
SUNNYSIDE THYMES

Volume 28, Issue 7

“Helping Others Grow”

July 2019

Space Invaders - Purple Loosestrife

By Kimberle Horvath, SMG Member

Biological Control of Space Invader Purple Loosestrife: A Tale of Two Beetles!

Purple Loosestrife (*Lythrum salicaria*), known for its prolific purple blooms, is a non-native wetlands space invader. It can form clumps of 30-50 stems from a single taproot, and one plant can produce up to 2.5 million seeds per year!

L. salicaria was likely introduced to North America in the early 1800's through shipping ballast, imported wools, and immigrants who used the plants as a medicinal herb.

Without natural enemies to keep *L. salicaria* under control, the herbaceous perennial began negatively impacting wetland ecosystems across the United States and Indiana. Today, it continues to successfully crowd out native wetland species, reduce available nesting material and food sources, and change the natural water chemistry.

One step in controlling the spread of *L. salicaria* was Indiana state law (Indiana Seed Laws IC 15-15-1 and 360 IAC 1-1-6), enacted on July 1, 1996. This law prohibited the sale of all varieties, species, and cultivars of any members of the genus *Lythrum*, including all sterile species.

Following the ban on *L. salicaria*, finding effective methods of controlling the species presented a new problem. Hand pulling, flooding, and burning were too laborious, and the effects of herbicides could not be contained to purple loosestrife.

In 1994 however, the IDNR Division of Entomology and Plant Pathology was working with the Division of Nature Preserves to establish a biological control program. Enter *Galerucella californiensis* and

Galerucella pusilla—two nearly identical leaf-eating beetles whose lifecycle depends on *L. salicaria*.

Galerucella spp larvae feed on the growing tips, moving down the plant and reducing the leaves to skeletons. As adults, the beetles continue to eat the leaves and lay their eggs on the plants, all without causing any harm to native wetland plant species. Though maintaining their populations was challenging, this proved to be the most effective solution.

Through *Galerucella* spp release programs across Northern America, reduction of purple loosestrife invasions continues to be successful. In time, native plants and animals that have been competing with *L. salicaria* can recover with the help of these small, non-native, leaf-eating beetles.

References:

- 2014. Proceedings of the Indiana Academy of Science 123 (1):23-34
- 1998 Indiana Department of Natural Resources: Biological Control of Purple Loosestrife
- U.S Fish and Wildlife Service, <https://usfwsnortheast.wordpress.com/tag/galerucella-beetle/>
- The Bugwood Network <https://www.invasive.org/biocontrol/11PurpleLoosestrife.cfm>
- Missouri Botanical Gardens <https://www.missouribotanicalgarden.org/PlantFinderDetails>
- Wisconsin Natural Resources <https://dnr.wi.gov/wrnmag/2016/06/Beetles.PDF>
- Indiana Summary of Plant Protection Regulations Updated April 2018 <http://www.in.gov/dnr/entomolo>





*Photo by Eric Coombs,
Oregon Dept. of Agriculture,*



*U.S. Fish And Wildlife Service,
Northeast Region*



*Larva on the Purple Loosestrife.
Credit: Katrina Scheiner, USFWS*
