Purple Loosestrife Update 2017:

Purple Loosestrife the invasive plant imported as an ornamental garden plant has been found throughout the Middle and Big McKenzie Lakes and was discovered near the culvert on Section Line Rd close to the entrance to Lower McKenzie Lake last year. Eradicating the plant has been an on-going issue for the McKenzie Lakes Association. Treatments have consisted of pulling the plant, cutting the flowering heads and spraying with an approved herbicide or raising and dispersing the Purple Loosestrife leaf-beetles (*Galerucella calmariensis* and *G. pusilli)See following article*. None of these methods will completely eradicate the PL plants but keep them in check if diligently applied. The preferred method would be biological control using the beetles as their natural predator. Minnesota has banned herbicide use and has gone exclusively to the beetles to control the plant.

The MLA has been working hard on controlling the plant and has been using the beetles for years. This year two groups of volunteers John Lofswold and Jane Willette and Julie and Paul Kollitz raised beetles in their yards and recently placed them in the McKenzie Creek between Big and Middle McKenzie's Lakes. Helping with the beetle dispersion was Lisa Kiener and JoAnne Lange. McKenzie Creek has the largest concentration of PL on the lakes and has been the focus of beetle placement over the years. During the recent placement of the beetles it was observed that there has been a profound change in the PL population in the Creek. Usually at this time of the year the dominate plant observed is PL. That is not the case this year. When PL plants were found they were stunted with their leaves full of holes indicating beetle activity. Other areas where beetles have been placed in the lakes also show the same results.

Complete eradication will never occur but this is a good indication that we can control it without using other means such as herbicides. It is also important for lakeshore owners to report any suspicious plants to their Lake AIS coordinator for early treatment. Remember a single PL plant can produce up to a million seeds which can lie dormant for years. If you see a PL it is best to cut the flowering head, place it in a plastic bag and put in the garbage. Do not compose or burn the flowering heads as these methods will not kill the seeds.

Galerucella calmariensis and G. pusilla

The two leaf-beetles *Galerucella calmariensis* and *G. pusilla* share similar ecology and life history. Adults overwinter in the leaf litter and emerge in early spring synchronized with host plant phenology. Adults feed on young plant tissue causing a characteristic "shothole" defoliation pattern Females lay eggs in batches of two to ten on leaves and stems from May to July. First instar larvae feed concealed within leaf or flower buds; later instars feed openly on all aboveground plant parts. Larval feeding strips the photosynthetic tissue off individual leaves creating a "window-pane" effect by leaving the upper epidermis intact. Mature larvae pupate in the litter beneath the host plant. At high densities (greater than 2-3 larvae per centimeter of shoot), entire purple loosestrife populations can be defoliated. Adults are mobile and possess good host finding abilities. They spread several miles from their original release sites in a few years. Peak dispersal of overwintered beetles occurs during the first few weeks of spring. New generation beetles have dispersal flights shortly after emergence and are able to locate patches of host plants as far away as one kilometer. (*Source: MN Department of Natural Resource Website).*