

Herbaceous Weed Control – Invasive Plant Control

Purple Loosestrife – *Lythrum salicaria*

Conservation Practice Job Sheet

VT-315



Purple Loosestrife (*Lythrum salicaria*)

Purple Loosestrife

Purple loosestrife is found in wetlands and can occur along stream and river banks and lake shores. In addition, the plant can be found in ditches and other disturbed wet soil areas. *L. salicaria* grows best in high organic soils, but tolerates a wide range of soils including clay, sand, muck, and silt. Generally, the plant is found in full sun, but it can survive in 50% shade.

Purple loosestrife can spread by root fragmentation or seed. A mature plant can produce 2.7 million seeds annually. *L. salicaria* flourishes in wetland habitats that have been disturbed or degraded from draining, natural drawdown in dry years, bulldozing, siltation, shore manipulation, cattle trampling, or dredging.

Once Purple Loosestrife becomes established in a wetland it displaces endemic vegetation through rapid growth and heavy seed production. Important wildlife food plants such as cattails and pondweed are displaced or shaded out as *L. salicaria* expands across a wetland. The invasion of *L. salicaria* leads to a loss of plant diversity, which also leads to a loss of wildlife diversity.

Description

L. salicaria is a stout, erect perennial herb with a strongly developed taproot. The plant ranges in height from 0.5 to 2.0 m. The four-angled stem can be glabrous to pubescent. The sessile leaves are opposite



Purple Loosestrife Invading

or in whorls, lanceolate to narrowly oblong, with cordate bases. The inflorescence is spike-like, 1-4 dm long. Petals 5-7, usually magenta, but white or light pink flowers are also common. The flowers are trimorphic in regard to the relative lengths of the stamens and style. The fruit is a capsule, with small seeds.

Similar Natives

Winged loosestrife (*Lythrum alatum*) is a rare plant that could be confused for *L. salicaria*. *L. alatum* is usually shorter in stature, being around 40-80 cm (1-2.5 ft.) tall. The leaves of *L. alatum* are alternately arranged, except for the very lowest ones on the plant. The flowers of *L. alatum* are solitary in the upper axils while the flowers of *L. salicaria* are numerous and in a spike-like arrangement.

Control

Several control methods have been attempted with varying degrees of success. First land managers must determine if it is feasible to control Purple Loosestrife or just contain it. Larger populations extending over acres will be difficult if not impossible to completely eradicate. These large populations should be contained at their present position. Preventing the expansion can be accomplished through hand-pulling new plants along the periphery or spraying herbicide on plants extending beyond the main body of the population.

Smaller populations can be controlled through eradication. Populations up to three acres can be cleared with herbicides or hand-pulled, depending upon the size of the work crew and time available. Biological control of Purple Loosestrife is also a viable option that has been successfully implemented.

Biological Control

Biological control is seen as the most viable option for effective long term control of large infestations of Purple Loosestrife. As of 1997, three insect species from Europe have been approved by the U.S. Department of Agriculture for use as biological control agents. These plant eating insects include a root-mining weevil, and two leaf-feeding beetles.

Mechanical Control

Hand-removal is recommended for small populations and isolated stems. Ideally, the plants should be pulled out before they have set seed. The entire rootstock must be pulled out since regeneration from root fragments is possible. Be sure to minimize disturbances to the soil and native vegetative cover. Remove uprooted plants and broken stems from the area since the broken stems can resprout.

Mowing: Mowing is not recommended for Purple Loosestrife because it can further spread by distributing plant stems that can sprout vegetatively. If possible, native plants should be restored to the control area by seeding or planting. This will deter new loosestrife seedling development.

Prescribed Burning

Burning is thought to not be an effective control method because purple loosestrife is typically found in a wet soil condition and the rootstock of the plant is well-protected.

Chemical Control

Where populations are so large or conditions are such that cutting or other non-chemical means of control are impractical, the use of herbicides is an effective alternative. Scientific studies have shown that foliar and cut-stem treatments (for environmentally sensitive areas) have been effective for control of purple loosestrife¹. Multiple treatments per year will be most effective.

Refer to the pesticide label for complete instructions on the use and application of a given herbicide. Some applications, by rule, may only be done by a certified pesticide applicator, and/or might require the applicator

hold a special permit. Private landowners can apply anything purchased at your local garden store with out having a permit so long as it is not near a water body or known public aquifer. You should contact the Vermont Agency of Agriculture Agrichemical Management Section if there are any concerns before applying any pesticides.

¹- Balogh, Greg. "Ecology, distribution, and control of purple loosestrife in northwest Ohio." Annual report from October 1984-September 1985. Cooperative Wildlife Research Unit, Ohio State University.

Disposal

There are a few general rules of thumb that will ensure proper disposal. Be sure the plant is dead before placing in a mulch or compost pile. Either dry it out in the sun, or bag it in a heavy duty black plastic bag. If you have flowers and/or seeds on the plant, put the flowers and seed heads into the bag head first so that there is minimal risk in dispersing seed.

Information and Recommendations compiled from:

- Balogh, Greg. "Ecology, distribution, and control of purple loosestrife in northwest Ohio." Annual report from October 1984-September 1985. Cooperative Wildlife Research Unit, Ohio State University.
- "Invasive Plant Management Guide." Stewardship Subcommittee of the Connecticut Invasive Plant Working Group. http://www.hort.uconn.edu/cipwg/art_pubs/GUIDE/guideframe.htm
- Invasive Plant Atlas of New England (IPANE)
- The Nature Conservancy - Element Stewardship Abstract (and references therein)
- Plant Conservation Alliance (PCA) Alien Plant Working Group

CAUTION: The VT Agency of Agriculture Division of Agricultural Resource Management and Environmental Stewardship, Agrichemical Management Section regulates the sale and use of pesticides in Vermont. Many labels and registrations change from year to year, so applicators will want to be sure they are using a currently, registered product. Contact the Agrichemical Section (802-828-6531) for information on pesticide registration, how to acquire a special permit, lists of currently-licensed pesticide applicators, and other information pertaining to the rules and regulations governing pesticide application in this state.