







PURPLE LOOSESTRIFE

4

MONITORING PROTOCOL AND CONTROL INFORMATION



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You may not have paid much attention to the vegetation growing along the shores of your lake in the past. You may have fished the lake or boated for years vaguely remembering the greenery along the shoreline as a pleasing array of grass-like plants, water lilies, or any of a number of common shoreline plants. Have you noticed any changes lately? Are there plants you don't recall seeing in the past? Or maybe you've noticed there is more of one certain type of plant.

If you haven't looked for these changes, you should since they may be signs of invasive plants moving in. Not knowing friend from foe, you should be concerned whenever you see a new face or a dramatic increase in any plant. You should definitely sound the alarm if lake edges that were once green with cattails or other plants have suddenly erupted in massive amounts of pink-purple in mid to late summer; almost a sure sign that purple loosestrife has established. It would be even better to recognize and remove the first of these plants before they bloom....and set seed.



Purple Loosestrife

Photo by Illinois DNR

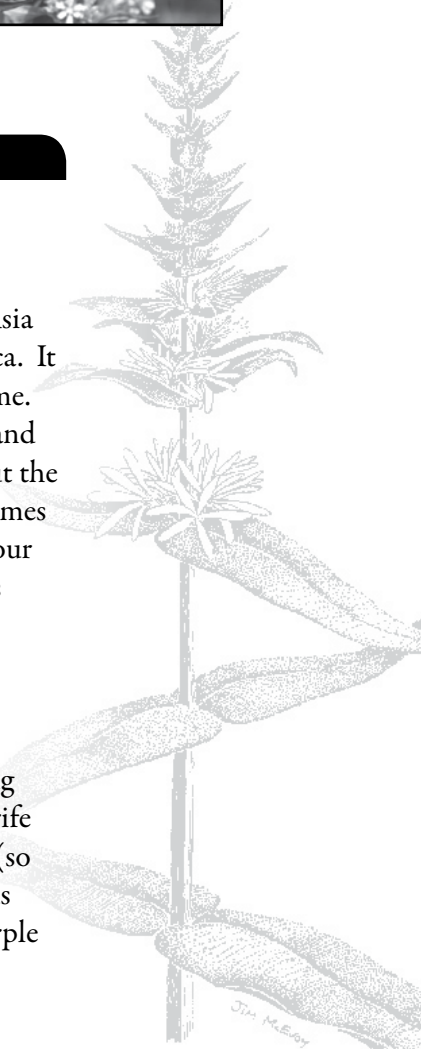
Purple
Loosestrife



BACKGROUND/OVERVIEW

Purple loosestrife is an attractive wetland perennial plant originating in Europe and Asia that has become a real threat to wetland communities across temperate North America. It was introduced without the specialized insects and diseases that help control it at home. Freed from its natural controls, it grows faster and taller than most of our native wetland plants. Once established on a lakeshore or adjacent wetland, it often shades out all but the tallest of its competitors, and can replace large numbers of native plants where it becomes established. This should concern you since it can dramatically change the health of your lake's edge - and how you and wildlife are able to use the lake system. As native plants decline, so do the other species that depend on them!

The plant's habit and vigor also result in large numbers of small seeds that are easily dispersed to wetlands everywhere via moving water, on the feet of migrating birds, or in the cleats of muddy boots or tires. The seeds germinate on open, moist soil, creating first year flowering plants that produce many more thousands of seeds! Thus, loosestrife quickly creates large seed banks that make the plant virtually impossible to eliminate (so remove those young plants before flowering, if you can!) Lots of easily dispersed seeds also virtually ensure its spread. The information currently available on sites where purple loosestrife grows can be found at <http://dnr.wi.gov/lakes/invasives/>.





LIFE CYCLE

Purple loosestrife spreads mainly by seed, but it can also spread vegetatively from root or stem segments. A single stalk can produce from 100,000 to 300,000 seeds per year. Seed survival is up to 60-70%, resulting in an extensive seed bank. Mature plants with up to 50 shoots grow over 2 meters high and produce more than two million seeds a year.

Most of the seeds fall near the parent plant, but water, animals, boats, and humans can transport the seeds long distances. Seed germination is restricted to open, wet soils with a wide range of pH. Germination requires high temperatures, but seeds can remain viable in the soil for many years. Even seeds submerged in water can live for approximately 20 months.

Most seedling establishment occurs in late spring and early summer when temperatures are high. Optimum substrates for growth are moist soils of neutral to slightly acidic pH, but the plants can exist in a wide range of soil types.

Vegetative spread through disturbances is also characteristic of purple loosestrife; clipped, trampled, or buried stems of established plants may produce shoots and roots. Plants may be quite large and several years old before they begin flowering. It is often very difficult to locate non-flowering plants, so monitoring for new invasions should be done at the beginning of the flowering period in mid-summer.

Any sunny or partly shaded wetland is susceptible to purple loosestrife invasion. Vegetative disturbances such as water drawdown or exposed soil accelerate the process by providing ideal conditions for seed germination. Invasion usually begins with a few pioneering plants that build up a large seed bank in the soil for several years. When the right disturbance occurs, loosestrife can spread rapidly, eventually taking over the entire wetland. The plant's ability to adjust to a wide range of environmental conditions gives it a competitive advantage; coupled with its reproductive strategy, purple loosestrife tends to create monotypic stands that reduce biotic diversity.



IDENTIFICATION

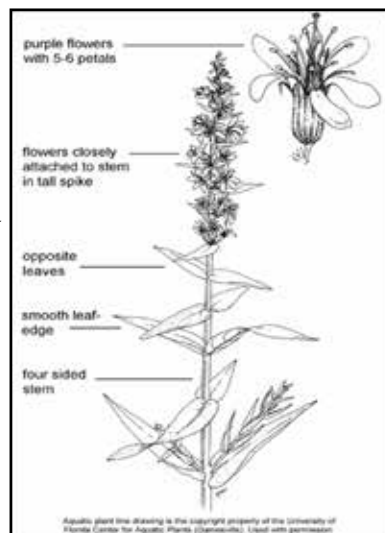
In your packet is a laminated example of Purple Loosestrife (*Lythrum salicaria*, pronounced (LITH-rum sal-i-CARE-ee-a), as well as a brochure that includes pictures of purple loosestrife and native look-a-likes.

Purple loosestrife can be confused with a number of other purple-spiked flowers including gayfeather, blue vervain and fireweed. (The state purple loosestrife brochure included with this manual has a guide to native look-a-like plants.)

Refer to picture here, as well as reference materials in your packet, to see the characteristics listed below.

PURPLE LOOSESTRIFE CHARACTERISTICS

- Semi-woody, hardy perennial with a dense bushy growth of 1-50 stems.
- Leaves are usually opposite, but can be found whorled or even alternate.
- Leaves attached directly to the stem. They do not have petioles (leaf stalks). Leaves are lance-shaped and 1-4 inches long with smooth edges.
- Stems are square (four-sided) or many sided (five or six-sided). Plants can grow 3-7 feet tall.
- Flowers are purple to pink in color; have 5-6 petals; and form on spikes. Flowers bloom from the bottom of the spike to the top of the spike.
- Flowers bloom July–September, with blooming occurring earlier in southern Wisconsin than in northern Wisconsin.



Purple
Loosestrife



PURPLE LOOSESTRIFE MONITORING

PREVENTION MONITORING

As a citizen lake monitor, you can play a very important role by regularly looking for purple loosestrife when you are traveling around your area. While driving, you can conduct “windshield” surveys. That is, just watch the roadways and note where you see purple loosestrife. (This is quite easy on back road areas, but nearly impossible on highways and freeways.) You can also monitor while boating by watching the shoreline for the pink-purple flowers. And you can look for purple loosestrife while walking, hiking or biking.

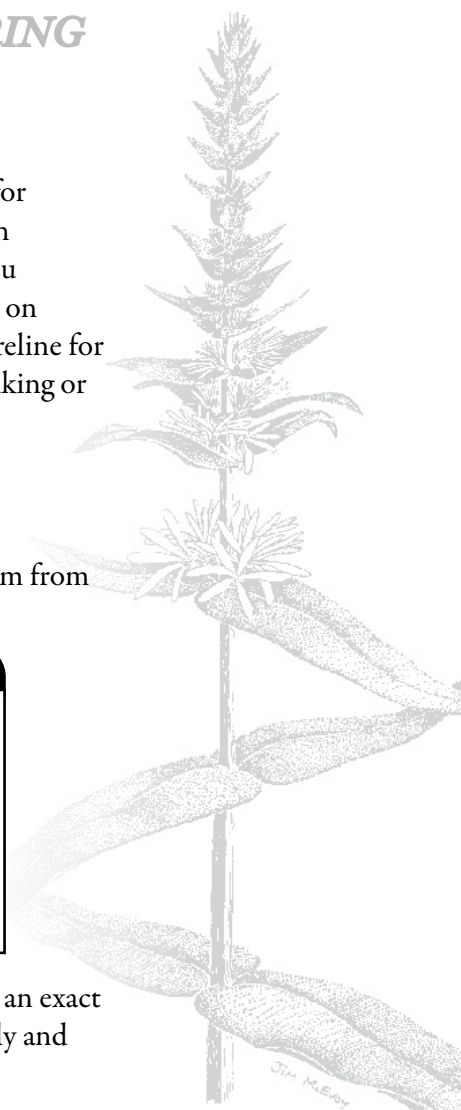
WHEN TO MONITOR

The best time of year to identify and look for purple loosestrife is when it's in bloom from mid July through September.

NOTE

The monitoring time varies from year to year depending upon the year's weather conditions and where you are located in the state. With warm summers, you will find purple loosestrife blossoming in southern Wisconsin in July. With cooler temperature, purple loosestrife may not blossom in northern Wisconsin until August.

There are no set numbers of surveys for purple loosestrife monitoring, nor is there an exact time to do the survey, but the best time of the year for identification is between July and September when the plants are in bloom.





WHERE DO I LOOK FOR PURPLE LOOSESTRIFE?

Purple loosestrife is typically found in wetlands, along the shorelines of lakes and streams, and along roadsides and trails. In order to discover it, especially before blooming, you need to be able to correctly identify it and distinguish it from native plants. Please refer to the identification section on pages 78-79, and the state purple loosestrife brochure in your packet.

HOW TO MONITOR

Looking for purple loosestrife is most easily done while riding in a car, boat or canoe, or while, biking or hiking. It is best to have a map available to mark locations (see mapping section below).

While becoming familiar with purple loosestrife identification, you may want to stop and get a closer look at the plants. You may want to carry binoculars to assist you in your plant identification. And remember, please do not trespass on private property while monitoring. Notes on locations should be marked on road maps and/or lake maps.

EQUIPMENT NEEDED

A GPS is ideal for correctly identifying locations. Photos are also a wonderful tool. Make sure you mark the location on the back of the photo. Binoculars will make monitoring easier. You can “zoom-in” on plants without getting out of your car or off your boat.

SETTING UP A MONITORING TEAM

It may help to designate multiple volunteers to monitor for purple loosestrife. Designate a team leader who can keep track of what areas were reported to have purple loosestrife. The team leader can also be the person who enters monitoring results on the Great Lakes Indian Fish and Wildlife Commission website <http://www.glifwc-maps.org/> or the CLMN website <http://dnr.wi.gov/lakes/CLMN> and to whom other volunteers can bring suspect species.

Consider having a mini-plant training session for your team. The Citizen Lake Monitoring Network Coordinator or the Aquatic Plant Management Coordinator for your area may be able to assist you with a training session (refer to pages viii-ix or <http://dnr.wi.gov/lakes/contacts>). If not, contact your local CLMN contact to see if an Aquatic Invasive Species training session will be scheduled for your area. These sessions are often set up in conjunction with local lake fairs and conventions. AIS workshops/training sessions are also listed at <http://www.uwsp.edu/cnr/uwexlakes/CLMN/training.asp>.

MAPPING

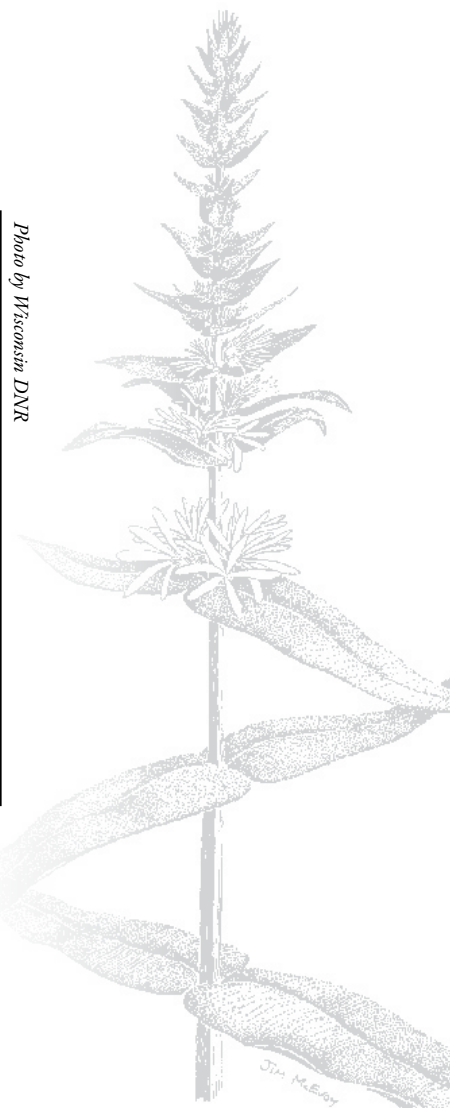
A map is a very quick and reliable way to assure that everyone knows the place you are talking about when you describe a certain location. County maps are great to use as they have the roads clearly marked. County maps are available at Visitor Information Centers or the Department of Transportation offices. Plat books are another option and may be purchased from your county government or UW-Extension offices. Lake and river maps make on-water monitoring record keeping a snap.

You can get lake and rivers maps from your local DNR office, Fishing Hot Spots, fishing map books, etc. Basic lake maps can also be generated through the DNR web site: <http://dnr.wi.gov/lakes/lakepages/search.aspx>. Type in the name of the lake and choose the county, then click “search.” Click on the lake name (if there are two or more lakes with the same name in the same county, select the lake you are after). This site will give you a plethora of information about your lake, but to find a map, scroll down to the map section and either click on “Contour (Bathymetric) Map” for a printable version, or click on “Interactive Map.” The interactive map (in the Surface Water Viewer) allows you to add in “layers” such as invasive species or monitoring sites.

If you have a GPS unit, you may want to use it to correctly identify the location of your purple loosestrife sighting.



Photo by Wisconsin DNR



Purple
Loosestrife



REPORTING

What would all the work that goes into gathering accurate information be worth if others could not read, review and act on it? Reporting is one of the most important parts of monitoring for invasive species. Knowing where invasive species are is extremely important in being able to track and understand their spread. Knowing how often monitors are looking for species and what they are finding is very important information.

The DNR, lake managers, researchers, and others use the information that is reported through the Citizen Lake Monitoring Network to study lakes and better understand aquatic invasive species. The information reported by volunteers is also provided to the state legislature, federal, tribal and local agencies/organizations that in turn may use this data to help determine funding for invasive species grants and programs.



You can enter your monitoring results on the Great Lakes Indian Fish and Wildlife Commission (GLIFWC) website (<http://www.glifwc-maps.org/>), or you can enter your monitoring results on the CLMN website (<http://dnr.wi.gov/lakes/CLMN>) (click “Enter Data” on the left side bar). If you don’t yet have a user id and password, click ‘Request a Wisconsin User ID and Password’. Then email Jennifer Filbert at jennifer.filbert@wisconsin.gov with your User ID and what monitoring you are involved in. Jennifer will set up your accounts and email you back. Once you receive an email back, you can log in. Once you’re logged in, go to the Submit Data tab and click “Add New” to start entering data. Choose the AIS monitoring project for your lake in the Project drop down box. The data entry format is like the forms listed above.

Estimate the size of the infestation and/or number of plants and indicate this on a map, a separate piece of paper or on the reporting form itself. **Please send all maps and/or GPS locations to Brock Woods, WDNR Purple Loosestrife Control Coordinator (page vii).**

To see where purple loosestrife has been reported, go to <http://dnr.wi.gov/lakes/invasives/>. The information that is provided through the CLMN will be incorporated into a statewide database maintained by GLIFWC. You can report your results as often as you wish, but be sure to at least report results once a year, at the end of the monitoring season.

WHAT TO DO WITH SUSPECT PLANTS

- Note the “suspect” plant’s location on your map, making sure you can find the spot(s) again. Fill out the Purple Loosestrife Volunteer Watch Report (Form 3200-119) and deliver it with the suspect plant to your team leader or local CLMN contact. Copies of the form can be found at the end of this section and at <http://dnr.wi.gov/lakes/monitoring/forms.aspx>.
- If you have a good camera, you can take pictures of the plant and its location. If you have close-ups of the plant, no samples of the plant are necessary. If you do not have a camera, you will need to take a sample to your local contact. With purple loosestrife, be sure to collect the flowering portion along with a section of stem with the leaves attached. Place the plant in a plastic bag so that no seeds are dropped during the transport. Use a permanent marker and record the following information on a plastic bag:
 - a. Date
 - b. Waterbody or road name
 - c. Description of where the sample was found
- Put the sample in the plastic bag and keep it in a cool place (a cooler in your car or refrigerator at home). Take the specimen to your local team leader, your local Land and Water Conservation Department, UW-Extension office or local DNR contact for identification.



Remember if you find “something,” don’t give up; there are a variety of control and management options to address purple loosestrife. Early detection is the key to controlling the situation!

The electronic reporting form can be found at the end of this section as well as <http://dnr.wi.gov/lakes/monitoring/forms.aspx>.



CONTROL METHODS

Control methods are included in this chapter since these methods are better defined than control methods for other AIS.

Effective long-term control of purple loosestrife in Wisconsin may require the use of both traditional control methods as well as biological control. Each has advantages and you must carefully decide which to use on any site. The most important thing is to start controlling the purple loosestrife now. Use traditional methods (see below) on all sites on which you need quick and effective control and have adequate resources to be successful. These measures are labor intensive and expensive on large sites, so small or low-density sites are most often controlled this way. These techniques will require additional vigilance. Even if all purple loosestrife is accessible, missed plants and seeds in the soil that germinate up to



a decade later result in more purple loosestrife plants. Thus, you must annually check for and treat these plants. You should also destroy any purple loosestrife in surrounding areas to stop new seed dissemination to your site. In fact, if your site is in an area surrounded by other loosestrife infestations, traditional control methods may not be worth the effort. These methods can also be very disruptive to wetlands and, in addition to cost and possible unwanted chemical effects, suggest a serious consideration of alternative biological control.

Traditional controls and biocontrol may be used together on the same site as long as insects have foliage to eat and are not killed by other methods. One combination is to cut the stems just beneath the flower head to prevent seed production, but leave lower foliage for the beetles. Another is to put beetles in the center of an infestation while using other controls on its edge to prevent the infestation from growing larger or spreading. Integrating control methods may be the best plan because there is some immediate purple loosestrife control while biocontrol insect numbers increase--perhaps eventually replacing the need for any traditional controls!

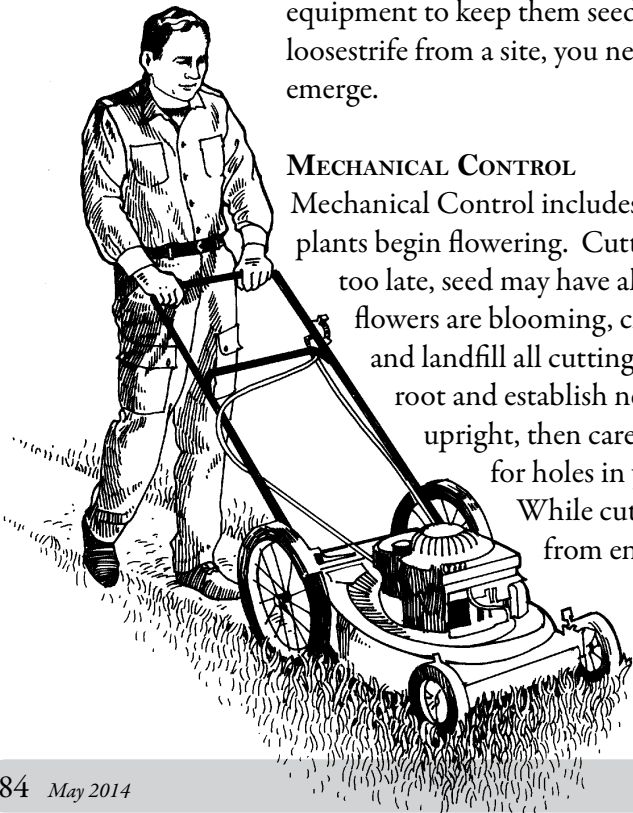
TRADITIONAL CONTROL METHODS

PREVENTION

Preventing purple loosestrife from infesting new sites is the best and easiest way to control it. In addition to where loosestrife is found in the wild, it may also be found in local gardens or near outlets from local storm sewers. Prior to 1987 purple loosestrife and hybrids of it were sold in nurseries in Wisconsin as a favorite garden plant. It's now illegal to sell or plant purple loosestrife because seeds from these plants often start new wild infestations. Please remove and destroy these--and any new plants--whenever you see them (get the landowner's permission first). At a minimum cut off their blooms. Do all this before they drop seed (which begins before blooming is complete). Dispose of plant parts in garbage bags and take them to the landfill. Purple loosestrife is exempt from yard waste regulations. Composting is not an option since compost piles do not reach temperatures sufficient to destroy the seeds and hardy roots. Also be careful to inspect clothing and equipment to keep them seed-free and prevent further spread. Once you remove purple loosestrife from a site, you need to monitor the site for any new seedlings which may emerge.

MECHANICAL CONTROL

Mechanical Control includes cutting, pulling or digging. Cutting is best done just before plants begin flowering. Cutting too early encourages more flowers to grow. If done too late, seed may have already fallen. Since lower pods can drop seed while upper flowers are blooming, check for seed on the entire flower stalk. If none, simply bag and landfill all cuttings. Do not leave the cut plants at the site as fragments will root and establish new plants. If there is seed, cut off each top while holding it upright, then carefully place it into the bag to catch any dropping seeds. Watch for holes in your bags so you don't spread seed while moving the bags. While cutting does not destroy the plant, it can prevent more seeds from entering the environment until you can destroy the plant.

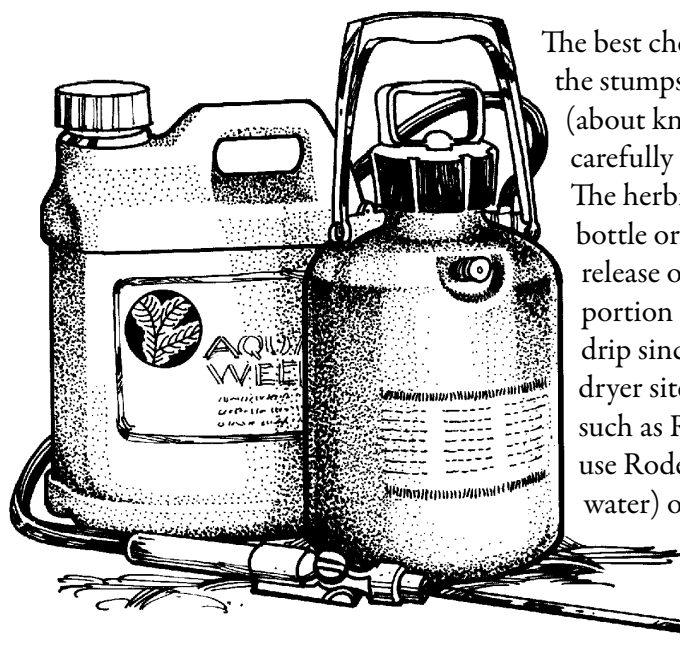


PULLING AND DIGGING

Pulling and digging can be effective, but can also be disruptive by creating disturbed bare spots, which are good sites for purple loosestrife seeds to germinate. They may also leave root fragments behind. These root fragments can grow new plants. Use pulling and digging primarily with small plants in loose soils, since they do not usually leave behind large soil gaps or root tips. Digging large plants with multiple stems and brittle roots often leaves root tips behind. Dispose of dug plants as listed above.

CHEMICAL CONTROL

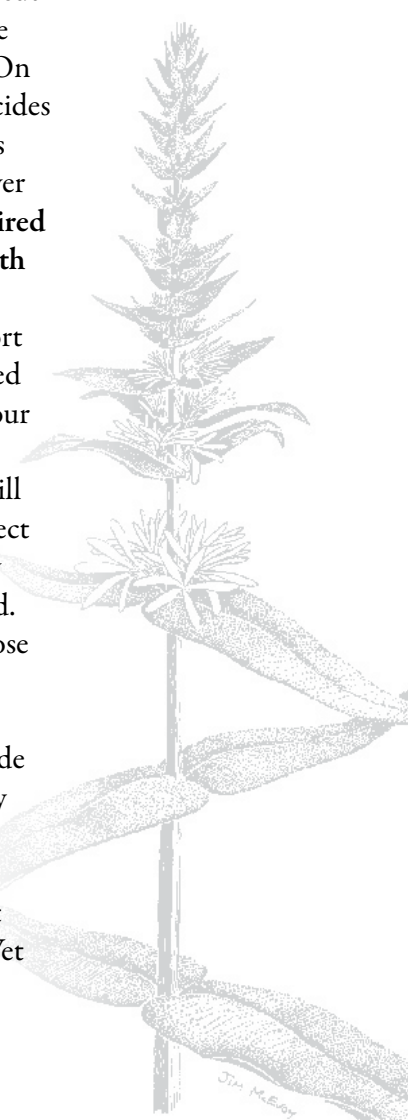
This is usually the best way to eliminate purple loosestrife quickly, especially if you have mature plants with extensive root systems. Timing is important: treat before flowering to prevent seed set. Dispose of plant parts as listed above. Always back away from sprayed areas as you go to prevent getting herbicide on your clothes.




The best chemical method is to cut stems and paint the stumps with herbicide. Cut low on the stem (about knee level) and apply the herbicide, while carefully stuffing the plant top into a plastic bag. The herbicide can be applied with a small drip bottle or spray bottle, which can be adjusted to release only a small amount. Cover the entire cut portion of the stem, but don't let the herbicide drip since it may kill other plants it touches. On dryer sites, use non-selective glyphosate herbicides such as Roundup and Glyphosate. For wet areas use Rodeo (a glyphosate formulated for use over water) or equivalent (WDNR permit is required – there is no cost for the permit with purple loosestrife control). These

chemicals have a short soil life. Stem applied glyphosate should be mixed to 20 to 40% active ingredient, depending on effects on your specific area's plants (always test). For sites with many native grasses, sedges, cattails, rushes, etc. consider using triclopyr herbicide marketed as Renovate since it does not kill these monocots, though it does breakdown slower. Check Renovate's label for its correct usage. Since you must treat at least some stems of each plant and the plants often grow together in a clump, all stems in a clump should be treated to ensure all plants are killed. Bag cuttings since they can root if they come in contact with water or moist soil. Dispose of clippings as mentioned above.

Another chemical method is using very carefully targeted foliar applications of herbicide (NOT broadcast spraying). This may be acceptable and reduce costs for sites with very high densities of purple loosestrife, since fewer non-loosestrife plants will be hit. Use a glyphosate formulated for use over water and in a weaker solution (around 1% active ingredient; always test first). You may need to wet only 25% of the leaves of each plant to kill it. Triclopyr can be used as a foliar spray, too; check its label for instructions. Wet most of the foliage if using Triclopyr.





You must obtain a permit from WDNR before applying any chemical over or near standing water. The process has been streamlined for control of purple loosestrife and **there is no cost.** The appropriate person to contact is your regional WDNR Aquatic Plant Management Coordinator (<http://dnr.wi.gov/lakes/contacts/> and click on “Aquatic Plant Management” or see page viii). S/he will want to know about your site and plan, may make further suggestions and will issue your permit.

BIOCONTROL

One of the cheapest, most effective control methods for purple loosestrife is biocontrol - using one organism to control another. One hundred species of insects that feed on purple loosestrife in Europe were tested on North American agricultural, wetland, and loosestrife-related plants to be sure there were little or no cross-over feeding. The selected insect species were then shipped to this continent and tested in quarantine on more species of North American plants before release. Four species passed all safety tests: two flower and root weevil species, and two types of “Cella” foliage beetles. No one has reported any substantive problems with the insects being used, nor has WDNR seen any real problems in over ten plus years of field monitoring.

A citizen biocontrol program uses the two safe *Galerucella* beetle species in combination with traditional methods. You can acquire these beetles by rearing a small number of starter beetles that you receive from WDNR. You may also be able to collect or buy beetles for rearing or release. Biocontrol is beginning to reduce the purple loosestrife in many areas around the state, and yours should be included. Along with prevention efforts, we still need to put out many more beetles to reduce purple loosestrife statewide. Success in this endeavor depends on YOU!

Please read any of the following items for a better understanding of the purple loosestrife problem and its solutions. All are available on the Internet and at many WDNR and UW Extension offices. Start with the WDNR/UWEX Purple Loosestrife Brochures: in color, WDNR publication # PUB-WT-799 2004 and in black/white, PUB-WT-829 2006 at <http://clean-water.uwex.edu/pubs/pdf/purple.pdf>. More details are found in “Purple Loosestrife: What You Should Know, What You Can Do,” PUB WT-276-2003. Specific biological control information and forms are found in the appendices of “See Cella Chow! A Purple Loosestrife Biocontrol Manual for Educators.” Download the manual or selected activities and appendices mentioned here, online at http://dnr.wi.gov/org/es/science/publications/ss981_2003.htm (PUB-SS-981 2003). Additional purple loosestrife and biocontrol information is also at <http://dnr.wi.gov/invasives/fact/loosestrife.htm>.

Most cooperators initiate biocontrol by rearing large numbers of beetles. This is the best way to ensure successful beetle establishment. WDNR supplies starter beetles for rearing, most needed supplies, and the know-how. The volunteer supplies purple loosestrife roots and a sunny location. Rearing is easy and cheap (\$50 or less for several sites), though it requires a little gardening skill. A small sunny area is needed and the hours of labor required are few. The beetle starter population for rearing is free if picked up at the DNR office in Madison, or they can be mailed to you for a program donation to cover shipping.

You may also be able to collect free beetles in the field yourself for propagation or simple dispersal, or buy ready-to-release beetles (private sellers). Call/write Brock Woods (608-221-6349) for details, including the current year's schedule of free field trips. No special permit is needed if beetles are purchased in-state for release, though you still need to send in the *Purple Loosestrife Cultivation Authorization and Biocontrol Insect Application* (at the end of this section), so WDNR knows when and where you have put your beetles.

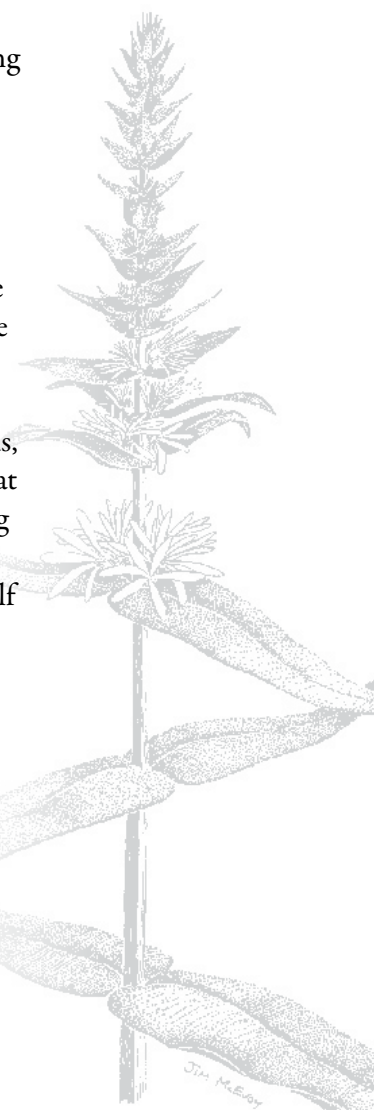
Rearing is easy. (Details are on page 91.)

1. Send in your signed "Application/Authorization Form" found at <http://dnr.wi.gov/lakes/monitoring/forms.aspx> (or at the end of this section);
2. Sew sleeve cages from fabric mailed to you.
3. Transplant the 10 biggest purple loosestrife rootstocks (from a local area) into pots. Do this first thing in the spring.
4. Immediately place sleeve cages on the pots.
5. Place all the pots into kids' wading pools or similar containers.
6. Maintain several inches of water in the pools to re-create wetland habitat.
7. In May, when plants are 2+ feet tall, put ten starter beetles into each of the cages. Secure the bags at the top so that the beetles do not escape.
8. When new beetles start appearing in June or July, simply move the potted plants to local purple loosestrife-infested wetlands and remove the sleeve cages so beetles can disperse. That's all there is to rearing your own beetles! Plus, if you pick a good local spot for first beetle releases, you can develop your own local insectary site for collecting free future beetles for rearing or immediate release!

After your release(s), report your site details to WDNR with the easy-to-fill-in *Purple Loosestrife Cultivation Authorization and Biocontrol Insect Application* (at the end of this section). Since beetle damage to purple loosestrife flowers is typical after a couple years, an easy way to see the decline in your purple loosestrife is to photograph your site's purple loosestrife blooms annually. You'll see sites change from purple to green by comparing the first year photo with ensuing years.

Try to team up with others to share in the work, costs, fun, and learning. Consider friends, or organizations such as Lake Districts, schools or conservation groups. This can be a great school project, but it usually needs to be finished in summer school or by a non-school tag team partner since a project's typical field time runs from April to July. (Rearing earlier, entirely within the school year, is possible, as well. Inquire if interested.) Also, the first half of "See Cella Chow!" includes 15 curricular activities centered on purple loosestrife and biological control, specifically to encourage use of the project for teaching!

To reserve your beetles from WDNR and get authorization to grow purple loosestrife for beetle production, fill out and send in your signed "Authorization/Application Form" (at the end of this section), along with the donation check if you want beetles delivered by mail. (Make your check payable to 'Wisconsin DNR' and note that it's for 'Purple Loosestrife Bio-Control'. To legally cultivate purple loosestrife plants to rear beetles, you must return the authorization form whether or not you need beetles from DNR. Send information packet to **Brock Woods, Purple Loosestrife Project Coordinator, DNR**



Science Operation Center, 2801 Progress Road, Madison, WI 53716. One hundred beetles is a typical starting number, but you can start with fewer or more. If you decide to purchase ready-to-release beetles or collect for immediate distribution you must still send in the *Purple Loosestrife Cultivation Authorization and Biocontrol Insect Application*.

If you cannot rear or acquire beetles for local release, the state purple loosestrife brochure lists many other ways you can help! One great way is to report new purple loosestrife sites on our “Watch Form,” downloaded at <http://dnr.wi.gov/lakes/monitoring/forms.aspx>. Describe the sites, and send the form to **Brock Woods, Purple Loosestrife Project Coordinator, DNR Science Operation Center, 2801 Progress Road, Madison, WI 53716.** Also, please share this information with interested others--especially teachers.

We hope you can join us in controlling purple loosestrife in Wisconsin. This will require a long-term effort involving many citizens. WDNR and UWEX will do everything possible to work cooperatively with all interested citizens and organizations in this work. If you have any questions or comments about the program, **please contact Brock Woods, Purple Loosestrife Project Coordinator, DNR Science Operation Center, 2801 Progress Road, Madison, WI 53716.** Brock can be reached at brock.woods@wisconsin.gov or by calling 608/221-6349.



Photo by Robert Korth



ADDITIONAL MATERIALS AND SUPPORTING DOCUMENTATION

MATERIALS FOR REARING 100 GALERUCELLA BEETLES

OUTLETS FOR HARD-TO-FIND MATERIALS AND VIDEOS

REPORTING FORMS

AQUATIC INVASIVES SURVEILLANCE MONITORING REPORT

- SINGLE LOCATION, MULTIPLE DATES

- MULTIPLE LOCATIONS, ONE DATE

PURPLE LOOSESTRIFE WATCH: REPORTING PROCEDURES

*PURPLE LOOSESTRIFE CULTIVATION AUTHORIZATION AND
BIOCONTROL INSECT APPLICATION*

*Purple
Loosestrife*





Purple
Loosestrife

MATERIALS FOR REARING 100 GALERUCELLA BEETLES

This is an exhaustive list and you may not need to purchase all items. Some may be available for free from the Wisconsin Purple Loosestrife Biological Control Project (WPLBCP). Those items are followed by an asterisk *. Other items, such as pots, you may be able to get from landscape businesses or buckets [that need holes drilled] from school lunch programs.

Getting Ready and Collecting Roots

1. Wetland plant identification book(s)
2. Map(s) to location of loosestrife roots and beetle release sites – Use a good local map after consulting the Great Lakes Indian Fish and Wildlife Commission's website at <http://www.glifwc-maps.org>.
3. Colored flagging in a roll or on metal stakes
4. Filled out, signed, copied, and mailed Purple Loosestrife Cultivation Authorization and Biocontrol Insect Application (Form 3200-116) found at <http://dnr.wi.gov/lakes/monitoring/forms.aspx> and at the end of this section)
5. Shovel or fork for digging and cutting roots
6. Plastic tubs (Rubbermaid® type) or plastic bags for hauling roots and waste
7. Pruning shears to cut off old dead stem tops and root tips, if necessary
8. Gloves, eye protection, rubber boots, and old clothes

Potting Roots

9. 12-15 large purple loosestrife roots from a local wetland
10. 12-15 plastic pots, 10-14 in. diameter*
11. About 2.5 cubic feet of high peat content potting soil (Fafard or a similar mix)*
12. 1 lb. fertilizer, slow release type like Osmocote 18-6-12, unless in the soil *
13. Hose and water source for rinsing roots, wetting soil, and filling pools
14. Two 4-foot child's wading pools, one 5-foot pool, or other suitable containers*

Pool Set-up and Plant Care

15. 24 yd. of 48+ in. wide, no-see-um insect netting, thread, and sewing machine to make 11 net sleeve cages about 78 in. long. Fold each piece of fabric along its short side and sew down the open 78-in. seam, tapering the cage at one end to match the diameter of your pots.*
16. Duct tape (and perhaps bungee type cords) to attach cages firmly to pots*
17. Wire or string to tie cage tops shut and to supports: also for guy wires
18. 4 X 8 foot space in full sun or at south facing windows
19. 7-foot high cage support system for suspending net cages-clotheslines or conduit posts or a design of your own!
20. Dependable watering system

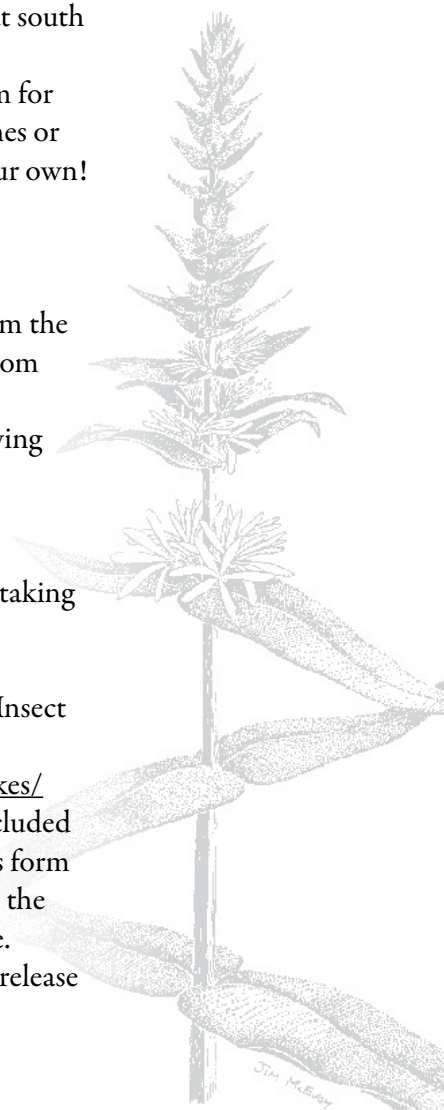
Raising Beetles

21. 100+ over-wintered beetles from the WPLBCP, field collected, or from other suppliers*
22. Aspirator for catching and moving beetles*

Releasing Beetles and Follow-up

23. Heavy-duty transportation for taking potted plants into the field.
24. Purple Loosestrife Cultivation Authorization and Biocontrol Insect Application (Form 3200-116) (found at <http://dnr.wi.gov/lakes/monitoring/forms.aspx> and included at the end of this section). This form is to be filled out and mailed to the WPLBCP on the day of release.
25. 3-11 PVC posts – for marking release site and photo point
26. Camera and film

Purple
Loosestrife



OUTLETS FOR HARD-TO-FIND MATERIALS AND VIDEOS

Beetles for rearing or field release in July-August (Call for details):

- Cornell University, (607) 275-3786 (from New York State – minimum # to order)
- Beetles Unlimited, (608) 831-5601 (from Wisconsin – no minimums)

*Insect netting (need approximately 78 inches of fabric/cage)
(WPLBCP supplies free with 3 year rearing):*

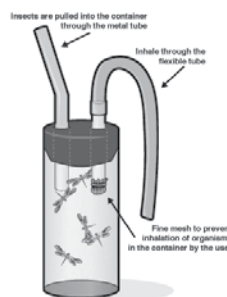
Venture Textiles
115 Messina Drive
Baintree, MA 02185
(781) 794-1400

56 inches of white or slate; 500 yd. bolt \$1.10/yard;
lesser yardage is \$1.10/yard plus \$10 cut charge

Miscellaneous other supplies:

Aspirators (a small jar with hoses for
collecting/moving beetles; about \$7)

BioQuip
17803 La Salle Avenue
Gardena, CA 90248
(310)324-7931
Fax: (310)324-7931



Videos:

- “Restoring the Balance: Biological Control of Purple Loosestrife” – a summary of the problem, traditional and biological solutions and biological control safety.
- “Rearing of Biological Control Agents for Purple Loosestrife” – more rearing details. \$25 each (but volume discounts apply)

Resource Center
7 Business & Technology Park
Cornell University
Ithaca, NY 14850
(607) 255-7660, ext. 2090
Fax: (607) 255-9946

NOTE

Your local and school libraries can also get these on inter-library loan from the Wisconsin DNR library in Madison for free!

Aquatic Invasives Surveillance Monitoring End of Season Report

Form 3200-133 (02/10)
Previously Form 3200-124

This monitoring is designed to help detect new invasive species on your lake, so DNR can be alerted and lake residents and/or professionals can respond appropriately. The purpose of the DNR collecting this data is to let us know what methods trained citizens and professionals use when actively looking for aquatic invasive species. You are often the ones to alert us of new invasives in our waters. Remember for surveillance monitoring, a report of "no invasive" at a location is just as important as finding an invasive. One cannot confidently state that the invasive is not present in an area if no one has looked and reported their findings. Knowing where invasives are not, as well as where they are, is extremely important in being able to track and understand their spread. Knowing how often monitors are looking for species and what they are finding is very important information.

Notice: Information on this voluntary form is collected under ss. 33.02 and 281.11, Wis. Stats. Personally identifiable information collected on this form will be incorporated into the DNR Surface Water Integrated Monitoring System (SWIMS) Database. It is not intended to be used for any other purposes, but may be made available to requesters under Wisconsin's Open Records laws, ss. 19.32 - 19.39, Wis. Stats.

Data Collectors

Primary Data Collector Name	Phone Number	Email
Additional Data Collector Names		
Total Paid Hours Spent (# people x # hours each)	Total Volunteer Hours Spent (# people x # hours each)	

Monitoring Location

Waterbody Name	Township Name	County	Boat Landing (if you only monitor at a boat landing)
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Dates Monitored

Start Date (when you first monitored this season)	End Date (when you last monitored this season)
Did at least some data collectors monitor in... May? June? July? August? (circle all that apply)	

Did you monitor...

All Beaches and Boat Landings?	Frequently	Some of the Time	Not Often/Never
Perimeter of whole lake?	Frequently	Some of the Time	Not Often/Never
Docks or piers?	Frequently	Some of the Time	Not Often/Never

Did you...

Walk along the shoreline?	Frequently	Some of the Time	Not Often/Never
Observe entire shallow water area (up to 3 feet deep)?	Frequently	Some of the Time	Not Often/Never
Use rake to extract plant samples?	Frequently	Some of the Time	Not Often/Never
Check underwater solid surfaces (boat hulls, dock legs, rocks)?	Frequently	Some of the Time	Not Often/Never

Other: _____

Other: _____

Did you find...(even if not a new finding for the lake or stream)

Banded Mystery Snail?	Yes	No	Did not look for	Hydrilla?	Yes	No	Did not look for
Chinese Mystery Snail?	Yes	No	Did not look for	Purple Loosestrife?	Yes	No	Did not look for
Curly-Leaf Pondweed?	Yes	No	Did not look for	Rusty Crayfish?	Yes	No	Did not look for
Eurasian Water Milfoil?	Yes	No	Did not look for	Spiny Waterfleas?	Yes	No	Did not look for
Fishhook Waterfleas?	Yes	No	Did not look for	Zebra Mussels?	Yes	No	Did not look for
Freshwater Jellyfish?	Yes	No	Did not look for	Other?: _____			

If you find an aquatic invasive

If you find an aquatic invasive and it is not listed at <http://dnr.wi.gov/lakes/AIS> fill out an incident report for the species. Then bring the form, a voucher specimen if possible, and a map showing where you found it to your regional DNR Citizen Lake Monitoring Coordinator as soon as possible (to facilitate control if control is an option).

If you don't find an aquatic invasive

If you submit your data online, that is all you need to do. Otherwise, please mail a copy to your regional DNR Citizen Lake Monitoring Coordinator. <http://dnr.wi.gov/lakes/contacts>

The purpose of this form is to notify DNR of a new species of AIS in a waterbody. Only use if you found an aquatic invasive plant on a lake where it hasn't been found previously.

To find where aquatic invasives have already been found, visit: <http://dnr.wi.gov/lakes/ais>.

Notice: Information on this voluntary form is collected under ss. 33.02 and 281.11, Wis. Stats. Personally identifiable information collected on this form will be incorporated into the DNR Surface Water Integrated Monitoring System (SWIMS) Database. It is not intended to be used for any other purposes, but may be made available to requesters under Wisconsin's Open Records laws, ss. 19.32 - 19.39, Wis. Stats.

Primary Data Collector

Name	Phone Number	Email
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Monitoring Location

Waterbody Name	Township Name	County
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Boat Landing (if you only monitor at a boat landing)

Date and Time of Monitoring or Discovery

Monitoring Date	Start Time	End Time
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Information on the Aquatic Invasive Plant Found (Fill out one form for each species found.)

Which aquatic invasive plant did you find?:	<input type="checkbox"/> Curly-leaf Pondweed	<input type="checkbox"/> Eurasian Water-milfoil	<input type="checkbox"/> Purple Loosestrife
	<input type="checkbox"/> Brittle Naiad	<input type="checkbox"/> Hydrilla	<input type="checkbox"/> Brazilian Waterweed
			<input type="checkbox"/> Yellow Floating Heart

Where did you find the invasive plant?

Latitude:	Longitude:
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Approximately how large an area do the plants occupy?

- ☐ A Few Plants ☐ One or a few beds ☐ Many beds ☐ A Whole Bay or Portion of Lake
☐ Widespread, covering most shallow areas of lake ☐ Don't know (e.g. didn't check the whole lake)

Was the plant floating or rooted?

- ☐ Floating ☐ Rooted

Estimated percent cover in the area where the invasive was found (optional)

Substrate cobble, %	Substrate muck, %	Substrate boulders, %	Substrate sand, %	Bottom covered with plants, %
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Voucher Sample

Did you collect a sample of the plant (a voucher specimen) and bring it to your local DNR office? If so, which office?

- ☐ Rhinelander ☐ Spooner ☐ Green Bay ☐ Oshkosh ☐ Did not take plant sample to a DNR office
☐ Fitchburg ☐ Waukesha ☐ Eau Claire ☐ Superior ☐ Other Office _____

Please collect up to 5-10 intact specimens. Try to get the root system, all leaves as well as seed heads and flowers when present. Place in ziplock bag with no water. Place on ice and transport to refrigerator. Bring samples, a copy of this form, along with a map showing where you found the suspect plants to your regional AIS or Citizen Lake Monitoring Coordinator at the DNR.

For DNR AIS Coordinator to fill out

AIS Coordinator(s) or qualified field staff who verified the occurrence: _____

Statewide taxonomic expert who verified the occurrence: _____

(for list see <http://dnr.wi.gov/invasives/aquatic/whattodo/staff/AisVerificationExperts.pdf>)

Was the specimen confirmed as the species indicated above?	<input type="checkbox"/> Yes <input type="checkbox"/> No	If no, what was it?
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Herbarium where specimen is housed: _____	Herbarium Specimen ID: _____
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Have you entered the results of the voucher in SWIMS?	<input type="checkbox"/> Yes <input type="checkbox"/> No
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AIS Coordinator: Please enter the incident report in SWIMS under the Incident Report project for the county the AIS was found in. Then, keep the paper copy for your records.

Purple Loosestrife Watch: Reporting Procedures

Where & When to Look

Purple Loosestrife is primarily a wetland plant. For this reason, you are most likely to find purple loosestrife growing in a wetland, or adjacent to marshes, lakes, ponds, rivers, or streams. Because of purple loosestrife's extreme hardiness it can also be found growing in ditches along roadways, lowlands, mud holes and drier sites like prairies and agricultural land. **A good rule of thumb is: any site where there are wet soils or standing water at any time during the year is potential purple loosestrife habitat.** Purple loosestrife also needs full sunlight to thrive, so shaded areas are typically not considered to be good habitat.

As a volunteer watcher, the best places for you to look for purple loosestrife are along lakeshores, wetlands, banks of rivers or tributaries, and in the ditches along roadways. Purple loosestrife blooms from about mid July through mid September. **For this reason, August is the best time to look for purple loosestrife.** Before monitoring, you should become familiar with the characteristics of purple loosestrife so that you don't confuse it with native look-alikes plants like fireweed, which bloom at the same time. Please refer to the new state purple loosestrife brochure or the brochure "Purple Loosestrife: What You Should Know, What You can Do" for information on identifying both the weed and similar native plants.

When to Report

- If you discover a new patch any size, any where, even just one plant (Consider personally treating very small infestations!)
- If you are unclear as to whether a site has or has not been reported previously.

How to Report

Fill out the form, detach, fold in half, stamp and mail to the Wisconsin Purple Loosestrife Control Coordinator or fax to 608-221-6353. If you have multiple forms to turn in, place all in an envelope and mail to the address on reverse. A copy of the form will be forwarded to your local DNR Purple Loosestrife Coordinator.

State of Wisconsin
Department of Natural Resources

Purple Loosestrife Volunteer Watch Report

Form 3200-119 (5/03)

Notice: Information provided on this form is voluntary, and authority for its use is identified in s. 23.11, Wis. Stats. Personally identifiable information, including such data as volunteer name, address, etc. will be used for DNR program research and management and is not intended to be used for other purposes. Wisconsin's Open Records law requires the Department to provide this information upon request [ss. 19.31 - 19.69, Wis. Stats.].

Purple Loosestrife Location Information

Report Date	County	Township	Range	E / W	Section(s)
			N		

☐ Lake _____
 ☐ Marsh/Wetland _____

☐ River _____
 ☐ Roadside Ditch _____

☐ Other _____

Nearest Road or Intersection	OR	GPS Coordinates
	Latitude: DEG MIN SEC	Longitude: DEG MIN SEC
		N W

Land Ownership (Check One): ☐ Public ☐ Private ☐ State ☐ County ☐ Unknown

Are you the owner? ☐ Yes ☐ No If No, Name of Owner _____

Directions to Find the Site _____

Approximate No. of Plants/Clumps	Infestation Acreage
<input type="checkbox"/> 1-10 <input type="checkbox"/> 11-49 <input type="checkbox"/> 50+	<input type="checkbox"/> Less than 1/4 acre <input type="checkbox"/> 1/2 - 1 acre (size of football field) <input type="checkbox"/> 1-10 acres <input type="checkbox"/> More than 10 acres
Loosestrife Density	Has the site been treated? If so, how? (Check All That Apply)
<input type="checkbox"/> Less than 50% <input type="checkbox"/> More than 50%	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Pulled <input type="checkbox"/> Cut <input type="checkbox"/> Chem <input type="checkbox"/> Bio <input type="checkbox"/> Unknown

Volunteer Information

Name	Telephone Number or E-Mail Address
Street Address	
City	State ZIP Code

Place
Stamp
Here

DEPARTMENT OF NATURAL RESOURCES
WISCONSIN PURPLE LOOSESTRIFE CONTROL COORDINATOR
1350 FEMRITE DRIVE
MONONA, WI 53716

Purple Loosestrife Cultivation Authorization and Biocontrol Insect Application

Form 3200-116 (R 5/03)

Page 1 of 2

Notice: To be authorized to plant or cultivate purple loosestrife in the state for the purpose of controlled experimentation only, individuals must obtain authorization from the Wisconsin Department of Natural Resources (WDNR) or the Wisconsin Department of Agriculture, Trade and Consumer Protection (WDATCP). Any person who knowingly violates the requirement may forfeit not more than \$100 for each violation, per s.23.235, Wis. Stats. WDATCP also oversees importation of organisms and this form may also authorize you to import and disperse certain purple loosestrife control insects under WDNR's permit from WDATCP, as long as in-state or authorized sources are used. You are required to provide complete information requested in order to obtain these authorizations. Personally identifiable information collected will be used for program research and management purposes and is not intended to be used for other purposes. Wisconsin's open Records law requires the Department to provide this information upon request (ss. 19.31 - 19.69, Wis. Stats.).

Instructions: Fill out all sections completely, except for Beetle Release Site Information if you do not yet have an intended release location. Under Beetle Rearing Information, be sure to indicate if you need beetles or cage nets from WDNR for propagation, and how many. Mail your completed forms, along with your donation check made out to WDNR (tax deductible) to cover beetle delivery, if needed, to: Purple Loosestrife Biocontrol Coordinator, 1350 Femrite Drive, Monona, WI 53716. Address questions about the program to the Coordinator at 808-221-6349 or brock.woods@dnr.state.wi.us.

The Department Coordinator will sign and return a copy of the authorization form to you. Both the applicant and Coordinator must sign the form for the applicant to be officially registered with the Department to legally grow purple loosestrife or distribute beetles under WDNR's permit. This dually signed permit:

- Affirms your interest in joining the Department's purple loosestrife biocontrol program.
- Indicates your support for program goals and your agreement to grow purple loosestrife plants, solely for the purpose of rearing the biocontrol insects, *Galerucella californiensis* and/or *G. pusilla*.
- Authorizes you to acquire, raise and release these two beetle species under WDNR's permit from the Wisconsin Department of Agriculture, Trade and Consumer Protection (WDATCP), but only if they originate from the WDNR, other in-state sources or WDNR-authorized out-of-state sources.

As a biocontrol cooperator with WDNR you will join hundreds of other volunteers using a safe and effective, long-term strategy to control this aggressive, non-native plant. All your efforts will be crucial and greatly appreciated!

Updated program information is available on the WDNR web site at: <http://www.dnr.state.wi.us> (on various pages).

Applicant Information

Name		Organization (if any)
Street Address		
City		State ZIP Code
(Area Code) Home Telephone Number	(Area Code) Work Telephone Number	E-Mail Address

Beetle Rearing Information

Years in which I have reared beetles (or "0").

Check all that apply:

- ☐ I wish to rear beetles in spring, _____ (year).
- ☐ I would like _____ beetles from WDNR for propagation (number; 100 is typical; 10 beetles/plant)
- ☐ Send free netting for _____ cages (1 cage/10 beetles, plus 1 spare) Let me know if other equipment is available.
- ☐ I need a copy of the beetle rearing guide.
- ☐ My \$30 donation to cover delivery is enclosed; or,
- ☐ I will collect my propagation/distribution stock or buy it elsewhere (not from WDNR). Send monitoring information.

Use this section for listing additional information you need.

Purple Loosestrife Cultivation Authorization and Biocontrol Insect Application

Form 3200-116 (R 5/03)

Page 2 of 2

Beetle Release Site Information - Optional

Information in this section is optional, based on whether or not you have already chosen a beetle release site. Check all that apply. This will help us evaluate the site to determine if it is suitable for beetles and bio-control. The site meets the following criteria:

Category 1	<input type="checkbox"/> No purple loosestrife (PL) control at present	
	<input type="checkbox"/> Control of PL going on, but it's ineffective	
	<input type="checkbox"/> No chemical control over the last two years	
Category 2	<input type="checkbox"/> 50 plants-1 acre of PL (best for insectary: recollecting, rearing/dispersing insects)	
	<input type="checkbox"/> More than 1 acre of PL	
Category 3	<input type="checkbox"/> Good site access and footing (for follow up monitoring or collecting)	
	<input type="checkbox"/> Access and/or footing poor	
Category 4	<input type="checkbox"/> Site secure for at least several years (no other PL control or development planned)	
Category 5	<input type="checkbox"/> Plants mature: at least several stems (3/16" plus diameter) per clump: 3' to 7' tall	
Category 6	<input type="checkbox"/> More than half of the plants are PL (almost solid PL)	
	<input type="checkbox"/> PL is half or less of all plants on the site	
Category 7	<input type="checkbox"/> Water level is below ground surface all year or, if it floods, then not during June-August	
	<input type="checkbox"/> Water below surface all year or, if it floods, not for more than several days at any time	
Category 8	<input type="checkbox"/> Site not likely to spread seed to nearby, un-infested areas while beetle numbers increase	
Severity of purple loose strife infestation in the area around your site is: (check one)		
<input type="checkbox"/> Low	<input type="checkbox"/> Medium	<input type="checkbox"/> Severe

Site Location

Site Owner Name	Address	(Area Code) Telephone Number
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Have you contacted your local WDNR or UW Extension agent about the site? ☐ Yes ☐ No

If YES, Name of agent contacted

Terms and Conditions of Permit

The cooperator agrees to the following requirements to participate in the WDNR Purple Loosestrife Biocontrol Program:

1. Raise purple loosestrife in a controlled setting to minimize the possibility of spreading the plant further through seed or plant parts; pinch off all developing flowers once larvae are done feeding; destroy unused plants/parts that not returned to loosestrife infestations.
2. Obtain permission from all landowners on whose property beetles will be collected or released.
3. Acquire for rearing or release, purple loosestrife foliage beetles (*Galerucella californiensis* and/or *G. pusilla*) from WDNR or other Wisconsin suppliers, from Wisconsin sites, with landowner permission, or from any WDNR-authorized out-of-state supplier. (This includes Cornell University, New York, and the Illinois Dept. of Natural Resources and any other sources that may be added in the future.)
4. Furnish the WDNR with a complete list of all insect release site locations and landowners within one month of each release. Use the release site form # 3200-117, available from WDNR.

Applicant Signature	Date
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WDNR Use Only

The State of Wisconsin Department of Natural Resources hereby issues this authorization to plant or cultivate purple loosestrife for biocontrol purposes, solely for the purpose of rearing the biocontrol insects as specified above.

WDNR Project Coordinator	Signature	Date
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