

PURPLE LOOSESTRIFE Options for control

Purple loosestrife, a class - B noxious weed in Lincoln County, Washington (*Lythrum salicaria*) is a perennial, emergent aquatic plant in the loosestrife family, which reproduces from seed and rootstock. Purple loosestrife is thought to have originated in Europe and Asia, and was introduced to the northeastern U.S. and Canada in the 1800s, for ornamental and medicinal uses. It is still widely sold as an ornamental.

Purple loosestrife has a **square**, woody stem and opposite or whorled leaves. Leaves are lance-shaped, stalkless, and heart-shaped or rounded at the base. Plants are usually covered by a downy pubescence. Loosestrife plants grow from four to ten feet high, depending upon conditions, and produce a showy display of magenta-colored flower spikes throughout much of the summer. Flowers have five to seven petals. Mature plants can have from 30 to 50 stems arising from a single rootstock.

Purple loosestrife adapts readily to natural and disturbed wetlands. As it establishes and expands, it out competes and replaces native grasses, sedges, and other flowering plants that provide a higher quality source of nutrition for wildlife. The highly invasive nature of purple loosestrife allows it to form dense, mono-

culture stands that restrict native wetland plant species, including some federally endangered orchids, and reduce habitat for waterfowl.

Purple loosestrife is capable of invading many wetland types, including freshwater wet meadows, tidal and non-tidal marshes, river and stream banks, pond edges, reservoirs, and ditches.

Purple loosestrife enjoys an extended flowering season, generally from June to September, which allows it to produce vast quantities of seed. The flowers require pollination by insects, for which it supplies an abundant source of nectar. A mature plant may have as many as 30 flowering stems capable of producing an estimated 2.5 million, pepper-size seeds per year.

Purple loosestrife also readily reproduces vegetatively through underground stems at a rate of about one foot per year. Many new stems may emerge vegetatively from a single rootstock of the previous year. "Guaranteed sterile" cultivars of purple loosestrife are actually highly fertile and able to cross freely with purple loosestrife and with other native *Lythrum* species. Therefore, outside of its native range, purple loosestrife of any form should be avoided.



Purple loosestrife seedling.



Each 1-4" long leaf has a smooth edge and heart-shaped base that clasps the stem.



The stems are slightly fuzzy, square and have 4 sides.

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Key identifying traits

- Long, showy, rose-purple **flower spikes**
- **Flowers** are small, numerous & have 5-7 petals.
- Usually associated with **moist/marshy areas**.
- **Leaves** are simple, entire, and opposite or whorled.
- Forms substantial **root wads** with many stems
- Has erect **stems**, often growing 6-10 feet all.
- **Stems** are stiff and 4 sided (square).
- Develops **root rhizomes** and **abundant seeds**
- Has both a **woody tap** root and fibrous root system.



The 1 inch purple loosestrife flower has 5-7 pink petals and yellow-white centers.



The magenta-purple flower are borne on narrow upright spikes, 4-20 inches tall.

Biology and ecology

- A rhizomatous perennial; reproduces by seed, roots and vegetative growth.
- Forms up to **2.5 million pepper-size seeds per plant**: seeds float on water and stick to animals.
- On mature plants, rootstocks are extensive and can send out up to **30 to 50 shoots**.
- Infestations can **impede water flow** and invade irrigation systems.
- **Competes** with cattails and other native marsh plants.



Purple loosestrife adapts readily to natural and disturbed wetlands.

CONTROL MEASURES:

For this and other publications, see our website at: www.co.lincoln.wa.us/weedboard

Prevention:

- Beware of ornamental varieties and contaminated boats and motors. **Early detection** is vital to prevent invasion.

Biological:

- *Galerucella*, a leaf feeding beetle and *Hylobius*, a root-mining weevil, have both shown good success.

Cultural:

- A good competitive vegetative cover helps, although plants can invade healthy native as well as managed introduced plant habitats.

Mechanical:

- Small infestations can be dug, bagged and disposed of taking care not to disperse seeds.

Chemical:

- Rodeo (glyphosate), Garlon 4 or Garlon 3A (triclopyr), are aquatic herbicides approved for controlling purple loosestrife.
- If plants are in bloom, clip/bag flowers prior to spray.
- Special care, permits and licenses may be required if plants are growing in or very near water.
- **Read the label** instructions before applying.



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Often planted as an ornamental.



A monoculture of Purple loosestrife dominates wetland environments.



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A galerucella mating pair.



A picture of leaf damage from the feeding insects.

Biological Control

In 1997, the USDA approved three insects species for use as biological control agents on Purple loosestrife. Two of them, *Galerucella californiensis* and *Galerucella pusilla* They are leaf-eating beetles which seriously affect growth and seed production by feeding on the leaves and new shoot growth of purple loosestrife plants.

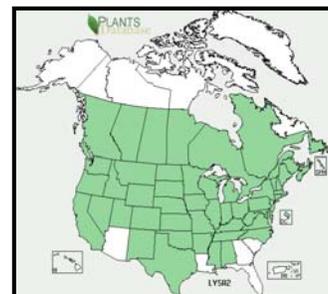
The Winchester Wasteway near Moses Lake is a big success story in Washington. From 1995 to 1998, 40,000 *Galerucella* bugs were released on the 6000 acre infestation. Note the dramatic photo's at right, as evidence of *Galerucella*'s capability.



Purple Loosestrife infestation at Winchester Wasteway in August 1995.



This photo taken in the same spot in August 1998. No more purple flowers!



Lincoln County Noxious Weed Control Board
405 Ross St.
Davenport, WA 99122
509-725-3646

Photos and references courtesy of: Washington State Noxious Weed Control Boards, written findings; University of Pennsylvania; Alien Plant Working Group; Stevens County Noxious Weed Control Board; Biological Control of Invasive Plants of the Eastern U.S.; B. Blossey; U.S. Bureau of Reclamation.