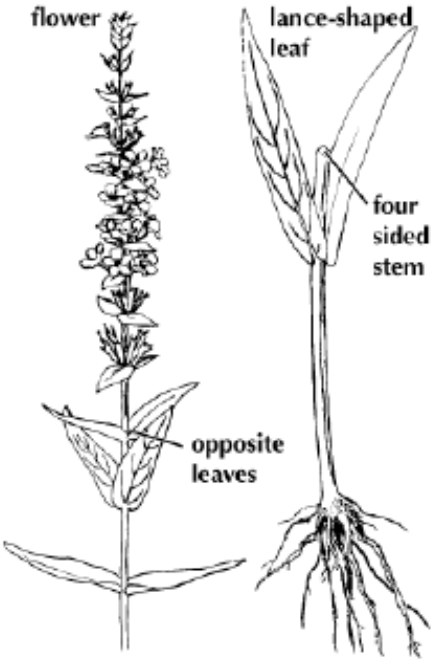
Purple Loosestrife: An Exotic Invasive Wetland Plant

Lythrum salicaria

Description

- Purple Loosestrife is a hardy, aggressive, non-native wetland invader. This herbaceous, ornamental perennial was first documented in the 19th century and it is likely purple Loosestrife was introduced either accidentally in ship ballast water or intentionally as colorful garden ornamental.
- The 2-4 inch lance-shaped leaves are heart-shaped at their base and are arranged in opposite pairs along the stem. Each pair grows at a 90-degree angle to the next pair. (Occasionally leaves are in whorls of three)
- The woody square-shaped stem is distinctly four sided, up to six feet high and is often covered with fine hairs.
- During late summer (July to September) Purple Loosestrife produces vibrant purple flowers on an enlongated spike. The small showy flowers have 5-6 petals.

Purple Loosestrife



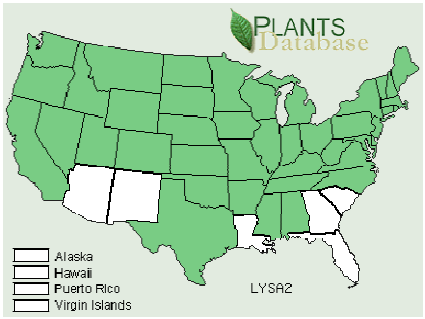
Habitat

Purple Loosestrife has become established in a wide range of habitats including disturbed areas, river banks, lake and pond shores, irrigation ditches and roadsides.

- Purple Loosestrife is distributed statewide and country wide, with the exception of six states.
- Purple Loosestrife can tolerate a variety of soil conditions, including water fluctuations, poor water quality and is often the first species to invade a disturbed site.

Distribution Map

Lythrum salicaria



Reproduction

Purple Loosestrife reproduces in a variety of ways.

- The main method of reproduction for *L. salicaria* is by seed dispersal. Each plant produces one to three million seeds, which have a 60-70% survival rate. Seeds can remain viable in the soil for several years and are easily dispersed by wind, animals, floodwaters and human disturbances.
- Purple Loosestrife can reproduce from adventitious shoots, up to 50 shoots per plant, and rooting of buried stems and cuttings.

Impacts and Threats Posed by Purple Loosestrife

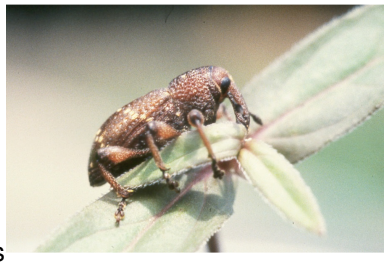
Purple Loosestrife is a highly competitive plant that is capable of rapid growth and spread. Purple Loosestrife displaces native species, reduces biodiversity, degrades wetland habitats, and chokes irrigation channels and waterways

- Once established, Purple Loosestrife may dominate an area to the complete exclusion of other plants.
- Purple Loosestrife can form dense single species stands that do not provide ideal habitat or food for native wildlife, and these native wildlife populations are often forced to relocate or perish, ultimately resulting in a loss of biodiversity.
- As *L. salicaria* spreads rapidly and fills in wetlands, water flow is reduced and the flood retention of the wetland is decreased.
- *L. salicaria* stems can trap sediments, causing the waterbody to become increasingly shallow.

Management Methods

Management methods currently include mechanical removal, herbicides and biological controls.

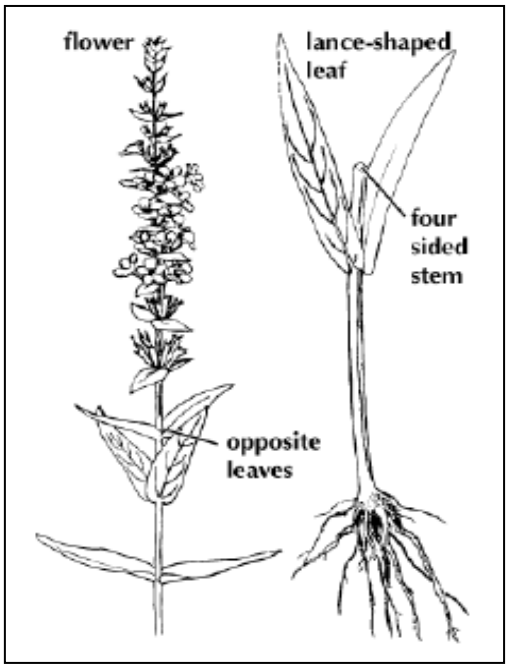
- Pulling and cutting of *L. salicaria* is very time and labor intensive. It is a technique that is best applied to pioneer infestations, otherwise follow up treatment may be necessary due to the reserve of seeds in the soil. Timing is critical because pulling the plant when it is seeding will only further spread the seeds. Mowing fields of *L. salicaria* several times a summer can keep the bio-mass down but this is not an ideal choice for a wild setting and mowing is not species specific.
- Spot treatment of glycophosphate based herbicides (Roundup and Rodeo) have been effective, especially when applied to cut stems, however, permits are required.
- Several biological controls are showing potential in controlling Purple Loosestrife populations. In 1992 the USDA approved several European beetles for the control of *L. salicaria*. Two leaf-eating beetles, *Galerucella calmariensis* and *G. pusilla,* feed on the leaves, buds and stems which prevents Purple Loosestrife from seeding. The root eating weevil, *Hylobius transversovittatus* (photo on right), destroys the roots of *L. salicaria,* resulting in weakness and ultimately, death of the plant.



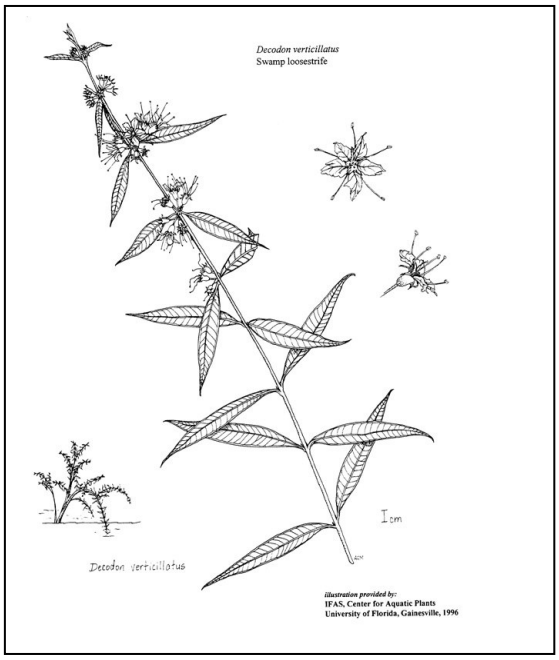
Other Information

- Purple Loosestrife is on the Massachusetts Prohibited Plant List (as of January 1, 2006)
- For information on bio-control: http://www.mass.gov/czm/wrp/projects_pages/loosestrife.htm
- Informational websites:
  http://dnr.metrokc.gov/wlr/waterres/smlakes/weed.htm (Washington State King County)
  www.ProtectYourWaters.net (Aquatic Nuisance Species national web site)
  http://plants.ifas.ufl.edu/decver.html (Center for Aquatic and Invasive Species)
  http://www.nps.gov/plants/alien/fact/lysa1.htm (National Park Service fact sheet)
- In ancient times the Greeks used to believe that hanging garlands of Purple Loosestrife around the necks of their oxen would encourage the oxen to plow in harmony.
- Leaves and flowers of Purple Loosestrife have been used in gargles and wound treatments. In the past, Purple Loosestrife has been used as a hair dye and has been burned to repel insects.
- Purple Loosestrife may be confused with the native Swamp Loosestrife (*Decodon verticillatus*).
  - Swamp Loosestrife has individual flowers located directly on the stem above each leaf pair, rather than on one elongated spike.

Purple Loosestrife compared to native Fireweed and Swamp Loosestrife



Purple Loosestrife



Swamp Loosestrife

References:

1) Literature sources:
http://dnr.metrokc.gov/wlr/waterres/smlakes/loose.htm (WA State King County web site)
http://infoweb.magi.com/~ehaber/factpurp.html (Invasive Exotic Plants of Canada)
http://www.nps.gov/plants/alien/fact/lysa1.htm (National Park Service fact sheet)
http://pi.cdfa.ca.gov/purpleloosestrife/BioControl.htm (California State web site)
2) Photographs were obtained from:
http://dnr.metrokc.gov/wlr/lands/Weeds/lstrife.htm (photo & drawing of *L. salicaria*)
http://pi.cdfa.ca.gov/purpleloosestrife/BioControl.htm (photo of weevil)
http://plants.ifas.ufl.edu/decver.html (line drawing of Swamp Loosestrife)
3) The distribution map was taken from:
http://plants.usda.gov/cgi_bin/plant_profile.cgi?symbol=LYSA2

For more information please contact:

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Or visit the Lakes and Ponds web site at: www.mass.gov/lakesandponds
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