

WDNR PURPLE LOOSESTRIFE CONTROL RECOMMENDATIONS: BIOCONTROL OR CHEMICAL/MECHANICAL METHODS?

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Effective long-term control of purple loosestrife (PL) in Wisconsin probably requires both chemical/mechanical control methods as well as biological control. Each has advantages; decide carefully which to use. The most important thing is to start controlling the PL in your wetland **now**.

Use chemical/mechanical methods 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. They are especially important for preventing new PL infestations. These techniques will require vigilance if the PL has produced new seed on a site. Even if all plants are treated, seeds in the soil may germinate up to a decade later and result in more PL plants. These you must annually locate and treat. You should also destroy any PL in surrounding wetlands to stop new seed dissemination to your site. In fact, if your site is in an area surrounded by other loosestrife infestations, small scale control may not be worth the effort. These methods can also be disruptive to wetlands, a reason to consider biological control.

Biological control (BC) uses plant predator insects to control PL, a process that should be started in all PL infestations that have no other effective control, often the larger ones. Some small infestations receive beetles to serve as insectaries, where beetles may be collected efficiently for propagation work or simple dissemination to new sites. BC is inexpensive and natural and may become self-sustaining and self-disseminating with minimal disturbance to wetlands. However, set-up time is longer and its outcome less certain. 2,000 summer adult beetles should start a new population, but it must grow commensurately large to affect the local PL population, a process that usually takes at least several years, may require several infusions of control insects and may not work on some sites. Many sites have developed good PL control in 2-3 years. Contact the WDNR Biocontrol Program for more information about local beetle rearing: DNR Science Center 2801 Progress Road, Madison, WI 53716 or email brock.woods@wisconsin.gov or call 608/221-6349.

Traditional controls and biocontrol may be used together on the same site as long as insects have foliage to eat and are not exposed to herbicides. One way is to annually cut stems just beneath inflorescences to prevent seed production, but leave the foliage for beetle consumption—until the beetles decimate the plants. Another is to put beetles in the center of an infestation while using other controls on its edge and outliers to prevent the infestation from growing larger or spreading. Integrating control methods simultaneously or alternating them may produce best results, since some immediate PL control may be established while control insect numbers increase enough to find local loosestrife plants on their own--perhaps eventually replacing any need for other control methods!

TRADITIONAL METHODS

Preventing PL from infesting new sites is the easiest control! Be sure local gardens or other sites higher in the watershed have no PL that produces seed. Monitor your wetland sites annually and pull or dig any new young PL plants. Especially check areas near moving water, wetland/upland edges, storm sewer outlets or gardens that may have contained PL. One mature PL plant can produce over 2 million seeds a season, so learn to recognize pre-flowering plants, or search when PL just starts to bloom. Destroy them before they mature and drop seeds. Flower maturation and seed drop will start below before flowering ends above. Dispose of plants in a capped landfill, or dry and burn them. Composting will not kill the seeds. Keep clothing and equipment seed-free to prevent spread. Take responsibility to remove new plants wherever you see them (with landowner permission).

MECHANICAL CONTROL includes cutting, pulling or digging. Cutting is best done just before plants begin flowering. Cutting too early encourages more flowers to grow than before, but if done too late, seeds may have already fallen. If pods are present always check for viable seed. If none, simply bag all cuttings (to prevent them from rooting). If seeds are present, cut off each top while bending it over into a bag to catch any dropping seeds. Watch for holes in your bags so you don't spread seeds where you take the bags.

Pulling and digging can be effective, but can also be disruptive by creating disturbed bare spots, which are good sites for PL seeds to germinate, or leaving behind root fragments that grow into new plants. Use these methods primarily with young, small plants in loose soils, since they do not usually leave behind large gaps or root tips; large plants with multiple stems and brittle roots often do.

CHEMICAL CONTROL

This is usually the best way to eliminate PL quickly, especially with mature plants that do not pull out with all roots. Follow all label instructions. Chemicals used may have a short shelf life; always test them & check for effective concentrations. Treat in July or August before flowering to prevent seed set. Dispose of plant parts as above. Always back away from sprayed areas as you go to avoid getting herbicide on your clothes. Dye in the herbicide will identify areas already treated.

The best method is to cut stems and paint the base cuts with herbicide. Cut low on the stem (about knee level) with one hand and apply the herbicide with the other, carefully stuffing the plant tops into plastic bags--a two person crew works well for this. The herbicide can be applied with a small drip 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. For drier areas non-selective glyphosate herbicides such as *Roundup* and *Glyfos* are effective. For wet areas use an herbicide formulated for use over water, such as Rodeo or equivalent (WDNR permit required). 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, may stay in the soil for a longer time, and have more residual effects on plants. Stem applied glyphosate should be mixed to 20 to 40% active ingredient. Check *Renovate's* label for its correct use. Since you must treat at least some stems of each plant and they often grow together in a clump, all stems in a clump should be treated to be sure all clump plants are killed. Dispose of cuttings appropriately.

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 PL, since there will be fewer other plant species to hit accidentally and the work should be easier. Use glyphosate formulated for use over water and in a weaker solution (1 to 10% A.I.). It is generally necessary to wet only 25% of the foliage of each plant to kill it. Triclopyr can be used as a foliar spray, too, so check its label for instructions. Wet most of the foliage when using this chemical.

You must obtain a permit from WDNR before applying any chemical over standing water, so when in doubt, call. 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 (list available from the biocontrol program or the WDNR web site). S/he will want to know about your site and control plan, may make helpful suggestions, and will issue your permit.

Chemicals, Tools, and Costs – Chemicals and tools to apply them are often available from local farm cooperative stores and garden shops. They are not inexpensive. Your APM Coordinator may be able to help you locate a supplier near-by, but if not, a business in DeForest, Wisconsin, will ship them (800/362-8049) (WDNR does not endorse any particular business.)

Concentrations discussed above are approximate since requirements are variable for different populations of plants in different places. Follow your label and test your plants for the best amount of active ingredient. Call manufacturers or your APM Coordinator if you have additional questions.