

THE LOOSESTRIFE BEETLE PROJECT

by Amy Ivy, Cornell Cooperative Extension

Purple loosestrife is one of the worst invasive plants in our area. It takes over fields and wetlands, crowding out all other vegetation. It is a poor food source for wildlife unlike the plants it replaces. It is shocking to see how much this non-native invasive plant has spread just since last year. Hand-pulling and mowing only give temporary relief and herbicide options are limited, so researchers have been trying to find better ways to slow down the spread of this pest.

Dr. Bernd Blossey, professor in the Natural Resources Department at Cornell, has been researching and raising various insects that feed only on loosestrife. The leaf feeding galerucella beetle (*Galerucella californiensis*) shows particular promise in the effort to control loosestrife.

This year, four Master Gardeners from Essex County, Walt Baumann, Audrey Hyson, Lynne Johnson and Mary Ann Walls, decided to raise some of these beetles at home to release later at chosen sites.

They began in mid-May by digging some purple loosestrife plants from a field and potting each into 5-gallon buckets with drainage holes. They each took 5 plants home and set them in children's wading pools filled with 4 inches of water so the plants would have the required moisture. When the plants produced about 10 inches of new growth by May 30th, Dr. Blossey shipped us about 200 adult galerucella beetles. (The cold spring weather delayed the growth of the loosestrife. In a "normal" year we would have been able to start a couple of weeks earlier.) Lynne sewed 5 foot long sleeves of no-see-um netting to fit over the rim of each pot and enclose the plants. About 20 beetles were introduced to each sleeve, which was then fastened at the top to keep the beetles from leaving their loosestrife plant. The beetles nearly devoured the plants in a few weeks, mated, and laid eggs on the leaves and stems. The larvae, tiny orange worm-like grubs, continued feeding on the remaining leaves and by early July all the plants were defoliated. They pupated in the soil and emerged shortly afterwards as adult beetles. This new generation of adults was what we were looking for. The 20 beetles per plant we started with ended up as 50-100 adults to release.

As the beetles developed, we began working with Dr. Melinda Wu, a professor with the Center for Earth and Environmental Science at SUNY Plattsburgh with a 200-acre test site of purple loosestrife on Cumberland Head. The Master Gardeners released their new generation of beetles on July 16 at a designated section of this Cumberland Head site. Now we'll wait while the beetles overwinter, then we'll collect them in the spring to release in Wadhams and in Upper Jay where there are large loosestrife stands.

Dr. Wu released her adult beetles on Cumberland Head in mid-June, so hers were almost a month ahead of ours. Her second generation appeared a couple of weeks before ours and there is a chance these beetles will produce a third generation by late August. If so, the Master Gardeners will help her gather these adults to release at the two Essex County sites along with some in Clinton County.

Permission to release a new species in the Adirondack Park is no simple matter, but the Adirondack Park Agency (APA) created a special permit process to allow the release of galerucella on specified sites within the park. By working cooperatively with Dr. Wu, we were able to receive a permit to conduct these releases.

Overall this is quite a group effort. First we had help from Dr. Blossey at Cornell, then from Dr. Wu at SUNY Plattsburgh, the APA, the NYS Department of Environmental Conservation, the Adirondack Nature Conservancy, and finally from the Boquet and Au Sable River Associations. Cooperation is a wonderful thing!

For more information, visit the following websites:

Dr. Melinda Wu: <http://faculty.plattsburgh.edu/meiyin.wu>

Dr. Bernd Blossey: <http://www.invasiveplants.net>

The galerucella beetle: <http://www.invasiveplants.net/galeruce.htm>
