

Planting bugs in the system

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MassAudubon joins movement to fight invasive greenery on its own turf

By David Rattigan, Globe Correspondent | July 12, 2007

Lou Wagner walked into a meadow owned by the Massachusetts Audubon Society on the Beverly-Wenham line last week and opened a paper tub that looked as if it might have contained takeout fried chicken.

But the 5,000 beetles inside weren't there to serve as dinner. They were the diners at the 3 1/2-acre Endicott Wildlife Sanctuary.

The beetles are natives of Europe and Asia, which is also the point of origin for purple loosestrife. They were let loose to feed on the intrusive plant species that has dominated the meadow for the past several years.

MassAudubon is the latest to join a collaborative biocontrol program to curb the overgrowth of purple loosestrife by using the beetle species *Galerucella*.

Although some may appreciate the purple loosestrife's beauty, environmentalists and others have concerns about the plant's voracious appetite and ability to win out over native species. Some call it "the purple plague." Once purple loosestrife moves into a wetlands area, biologists explain, a freshwater pond or marsh that once offered balanced biodiversity -- with many species acting as a food source for another -- becomes a monoculture. As a result, the habitat becomes a poor one for both plants and wildlife.

"It takes over wetlands, essentially, and excludes native plants, and one of the problems is that nothing eats it," said Wagner, a regional scientist for MassAudubon covering Greater Boston and the North Shore.

"We had to bring in beetles from the other side of the world because native insects and native animals don't eat it."

The project was launched in conjunction with the state's Office of Coastal Zone Management's Wetlands Restoration Program, which initiated a pilot purple loosestrife biocontrol project in 2000.

By the end of this year, the office will have provided expertise for similar projects at 24 sites, 13 of which were added in the past two years. Seven were initiated this year.

The method of using beetles to stem loosestrife has also been employed successfully by the National Park Service since the late 1990s, including at the Parker River National Wildlife Refuge on Plum Island

in Newburyport. The programs are modeled after a pilot program started at Cornell University in the mid-1990s.

"The interest has certainly grown, both because of the recognition of how big a problem purple loosestrife is, but also because we have some cases where it's been effective in controlling purple loosestrife and allowing native species to be able to rebound in those areas," said Beth Suedmeyer, who coordinates the program for the Office of Coastal Zone Management. And other landowners have worked with consultants on similar purple loosestrife biocontrol projects, she said.

"There were preliminary concerns that people had about whether the beetles would really be specific to purple loosestrife," she said. "After 10 years of doing releases in this state, we haven't had detrimental effects to any other plant species."

The goal is, over three years, to establish a population of beetles to feed on the purple loosestrife. The beetles essentially only eat that plant, though they also eat a species that is considered a "cousin."

"The last thing you would want is to release something that is then going to be feeding nonspecifically on other plants," Suedmeyer said.

Based on the results from previous programs, the beetles won't completely eradicate the plant but will cut back its presence.

"Every time the population of purple loosestrife builds up, the population of beetles will build up," said Wagner, who will monitor the Beverly-Wenham site.

Kathy Leahy, North Shore director for MassAudubon, said she's confident that with purple loosestrife under control, the meadow will support a greater biodiversity. The property was donated to MassAudubon several years ago.

"For years and years and years, the woman who owned it mowed it once or twice a year, so when it was given to us and we started surveying it, it had 115 species of plants and only four were non native," said Leahy, who theorizes that the mowing kept the loosestrife from overwhelming the site.

The beetles are likely to also move elsewhere to find new loosestrife. The program has been run successfully at Beverly's Waring School since 2001, about a mile from the Audubon site, and a small number of beetles from that project have been found at both the Audubon-owned meadow and the nearby Glen Urquhart School, also in Beverly.

The Glen Urquhart School is initiating a project as well. Science classes are raising the beetles to be released on purple loosestrife next year both on that campus and at MassAudubon's meadow.

Jen Mallette, a seventh-grade science teacher and science curriculum coordinator at the school, observed the beetle release.

Seventh-graders at the school study biodiversity and ecosystems, which makes the project a good fit for

the curriculum, Mallette said.

"It's that much more meaningful. Kids like to know they're doing something that's real." ■

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