



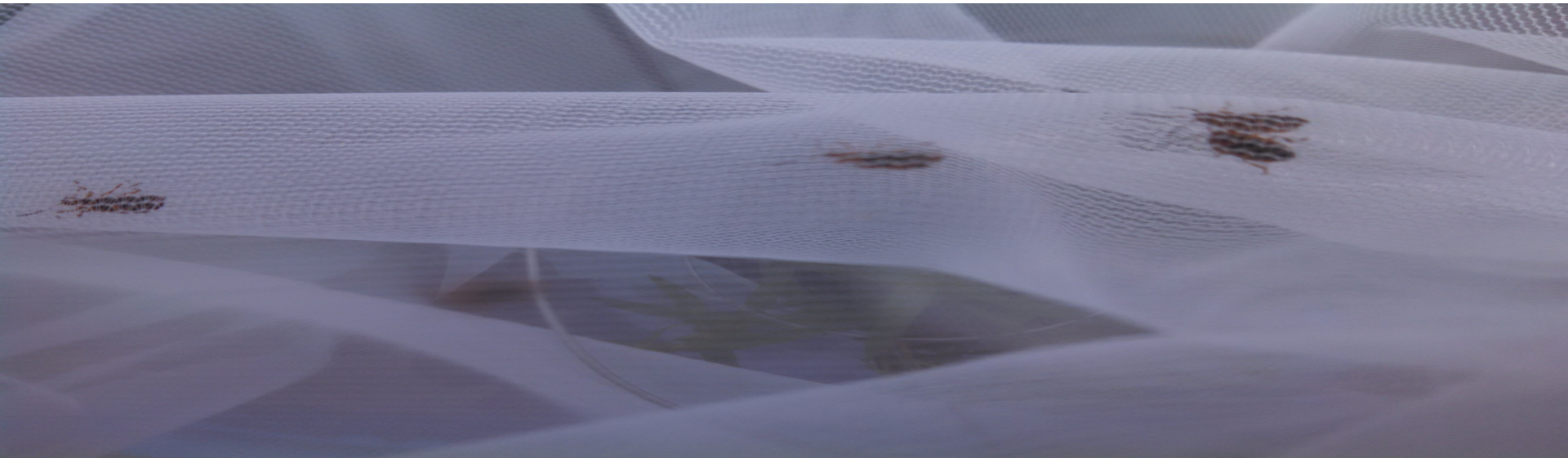
Beetle rearing in Chelmsford

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Generating Interest and Identifying Volunteers

- Coordinated with Conservation Commission and Land Management Committee prior to signing on to the project
- Once participation was confirmed, worked with Department of Public Works, Facilities, Schools, and Boy/Girl Scout Troops to identify location and seek volunteers/partners



Getting Started

- Volunteers quickly vanished
- Audubon/Amber provided excellent support... wouldn't have been able to complete the project without her



School Participation

- Best location for project was Parker Middle School
- Worked with Principal, Assistant Principal, and Seventh Grade Science Teachers to get approval and see if there was interest and opportunity to partner and include the students in the project
- School was very supportive, but it was difficult to get the students involved; project didn't match school schedule



Education

- In addition to rearing the beetles, there was an additional goal of broadly educating students and the public
- Conservation Commission goal of combating invasives and educating the community



ECOLOGY

Parker students battling invasive species

By Molly Loughman
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Students have been given the tools to breed and release a beetle population to combat an exotic plant that invades wetlands.

Seventh-grade students at Parker Middle School are working with the Conservation Commission to acquire invasive and non-native Purple Loosestrife in order to breed its natural enemy, Galerucella leaf beetles. Fueled by the need to breed, the beetles will then be released mainly in the Assabet, Sudbury, and Concord river watersheds, with few to be placed in to-be-determined areas in Chelmsford.

"[Purple Loosestrife] is everywhere. These beetles are the biological control; they're the natural predator of the plant in its native environment, so bringing them here, we're not using chemicals. Wetlands are a very sensitive environment," said Chelmsford Conservation Agent Alison LeFlore, who applied for a grant earlier this year to help fund the project.

"I reached out to the school to see if we could work together to get a new generation of people interested in knowing what's going on... It's kind of seeing the real-life application of what they have been studying in their science classes."

Mass Audubon is partnering with the Cooperative Invasive Species Management Area (CISMA), which seeks to manage and control invasive species in the Sudbury, Assabet, and Concord (SuAsCo) communities. Together, Mass Audubon and CISMA provided a \$7,000 grant toward Chelmsford's effort in tackling the spreading ecological crisis.

"We're going to use it as an opportunity for all the classes to get out as much as they can... and be apart of it as much as possible," said Principal Jeffrey Parks, noting this is the first time the school has worked with the Conservation Commission on a project of this nature.

To breed a sufficient

amount of beetles, the grant requires at least 50 pots of Purple Loosestrife. After being dug up and replanted in pots, the 55 Purple Loosestrife plants, located behind Parker Middle School, will be eaten by the Galerucella beetles as they breed. The potted Purple Loosestrife, in tomato cages, are wrapped in white nets to prevent beetles, over 700 in total, from escaping.

For the next few weeks, LeFlore and students will take turns regularly inspecting the outside of nets to keep beetles from escaping, ensuring adequate water and tracking beetles' life cycles.

The Galerucella beetles arrives at their new home behind Parker Middle School on Friday, the same day seventh-graders began studying arthropods

and beetle examination. Helping LeFlore spearhead the endeavor at the middle school are seventh-grade science teachers Peter Bruyn and Barbara Mayotte.

"Insects are a big part of the arthropod phylum. We'll be able to watch [the beetles' life cycle] and connect that to the town, which is going to be great because they can kind of see how it all interacts within the community," said Bruyn, explaining the Purple Loosestrife was inadvertently introduced by the nursery industry for its aesthetically pleasing appearance. "It had no natural predator here and it's just taken off and taking over areas, mostly wetlands, but this bug is from its homeland and it does eat the Purple Loosestrife, so we are promoting it."

Native to Europe, Asia, northwest Africa, and southeastern Australia, the Purple Loosestrife (*Lythrum salicaria*) is considered an aggressive invader of North American wetlands, lake and rivers. It can become the dominant vegetation, forming mono specific stands that critically diminish biodiversity and degrade habitat quality. The wetland invader grows vibrant purple flowers on elongated spikes between July and September.

The hazardous threats of the Purple Loosestrife, which affects both coastal and inland regions, is its ability to reduce food and shelter for wildlife and other species. Despite its radiant pink beauty, the dense stands of loosestrife also impair recreational use of wetlands and rivers, impede water flow in drainage ditches and invade right-of-ways, causing costly management efforts, according to the Association of Massachusetts Wetland Scientists (AMWS).

Ways of taming the invasive plant have been traditionally carried out through water level management, burning, herbicides, direct digging and cutting, all of which have proven extremely hard and nearly impractical. An alternative and natural approach is the biological control of the Purple Loosestrife by introducing its natural predators, the Galerucella leaf beetles.

Used throughout the country for over two decades to control Purple Loosestrife, the Galerucella beetle feeds on bud, leaf and stem tissue, leaving behind defoliation and prevention of flowering, seeding and production. Recent U.S. findings reveal the Galerucella can have a dramatic impact on Purple Loosestrife infestations in as little as three years. Recently, LeFlore retrieved the Galerucella beetles from New Jersey's Department of Agriculture/Phillip Alampi Beneficial Insect Laboratory.

"[Purple Loosestrife] is on the invasive species list, so it's illegal to move it or sell it... It's not something people should be trying to grow," said LeFlore, noting the Galerucellas will be released in late July. "It takes 3,000 to 5,000 beetles to combat the Purple Loosestrife in over an acre of land... We're not talking about eradication, we're talking about control."

This being the beetle project's trial year in town, LeFlore hopes to acquire the grant again next year to continue to address the invasive plant issue.



Parker Middle School Principal Jeffrey Parks accompanies seventh-grade science teacher Peter Bruyn and his students for their first observation of the invasive Purple Loosestrife and its natural enemy, Galerucella leaf beetles. COURTESY PHOTO

Publicity

- School Principal worked with the local Newspaper to have the project featured

Lessons Learned

- Volunteers are great.... Until they aren't
- Including students requires structured activities at a specified time – there is no flexibility
- Next Year:
 - Hire a coordinator!!
 - Start early to see if there's a way to work with Science Club or another group of students (Boy/Girl Scouts, Nature Club, Homeschoolers, etc.) with more flexibility
- Experience is the best teacher!



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Questions? Discussion...



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