

Purple Loosestrife

(*Lythrum salicaria* L.)

Description: Purple loosestrife (*Lythrum salicaria* L.) is an emergent aquatic plant that usually grows on moist or saturated soils. A mature, well established plant often grows up to 10 feet tall and 5 feet wide. Each plant can contain 30-50 herbaceous stems that arise from a common rootstock. The purple-magenta colored, five to six petalled flowers grow on long spikes. Purple loosestrife seed production depends on plant age, size and vigor. A 4-5 year old plant with 30 stems can reportedly produce an estimated 2,700,000 seeds. Seed maintains viability of over 80 percent for at least 3 years.

Impacts: Purple loosestrife is native to Eurasia and was first discovered in the Puget Sound region in 1929. Impacts on native vegetation have been dramatic. It is a vigorous competitor and can crowd other vegetation including native species. In a short period of time it will completely dominate a site. When purple loosestrife invades irrigation systems, economic losses to agriculture can exceed \$2.6 million annually.

Control Options: Thurston County's Integrated Pest Management emphasizes cultural, biological, and manual control methods to keep pests and vegetation problems low enough to prevent damage. The goal of Thurston County's pesticide use policy is to minimize the use of pesticides by utilizing and providing information about the most effective control options that are available and practical.



► Cultural / Habitat

Purple Loosestrife is now a quarantined species (a plant that is forbidden to be sold or transported) in Washington State. However, it was once sold and intentionally planted as a landscape and garden ornamental. It is still introduced occasionally as a component in wildflower seed mixtures. Review the ingredients of wildflower mixes to prevent accidental introduction, and avoid using those with unidentified seed components entirely. To prevent plants from spreading from known infestations, carefully clean vehicles and boats, boots, clothing, and pets after visiting infested areas.



► Manual / Mechanical

Cutting, mowing or digging purple loosestrife is only partly effective. These methods can prevent seed production, but plants will likely re-sprout. Using this technique may also be difficult due the issue of access to the site in aquatic and wetland areas. Flowers should be carefully clipped and double bagged to prevent spreading seeds to new areas.



► Biological

Biological control agents such as *Galerucella californiensis* and *G. pusilla* have been effective in reducing populations of purple loosestrife. They are both leaf-feeding chrysomelids (beetles) that defoliate and attack the terminal bud area, reducing seed production. The mortality rate to purple loosestrife seedlings is high. Evidence of *Galerucella* ssp. damage are round holes in the leaves. Four to six eggs are laid on the stems or leaves. The larvae feed constantly on the leaf underside, leaving only the thin cuticle layer on the top of the leaf. *Galerucella* was collected and planted at Capitol Lake in Thurston County in 1999.

► Chemical Techniques

Aquatic / Riparian Applications: Purple loosestrife usually grows in wet areas along lakes, streams, and ditches. If there is a chance for your herbicide to get into a water body, the use of an herbicide formulated for aquatic settings is required. **Aquatic herbicides are restricted for use in Washington State to licensed applicators only.** Herbicides that have been shown to be effective in controlling purple loosestrife at aquatic infestation sites include **glyphosate** (Aquamaster™), **imazapyr** (Habitat™) and **triclopyr TEA**. Because of the difficulty in controlling these sites, you may wish to contact a licensed applicator to develop a control plan.



Terrestrial Applications: Products containing the active ingredient **glyphosate** are also effective for controlling purple loosestrife in terrestrial (dry) environments. Several products containing glyphosate have been reviewed and are considered “low in hazard” by Thurston County’s pesticide review process.

Thurston County has observed that most ready-to-use, pre-mixed products do not contain sufficient active ingredients to be as effective as concentrated products that are then mixed with water to create a specific finished concentration. The following instructions are for products containing 41% glyphosate which will be mixed down to a specified dilution rate. Be sure to read your label carefully, and make adjustments to rates accordingly.

Foliar applications of **glyphosate** (ROUNDUP PRO™):

- Using a spot application, spray each plant thoroughly on the stems and leaves, enough to be wet but not dripping. Spot application means the herbicide is applied only to the purple loosestrife plants, and not on the surrounding plants or soil. A 1% to 1.5% glyphosate product (after mixing for use) is necessary to adequately control purple loosestrife. Follow label directions for mixing product to application strength.

Foliar applications of **Triclopyr TEA**:

- Once initial infestations of purple loosestrife have been reduced consider using a selective herbicide to encourage native plants to begin to reclaim the area. Triclopyr is very useful for purple loosestrife control since native grasses and sedges are unaffected. Triclopyr products are rated as “moderate in hazard” by Thurston County’s pesticide review process because broadcast applications of triclopyr at greater than 2 lbs of active ingredient per acre can result in contaminating the food supply for birds and small animals. Since this prescription recommends only spraying individual purple loosestrife plants, the risk to birds and small animals is greatly reduced. The PNW Weed Management Handbook recommends applying triclopyr to purple loosestrife at a 1.5% to 2% solution.

Timing:

Apply to actively growing plants at full to late flowering stage. Seedlings may be effectively treated early in the season after a fall application to mature plants. Flowers should be clipped and bagged carefully to prevent seed spread.

READ AND FOLLOW ALL LABEL DIRECTIONS AND RESTRICTIONS. Obey all label precautions and safety measures. Always use personal protective equipment that includes coveralls, waterproof gloves, shoes plus socks, and protective eyewear. Use of brand names does not connote endorsement and is for reference only; other formulations of the same herbicides may be available under other names. Information provided is current as of the date of the fact sheet. Pesticide product registration is renewed annually and product names and formulations may vary from year to year.

References:

Manitoba Purple Loosestrife Project <http://www.purpleloosestrife.org/index.html>

Minnesota Department of Natural Resources: <http://www.dnr.state.mn.us/invasives/aquaticplants/purpleloosestrife/garden.html>

Written Findings of the Washington State Noxious Weed Control Board: http://www.nwcb.wa.gov/weed_info/Written_findings/Lythrum_salicaria.html

Washington State Department of Ecology: <http://www.ecy.wa.gov/programs/wq/plants/weeds/aqua009.html>

2010 Pacific Northwest Weed Management Handbook, ISBN 978-1-931979-22-1



Thurston County Public Health & Social Services
2000 Lakeridge Drive SW
Olympia WA 98502
Phone: 360-754- 4111
T.D.D. 360-754-2933
www.co.thurston.wa.us

Thurston County Noxious Weed Control
11834 Tilley Road S.
Olympia, WA 9812
Phone: 360-786-5576
T.D.D. 360-754-2933
tcweeds@co.thurston.wa.us