gain a permanent foothold in Wisconsin. A voucher aided identification ensures that control work can begin on the correct species. For complete information, see the project website:

<http://dnr.wi.gov/invasives/futureplants/index.htm>

A voucher specimen is a dried plant sample consisting of pressed leaves, stems, flowers, roots and/or fruits that is used by experts to verify species identification. Vouchers are valuable because they provide the physical evidence to confirm the presence of plant species in specific locations (much like a police investigation's chain of evidence). They have a variety of uses, such as documenting the occurrence of rare plants or revealing the geographic spread of invasives over time. Once received by a herbarium (a plant specimen "library"), vouchers may be mounted, labeled and kept for future reference and research.

Equipment needed

1. **Plant Press** (or any device in which to flatten and dry specimens. Instructions below.)
2. **Invasive Plant Report Form** (or equivalent listing of specimen-related data. [Link to form](#))

Basic steps for preparing vouchers

1. Collect plant in the field.
2. Record specimen data on Plant Report Form.
3. Press immediately, or transport temporarily in a plastic bag and press right away. We really mean right.
4. Dry quickly and completely.
5. Send specimen and Plant Report Form to the State Herbarium at UW-Madison.

WHAT TO COLLECT

Select one or more healthy plants that are typical of the population. Take samples of the whole plant, if possible, or enough **leaves and stems** to show leaf shape and size, opposite or alternate **branching**, and **buds**. If possible, include **flowers and/or fruits**, which may be needed to confirm a plant's precise identity. For grasses and grass-like plants, try to include roots. For large specimens, fold stems into a V or N shape. Thick stems may be cut in half lengthwise. For small plants, collect several and press together. Show upper and lower surfaces of leaves and flowers. Press flowers with the blossom open, and if possible slice one in half lengthwise to show internal structures. Be sure to press the plant before it wilts.

PRESSING PLANTS

Use a standard-sized (12 x 18 inch) plant press, if you have one, or make your own. Herbarium specimens are mounted (glued) on standard 11.5 x 16.5 inch sheets of heavy paper. Specimens must not exceed this size (though large plants often are divided up and glued to multiple sheets).

For this invasive species project, plant press dimensions can be as small as 9 x 12 inches. This makes it easy to carry the press in a backpack, as well as to send specimens by mail (in large, business-size envelopes).

MAKING A PORTABLE PLANT PRESS

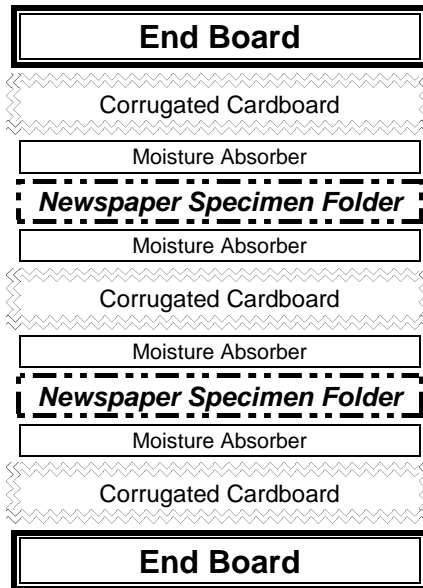
End Boards. Prepare two 9 X 12 inch rectangles of a rigid material. Use plywood, masonite, pegboard, the backs of two clipboards, the covers from a 3-ring binder, or even cardboard (several sheets glued together for rigidity). Between the end boards – and cut to the same dimensions -- place alternating layers of corrugated cardboard, moisture absorbers, and newspaper specimen "folders." See diagram below.

Corrugated Cardboard. Cut from corrugated boxes, having the lines of corrugation run across the shortest distance. This will enhance air flow through the press.

Moisture Absorber. To wick moisture away from the drying specimens, use sheets of newspaper or paper-toweling. Sheets of thick blotter paper work well, if available.

Newspaper Specimen "Folder." Specimens are arranged carefully within a folded piece of newspaper (like placing a document in a file folder).

Assembling the press. When putting plants in the press, each newspaper specimen folder is sandwiched between moisture-absorbing layers and cardboard. For bulky specimens, extra layers of moisture absorber and cardboard may be needed. Tie the press together tightly with rope, bungee cords, large rubber bands, or buckle straps. You may need to adjust tightness as plants dry and flatten out. To quicken drying for high-moisture plants, change the folder and moisture absorbing layers at least once. Include 5 to 10 (or more) specimen folders – and surrounding layers – in your press, or as many as you can comfortably carry.



SPECIMEN INFORMATION

For each specimen or field observation, basic information about the occurrence is needed. For all specimens collected, make sure that all documentation stays with, or can be linked to, the sample. Some collectors write data on the newspaper specimen folder or on a sheet enclosed with the sample. Others use a notebook with code numbers that correspond to a specific sample.

Use the Invasive Plant Report Form to submit information, or create your own that covers these categories: For each specimen, note the state, county, date collected, and plant name (common or Latin). Estimate the size and density of the infestation. Note location landmarks, such as city name, roads, intersections, power lines, lake edges and other natural and cultural features. Provide a habitat description, such as forest interior, forest edge, old field, prairie, wetland, lakeshore, crop field, pasture, disturbed ground, urban setting type. Tell if found on public or private land. Be sure to provide the collector's name, address, phone and email so they can be reached for more details. Enclose a completed form with each specimen. If the landowner or land manager is known, provide their name and contact information.

Accurate information about location is essential. Try to provide exact geographic coordinates using a GPS unit, topographic map, or the Wisconsin Gazetteer. If you have access to the internet, you can use <http://www.TopoZone.com> to find the precise location on a digital topographic map. When you click the cursor on the exact collection site, its coordinates (choose UTM or Latitude/Longitude) are automatically printed in the text above the map. Include a printed or photocopied map with a colored dot showing the spot.

Mail specimen with its report form to:

**Invasive Plants Reporting & Prevention Project,
UW Herbarium – Botany Dept.
430 Lincoln Dr.
Madison, WI 53706**

Questions? Contact Wisconsin Invasive Plants Reporting & Prevention Project Coordinator
InvasivePlants@mailplus.wisc.edu
(608) 267-7438