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Invasive plants can thrive and aggressively spread beyond their natural range, disrupting ecosystems. The *Management of Invasive Plants in Wisconsin* series explains how to identify invasive plants and provides common management options. Management methods recommend specific timings for treatment, as well as expected effectiveness. For more information, go to: fyi.uwex.edu/weedsci/category/invasive-plants-of-wisconsin.

Purple loosestrife

(*Lythrum salicaria*)

Purple loosestrife is an herbaceous perennial that grows 3–9' tall, with many sides (four or more) and stems that become semi-woody late in the growing season. Mature plants have multiple stems (30–50) originating from a woody crown.

Legal classification in Wisconsin:

Restricted

Leaves: Opposite and occasionally alternate, pairs alternating at 90° angles along the stem. Leaves are 1–4" long, lance-shaped, have smooth edges, and are directly attached to the stem (sessile).

Flowers: Summer. Magenta-colored with 5–6 petals that are clustered like spikes at stem tips.

Fruits and seeds: Very small and borne in capsules that burst in middle to late summer. Bursting capsules progress upward from the bottom of the spike of flowers to the top.

Roots: Large, semi-woody taproot with extensive spreading roots forming mats below the soil surface. The root system of one plant can occupy an area up to 4.5' in diameter.

Similar species: Swamp loosestrife (*Decodon verticillatus*; native) can be distinguished by leaves that do not alternate at 90°, stems that arch and often root where the thickened portion of the stem (nodes) touch soil, and flowers clumped along the stem where leaves attach to the stem (axils). Winged loosestrife (*Lythrum alatum*; native) can be distinguished by its winged stem and paired flowers borne in scattered leaf axils. Fireweed (*Epilobium angustifolium*;



native), blue vervain (*Verbena hastata*; native), and blazing stars (*Liatris* sp.; native) can be distinguished from purple loosestrife by loosestrife's squared stalk, leaves borne in pairs, and flower spikes borne at stem tips.

Ecological threat:

- Invades all types of wetlands where it can become the dominant vegetation.
- Alters wetland function, including decomposition rates and timing, water chemistry, and evapotranspiration rates.

Non-chemical control

Removal

Effectiveness in season: 50–70%
Season after treatment: < 50%

Pulling and digging can be effective individual plant control techniques. Pull if soil conditions allow for the removal of all root tissue. This is easier with a first- or second-year plant since its root system is not extensive. Root fragments left behind can resprout. Bag all plant material and dispose of it in a landfill or burn it to avoid potential for root material or above-ground tissue to reroot.

Mowing

Effectiveness in season: 50–70%
Season after treatment: < 50%

Mowing or cutting in late summer after flowers have emerged, but before seeds are produced, will reduce the number of shoots and seeds produced, but provides unreliable levels of suppression. Mowing three times in a season, starting in late spring and repeating before flowers form on regrowth, will provide suppression for the entire season. Use a mower that bags cut material or rake and bag cut material after mowing and dispose of it in a landfill or burn it to avoid potential for above-ground tissue to resprout.

Cultivation

Effectiveness in season: 90–100%
Season after treatment: 70–90%

Cultivation, if repeated, can provide effective control since roots that resprout are located near the soil surface. Cultivate three times a season beginning in late spring. Cultivation, however, can spread root fragments into previously uninfested areas.

Prescribed burning

Effectiveness in season: 50–70%
Season after treatment: < 50%

Burns can kill germinating seedlings and suppress above-ground growth of established plants, depending on fire intensity. However, the habitats that loosestrife grows in are rarely conducive to fire. This makes it difficult to have a complete burn that significantly damages loosestrife populations. After the fire, established plants will likely be quick to resprout and reinvade areas; this management method is not recommended unless integrated with other techniques. A handheld propane torch can be effective for treating seedlings.

Biological control

Effectiveness in season: < 50%
Season after treatment: < 50%

The Wisconsin DNR, in cooperation with the U.S. Fish and Wildlife Service, has developed a biological control agent rearing and distribution program. This program focuses on two foliage-consuming beetles (*Galerucella* sp.). These beetles can reduce populations by > 90% within five years, although the level of reduction varies by site and year. Plant size and seed production are typically greatly reduced, but plants are rarely eliminated. Competition from taller native plants can be used to reduce loosestrife further and keep it controlled. Contact the Wisconsin DNR if you are interested in receiving more information about this biological control program.

Manipulation of the environment

Effectiveness in season: < 50%
Season after treatment: < 50%

Flooding can be effective at reducing purple loosestrife populations, especially if used in conjunction with cutting stems. Cut the stems of purple loosestrife so that the part of the plant that remains rooted is below water and remains submerged for at least 12 months. This is easiest in an area where the water level can be controlled.

Chemical control

Foliar

Apply directly to individual plants or broadcast across an infested area. Broadcasted foliar applications are typically the most cost-effective treatment in dense infestations. Use lower rates on smaller plants and less dense populations and higher rates on larger plants and denser populations.



aminopyralid*

Effectiveness in season: 70–90%
Season after treatment: 70–90%

Common name: Milestone

Rate:

broadcast: 5–7 fl oz/A
 (0.08–0.1 lb a.e./A)
spot: Equivalent to broadcast rates.

Timing: Apply from early to middle flowering stage.

Remarks: 14 fl oz/A can be used as long as less than half of the area is treated. Depending on the volume of solution applied per acre, typical mixtures for spot treatments are 2–8 mL Milestone per gallon of water.

Caution: Do not apply directly to water or to areas where surface water is present. Remains in soil for up to one year, depending on application rate. Overspray or drift to desirable plants should be avoided since even minute quantities of the spray may cause severe injury to plants. Do not compost treated plants since herbicide can persist through composting process.

glyphosate*

Effectiveness in season: 70–90%
Season after treatment: 50–70%

Common name: Rodeo

Rate:

broadcast: 2–3 lb a.e./A
spot: For a 3 lb a.e./gal product. 1–1.5%
 (0.03–0.05 lb a.e./gal)

Timing: Apply during early flowering stage or to regrowth in the fall. Fall treatments are the most effective, but must be made before a killing frost.

Caution: Use product labeled for aquatic use if potential exists for solution to contact surface waters. Applications can result in bare ground since glyphosate is not selective. Overspray or drift to desirable plants should be avoided since even minute quantities of the spray may cause severe injury to plants.

imazapyr*

Effectiveness in season: 90–100%
Season after treatment: 70–90%

Common name: Habitat

Rate:

broadcast: 8–16 fl oz/A
 (0.13–0.25 lb a.e./A)
spot: 0.5–1% (0.01–0.02 lb a.e./gal)

Timing: Apply during bud to middle flowering stage.

Caution: Use product labeled for aquatic use if potential exists for solution to contact surface waters. Applications can result in bare ground since imazapyr is not selective and can remain in the soil for several months to more than a year, depending on application rate. Overspray or drift to desirable plants should be avoided since even minute quantities of the spray may cause severe injury to plants.

metsulfuron*

Effectiveness in season: 70–90%
Season after treatment: 70–90%

Common name: Escort

Rate:

broadcast: 0.5–1 oz/A (0.3–0.6 oz a.i./A)
spot: 0.04 oz/gal (0.02 oz a.i./gal)

Timing: Apply when target species is actively growing and fully leafed out.

Caution: Do not apply directly to water or to areas where surface water is present. Remains in the soil for months, depending on application rate. Overspray or drift to desirable plants should be avoided since even minute quantities of the spray may cause severe injury to plants.

triclopyr*

Effectiveness in season: 50–70%
Season after treatment: < 50%

Common name: Garlon 3A

Rate:

broadcast: 192–256 fl oz/A
 (4.5–6 lb a.e./A)
spot: 1–2% (0.03–0.06 lb a.e./gal)

Timing: Apply during the bud to middle flowering stage.

Caution: Use product labeled for aquatic use if potential exists for solution to contact surface waters. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination. Overspray or drift to desirable plants should be avoided since even minute quantities of the spray may cause severe injury to plants.



*Active ingredient (a.i.)



Herbicide information is based on label rates and reports by researchers and land managers. Products known to provide effective control or in common use are included. Those that do not provide sufficient control or lack information for effectiveness on target species have been omitted.

References to pesticide products in this publication are for your convenience and not an endorsement of one product instead of a similar product. You are responsible for using pesticides in accordance with the label directions. *Read the label before any application.*

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