Purple Loosestrife Biocontrol
How to Collect and Move Loosestrife Beetles

Staff Contact: Mike Verhoeven, Aquatic Invasive Species Management Consultant, michael.verhoeven@state.mn.us
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Objectives

This guide is for DNR staff and partners (i.e. local governments, lake associations, garden clubs, etc.) who want to help with the statewide purple loosestrife biological control effort by collecting and moving purple loosestrife beetles.

**** Important! Before you start, contact your local Invasive Species Specialist for a list of potential beetle collection sites. Download the necessary permit here.**

Purple Loosestrife (*Lythrum salicaria, Lythrum virgatum*)

Purple loosestrife is a perennial wetland plant that is non-native to Minnesota and is classified as a Prohibited Invasive Species. It contains a flower spike of pink-purple flowers that bloom in late June to August. Purple loosestrife aggressively invades wetland areas, displaces native plants, and disrupts habitat for native animals. It can also encroach on drier lands such as agricultural fields.

Biological Control

Biological control is the best method to manage medium to large areas of purple loosestrife. There are two species of leaf-eating beetles that are well-established biological control agents in Minnesota, the golden loosestrife beetle *(Galerucella pusilla)* and the black-margined loosestrife beetle *(Galerucella calmariensis)*, shown here. See the DNR purple loosestrife biological control webpage for more information.

Galerucella beetles on a purple loosestrife plant, inset *Galerucella calmariensis.*

Collecting the Beetles

- Either the black-margined loosestrife beetle or the golden loosestrife beetle can be collected.
- The best time of year to collect beetles is in the spring as beetles emerge. This usually occurs around late May when plants are about one to three feet tall.
- Beetles are collected on wetlands that have purple loosestrife plants and populations of *Galerucella* beetles established. Various public wetlands in the metro area have purple loosestrife stands where beetles may be collected. However, beetle abundance at any one site can vary from year to year. Please be sure that any site you go to collect from is safe to access and that it is either on public land or you have permission from the landowner to be on the site.
- Beetles are hand collected by placing a collection bottle under the insects and knocking them into the bottle. Before you knock them in, add sprigs of purple loosestrife to maintain the beetles during transport and to help keep them from escaping the bottle.

Make a collection bottle from a 20 oz. plastic bottle and tape. Put a few sprigs of the purple loosestrife plant in the bottle for the beetles to hold onto. Up to 300 beetles can be kept in each container if the insects are going to be released within 24 hours. **Do not include flowers, seedheads or roots of purple loosestrife in collection bottles. It is illegal to move propagating parts.**

Collection Tips: *Beetles tend to prefer sunny spots over shade. Look for plants with holes in the leaves; if the beetles are not obvious there, check nearby healthy plants. Beetles tend to feed an area hard and then move on to adjacent areas, so move around while searching. During warm, dry days, beetles typically congregate near the tops of the plants on the leaves. On cool, damp days, they may be tucked deep into the leaves and can only be detected by peeling leaves back.*

Releasing the Beetles

Try to release about 1000 beetles per site and release collected beetles within a 24-hour period (preferably the same day). When you arrive at a purple loosestrife infestation, locate a spot that is easily accessible and relatively dry, with fairly abundant purple loosestrife. Release all beetles at one spot, shaking the bottles and plants clean. Make sure all purple loosestrife fragments used during transport are dumped with the beetles on a loosestrife site or thrown away in the trash. Document the collection and release using the EddMapS Biocontrol app. You can find it on the EddMapS Apps website, https://www.eddmaps.org/apps.cfm.

Galerucella beetles released in a local wetland with abundant purple loosestrife.