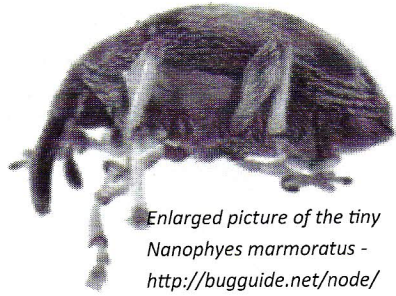


Bugs Wanted!



Enlarged picture of the tiny *Nanophyes marmoratus* - <http://bugguide.net/node/view/881468>

-By Tarki Heath, NYS-FOLA Board of Directors

Little beetles and weevils have been munching their way across the United States in search

mapped the distribution of the invasive plant, taking pictures and documenting its spread. In August, 2014, with assistance from the NYS office of Parks, Recreation and Historic Preservation, and the Cortland-Onondaga Federation of Kettle Lake Associations, Song Lake was permitted through USDA APHIS (United States Department of Agriculture - Animal and Plant Health Inspection Service) to

of their favorite food: *Lythrum salicaria* L., commonly called, purple loosestrife. This is a well-known, harmful, invasive plant in North America. It is difficult to control, but after years of research, there are currently two leaf-eating beetles, *Galerucella pusilla* and *Galerucella californiensis*, one flower and seed head eating weevil, *Nanophyes marmoratus* and the root damaging weevil, *Hylobius transversovittatus*, that have proven to be safe and effective.

Today on Song Lake, a small kettle lake in central New York, there are a modest 700, tiny loosestrife flower weevils (*Nanophyes*) that have been introduced, and are working their way around the lake, to ease the negative impacts of purple loosestrife on the watershed. The lake residents began to notice a dramatic increase in the growth of purple loosestrife over the past three years. Although the Song Lake Property Owners Association implemented best practices for reducing or eradicating the plant, it continued to thrive in the riparian areas and wetlands around the lake. The association

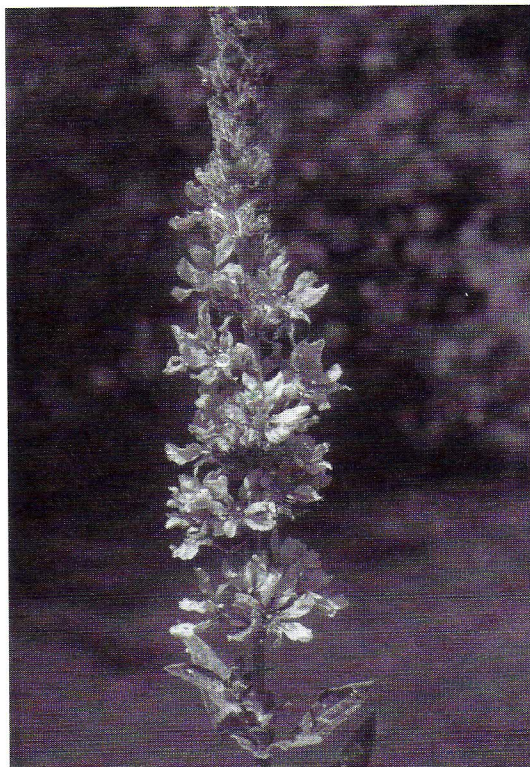


Photo by Eric Coombs, Oregon Department of Agriculture. Used with permission - www.invasive.org.

distribute *Nanophyes*. These flower weevils are expected to provide minimal impact initially, that is why the association is planning a second phase, with the release of the more aggressive loosestrife leaf beetle, *Galerucella*, in the summer of 2015. Although purple loosestrife is an invasive non-native in North America, with no natural predator, it is a native plant in many countries around the world and there are over 100 insects that do feed on the plant. However, as the plant traveled across North America - planted by gardeners and beekeepers going back to early 1800's, transported in ship ballasts and later assisted in its spread with the development of roads and

ditches - life for this unthreatened plant was good. The spread of purple loosestrife was most notable when it aggressively moved into the Saint Lawrence River floodplain in the 1930's, finding its way to shallow waters and marshes throughout North East and North Central America. In these wetlands, the plant created mass communities, de-

stroying the natural diversity and negatively impacting wildlife and critical wetland functions.

Attempts to control the plant by digging, mowing and the use of herbicides failed to stop the invasion. The search for a biological agent for use in North America began in Europe around 1987, and after rigorous testing, the first beetles were approved for release in the United States in 1992 and 1994.

Each of these insects has proven to be host-specific (impacting only purple loosestrife), and their success and safe use has been well documented over the years. In New York State, the Montezuma Wildlife Refuge remains an impressive example of bio-control success on purple loosestrife. As stated on their resource management page,

“Numerous invasive species are found at Montezuma. Purple loosestrife is the invasive species that has had the greatest impact on the quality of habitats available at Montezuma. Current management of purple loosestrife primarily involves the use of biological control agents, weevils and beetles that are host-specific (feed and live exclusively on purple loosestrife). The goal of this biological control program is to establish the competitive balance between native plant species and purple loosestrife.”

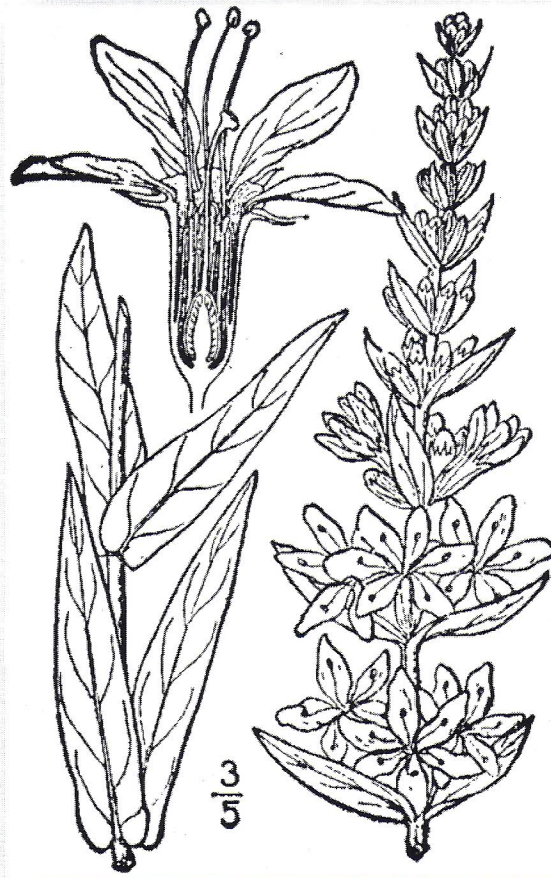
Purple loosestrife can be identified at any time of year by its ridged, square stem. From late June to late September, the plant puts forth lovely pinkish to purple flowers that cluster tightly together on a long spike. A single, mature

plant can produce as many as 30 stems generating 2.5 million seeds. The plant propagates by seeds, roots and stem segments. The smooth leaves grow oppositely and attach directly to the stem.

Historically, it's easy to see why gardeners liked this plant. In addition to its prolific growth and beauty, purple loose-

strife had been used as a medicinal plant. Although a discussion about the specific ecological impacts of purple loosestrife continues, the consensus from botanists, wildlife managers, and anglers confirm that purple loosestrife causes drastic changes to the ecosystem, making some areas inhospitable to native flora and fauna.

Other kettle lakes in the C-OFOKLA coalition plan to replicate the efforts of Song Lake, but it's not enough to depend on controlling an invasive species after-the-fact. All of these lakes are doing what they can now, to prevent the introduction of new invasive species - through extensive education regarding boat washing and other best management practices - while continuing to work to control the invasive species already present.



USDA NRCS. Wetland flora: Field office illustrated guide to plant species. USDA Natural Resources Conservation Service. Provided by NRCS National Wetland Team, Fort Worth, TX.

Good sources for learning more about Purple Loosestrife and their biological controls can be found at: <http://epolicypace.blogs.pace.edu/2014/05/16/the-double-life-of-purple-loosestrife/>, http://www.sprucecreekassociation.org/Beetle_rearing_protocol.pdf, and www.oregon.gov/ODA/programs/Weeds/Pages/BiologicalControl.aspx, and www.seagrant.umn.edu/purpleloosestrife.