SLELO PRISM

St. Lawrence Eastern Lake Ontario Partnership for Regional Invasive Species Management

Teaming Up to Stop the Spread of Invasive Species

Tench Tensions

By: Paul Hetzler, CCE St. Lawrence County

You wouldn't think minnows, which seem like benign 1:200 scale models of real fish, would garner complaints. How much trouble can a minnow cause?

Potentially a lot if it's real big and has an enormous tribe. It may be a card-carrying member of the minnow family, but the invasive tench (*Tinca tinca*) can grow to 18 inches long and weigh as much as three pounds. In addition, it has a voracious appetite and will literally eat any organic matter. As for numbers, experts disagree, but at minimum a female will lay around 200,000 eggs a year, possibly as many as 900,000.

Tench are native to most of Europe, including the British Isles and Nordic countries, and to parts of southwestern Asia as well, but are now present on every continent save Antarctica. Some invasive species need to stow away in pallet wood to get here, but tench were intentionally brought in. As early as 1883, the United States Bureau of Fisheries started shipping them here as a fish farm species.

Experienced anglers will probably find it easier to identify this invader, which when small can look like a native minnow species. With a deep but thin body, mature tench could be mistaken for a panfish such as rock bass. From above they typically look green, ranging from olive to very dark; this transitions to gold on the sides and belly. They have dark colored rounded fins, rather small red-orange eyes, and tiny scales embedded in an unusually thick film of mucus. For those who don't want to evaluate mucus layers, look for two small barbell's or 'whiskers' one on either side of the upper jaw.

Tench. Photo Credit: The Fishing & Hunting Channel, www.fishingandhuntingtv.com

They are now found in 38 states, including New York, which has recently identified tench in the Great Chazy River (2008) and Lake Champlain (2002). In Canada they are in British Columbia and also Quebec, where a new hybrid escaped from an unlicensed fish farm in 1986 into the Richelieu River and threatening the St. Lawrence and Great Lakes. To date we know it has reached Montreal, and may have traveled farther. It is the Quebec hybrid strain which currently threatens the Great Lakes and the upstream reaches of the St. Lawrence.

If tench are tasty and we farm-raise them in ponds, what's the problem? One issue is that tench are tolerant to a fault. Except for whitewater conditions and marshes, they're happy whether the waterbody is salt or fresh, flowing or static, clean or polluted, tropical or frigid, oxygenated or anoxic, and get this wet or dry (evidently they can sur-vive in mud for several months exact limit un-known—until a dry spell ends). And although they prefer snails and mollusks, tench will eat whatever, including rotting vegetation. They make carp and suckers look persnickety. Being laid-back about what you eat and where you sleep is not necessarily a problem. Bad habits are another matter. Fact: poor table manners may lead to reduced water qual-ity.

Tench. Photo Credit: Mike Guerin, TheJump.Net, Bugwood.org

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New York State Hemlock Initiative: Summer 2017 update

By: Carri Marschner NYS Hemlock Initiative, Cornell University

The NYS Hemlock Initiative (NYS HI) mission is to coordinate the efforts of NYS landowners, state and federal agencies, government officials, and concerned citizens to protect New York's hemlock trees. We integrate research, management, and outreach to conserve New York's hemlocks in the face of multiple threats, particularly the hemlock woolly adelgid (HWA), an invasive insect. This winter was milder than the last few, and a much higher percentage of HWA successfully overwintered and laid eggs. Those eggs have hatched and become adults, which are now laying their own eggs. All of this suggests much higher populations of HWA entering the winter of 2017-2018. ***This year, early detection efforts in areas near the Tug Hill and in the Adirondacks will be more important than ever.***

Biocontrol Program

The New York State Department of Environmental Conservation recently funded the creation of an HWA biocontrol rearing facility at Cornell University. The Hemlock Initiative has grown in the past few months; we now have staff focused on rearing HWA predators and locating suitable sites for their release. The lab facility is being constructed, and we have begun to work with *Leucopis spp*., a.k.a. silver flies. We were able to release over 2500 silver flies this spring, and are gearing up for establishment of our *Laricobius nigrinus* colony in the lab this fall, in hopes of releasing the first of them in the fall of 2018.

Hemlock Prioritization Projects

In order to conserve New York's hemlocks, two basic questions need to be answered: 1) Where are hemlocks growing in New York, and 2) Which hemlocks are providing the most vital ecological and cultural services? *New York has more hem-locks than any other Eastern US state, and it is our third most common tree species.* In order to respond effectively to hemlock losses, we need to pick our battles.

The Hemlock Initiative has been working with individual invasive species partnerships (PRISMs), and with decision-makers at the state level to develop conservation plans for hemlocks in New York. Each region is taking the approach best suited to its unique situations, while the state develops a comprehensive plan.

Mark Whitmore & Hilary Moser working in the field. Photo Credit : Carri Marschner, Cornell University

Prioritization Projects are aiming to answer the following questions:

- Are the hemlocks part of a rare ecosystem?
- Are they part of an important cultural resource like a beloved state park or historic location?
- Are hemlocks helping maintain an important aquatic resource through water regulation, shading/cooling, or buffering from runoff/erosion?
- Is this hemlock stand healthy, with minimal stressors, and located where it is likely to survive for the next century?
- Where are these hemlocks in relation to HWA right now? Would they provide a pathway to a critical area if infested?

Citizen Science Projects

The NYS Hemlock Initiative is actively seeking volunteers for the following projects.

Hemlock and HWA surveys: Help us find where our valuable hemlock resources are, and help keep track of HWA in New York. Reporting is simple through iMapInvasive's mobile app, or by communicating with the NYS HI.

HWA phenology: In order to use biocontrol insects effectively, they must be released at just the right point in HWA's life cycle. Because New York is such a big state with dramatic elevation gradients, HWA matures at various times at different locations. Help us understand the timing of HWA's development across NYS by watching for fall and spring life cycle changes in the insect. This requires initial training, and visits to the same HWA population weekly or semi-weekly during key spring/fall windows.

Field insectary establishment and monitoring: We are seeking landowners who have HWA-infested hemlock hedges and are willing to work with us to rear HWA predators. We also need volunteers to help monitor such hedges once they are established.

Food collection for the biocontrol lab: Rearing HWA predators means we need HWA to feed our little critters. Help us locate dense HWA populations where we can collect a few infested branches to take back to the lab for predator food.

Biocontrol monitoring: New York has an increasing number of HWA predator-release sites, and we need to know if our bugs are establishing populations near those sites. Getting to all those sites during the proper window to survey for the released insects is difficult. Help us track the success of biocontrol efforts by looking for biocontrol insects in the spring and fall.

If you would like to get involved in any of these projects please contact: Carri Marschner (360) 915-4778; cam369@cornell.edu

Partner Spotlight

A Collaborative Approach to Ecological Restoration and Conservation

By Patricia Shulenburg, GLRI Dune Restoration Project Coordinator

Ecosystem restoration requires a partnership approach among stakeholder organizations. The NYS Office of Parks, Recreation and Historic Preservation (OPRHP) is fortunate to have so many collaborators on the Great Lakes Restoration Initiative **Dune** and **Wetland Restoration Project** at Sandy Island Beach State Park. Now in the second year of our $150,000 EPA-funded two-year grant award, key elements of the project include building a new dune walkover, monitoring and protecting the federally endangered piping plover, education and outreach, revegetating the dunes, and invasive species monitoring and management.

SLELO PRISM is an important partner in this ecosystem restoration project. SLELO has hosted iMapInvasive trainings for seasonal staff, provided resources in phragmites management, and advertised our events, including the Salmon River invasive species paddle tour, and dunegrass transplanting workshops.

A priority conservation area at Sandy Island Beach State Park includes the bird sanctuary, remotely located at "Boater's Beach." This area is home to protected shorebirds: piping plovers, common terns, black terns, and other federally endangered and threatened species; hairy-necked tiger beetles, dune willow, and Champlain beachgrass. Invasive species outcompete these protected native plants and wildlife and threaten the ecosystem of this Important Bird Area. The priority management species in the bird sanctuary area is the common reed (*Phragmites australis*), for which integrated pest management approach using a variety of chemical and mechanical techniques is being used. Chemical management techniques include the use of glyphosate, a broad-spectrum systematic herbicide, applied by hand swiping, stem injection, and/or cut-stem treatment. In addition, hand cutting, flooding, and removing dead growth to promote native plant competition are currently being developed into a long term phragmites management plan. The 2017 seasonal crew is also actively surveying and managing early detection and rapid response species in the dunes and wetland areas including small infestations of European frogbit, yellow flag iris, and small patches of Amur honeysuckle and oriental bittersweet. Although pale-swallowwort is not currently found at Sandy Island Beach State Park, this plant is present at other dune sites, and staff are actively monitoring for this species among others.

The project site is heavily visited and is an active dredge material placement site. Due to the human influence on this ecosystem, long-term invasive species monitoring and management is an important component of land management at this state park, and collaboration with SLELO PRISM and members of the Eastern Lake Ontario Dune Coalition is imperative to maintaining ecosystem health for both wildlife and our community.

OPRHP has also partnered with SUNY-ESF, Onondaga Audubon, Audubon New York, New York State Department of Environmental Conservation, U.S. Fish and Wildlife Service, and The Student Conservation Association to promote the recovery of the federally endangered Great Lakes piping plovers. Our partnership has so far secured over $51,000 in funding from sources including the Great Lakes Research Consortium (GLRC) awards and Great Lakes Restoration Initiative (GLRI) for 2018 projects. The GLRC funding supports academic research on piping plover behavior, predator monitoring, and habitat selection. These findings will inform habitat management decisions at the bird sanctuary located at Sandy Island Beach State Park.

Thank you to the 2016 and 2017 piping plover and dune restoration stewardship crew for an incredible field season not only for your conservation work but for protecting the dunes and wetlands system for both wildlife and recreational visitors for years to come!

If you are interested in volunteer, partnership, research opportunities or want to learn more about this project please contact Patricia Shulenburg, patricia.shulenburg@parks.ny.gov for more information.

2017 Piping Plover Stewardship Training, Sandy Island Beach State Park. Photo Credit: Patricia Shulenburg, OPRHP

Early Detection in SLELO PRISM Highly Probable Areas

By: Bryna Daykin and Alicia Wood, the 2017 SLELO PRISM ED team

Alicia Wood and Bryna Daykin, our 2017 SLELO PRISM Early Detection Team, are hard at work searching for invasive species in the St. Lawrence Eastern Lake Ontario region. Within the SLELO region there are 24 Priority Conservation Areas, 12 of which will be surveyed this summer by the Early Detection (ED)Team. These areas are known as highly probable areas (HPAs), based on high human traffic. Humans can move invasive species on their shoes, cars, and gear.

The team is searching for both "Prevention List" species and "Target Management" species. "Target Management" species are currently found within the PRISM, and there are efforts underway to contain and manage their spread within the region. On the other hand, Prevention List species are near our region but have yet to be detected within our PRISM.

There are both aquatic and terrestrial HPAs in which the ED team will survey. To strengthen survey efforts at aquatic sites, the team utilizes the rake toss method in which a double-sided rake is tossed in the water and the vegetation collected is observed.

The primary purpose of the ED team is to detect invasive species early before their populations become established and too large to contain or eradicate; as invasive species reduce biodiversity, causing ecological and economic harm to the environment.

You can get involved by joining our Invasive Species Volunteer Surveillance Network (VSN). To join contact Megan Pistolese, 315-387-3600; megan.pistolese@tnc.org.

The 2017 ED team,
Alicia Wood , front, and Bryna Daykin, back.
Photo Credit: Zach Bengtsson.

SLELO PRISM eDNA Project Update:

By: Zach Bengtsson, eDNA Project Coordinator

Much like forensic scientists, we can use the DNA in water to track down invasive culprits within ecosystems. Organisms in freshwater environments constantly shed genetic information into the water via skin, mucus, feces, gametes, and more. Extracting environmental DNA (eDNA) from water samples and genetic testing, allows us to detect the presence of invasive species before they establish large populations. Recent declines in cost have presented eDNA as a potentially feasible method for timely and accessible early detection. Use of eDNA seems especially promising for environments which are difficult to survey using traditional methods.

The 2017 efforts of our eDNA and video surveillance project are well underway, as we continue to assess the feasibility of these technologies as tools for invasive species management. Water sampling and video will take place throughout the summer in four crucial tributaries of Lake Ontario: Oswego River, Salmon River, French Creek, and Chaumont River. Water samples are then tested in the lab of Dr. James Casey at Cornell University.

We welcome volunteers to assist with sample collection. Volunteers help us evaluate if eDNA and video surveillance can be used as effective tools by citizen scientists and communities for the management of their own ecosystems.

To get involved contact Mary Ripka, 315-387-3600; mripka@tnc.org.

Extracting eDNA, Rob Williams, front, SLELO Coordinator; Zach Bengtsson, back, eDNA Project Coordinator.

2017 Eastern Lake Ontario Invasive Species Symposium

On June 7th partners of the SLELO PRISM hosted the third biennial Eastern Lake Ontario Invasive Species Symposium. Eleven presentations provided expert knowledge focused on invasive species threats, management strategies, and outreach collaborations. 101 attendees had an opportunity to learn and obtain continuing education credits for NYS DEC pesticide application, the Society of American Foresters (SAF), the International Society of Arboriculture (ISA) and Certified Nursery & Landscape Professionals (CLNP).

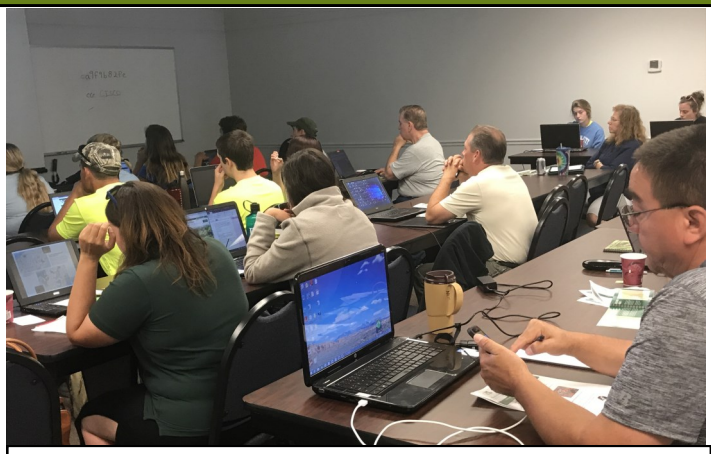
Exhibits from the New York State Invasive Species Research Institute, Department of Environmental Education, Office of Parks, Recreation & Historical Preservation, The Sentinel Plant Network and SLELO PRISM offered outreach materials and provided information. Many thanks to the SLELO education and planning committee, SLELO volunteers, Douglaston Salmon Run, Selkirk Shores state park, and The Nature Conservancy Central & Western Chapter for making this event a success.

SLELO partners and organizers of the 2017 ELO Invasive Species Symposium. Photo Credit: Liz Truskowski, DEC.

iMapinvasives.org Spring Blitz Training

On June 14th , SLELO PRISM in cooperation with iMapinvasives.org and the Cornell Cooperative Extension of Jefferson County hosted a training for 32 participants who learned how to identify invasive species in the region and report observations via iMap.

Attendees also volunteered to become part of the SLELO PRISM Invasive Species Volunteer Network to search for priority watch list species in highly probable areas within our PRISM. Thank you to The Nature Conservancy for providing a lite lunch for this event.



2017 iMapinvasives.org Training attendees.
Photo Credit: Megan Pistolese.

Upcoming Events

We encourage our partners to highlight their upcoming events in each newsletter.
Please contact Megan Pistolese to submit an event at 315-387-3600 ex.7724; megan.pistolese@tnc.org

The 2017 Invasive Species Awareness Week (ISAW) will be observed from July 9th—July 15th

DEC Community Water Chestnut Hand Pull: Tuesday, July 11th 9am-2pm. Meet at the South Sandy Creek Canoe/kayak launch, NYS Rt. 3, group will then go to Lakeview Marsh WMA. For questions contact information.R6@dec.ny.gov

Invasive Species Awareness Workshop: Wednesday, July12th, 9am-3:30pm, at the Massena Nature Center, 19 Robinson Bay Rd, Massena, NY 13662. **Contact:** Paul Hetzler, (315) 379-9192, ext. 232; ph59@cornell.edu

Invasive Species Paddle Tour: Wednesday, July 12th, 1pm, at Lake Bonaparte. Contact: Nichelle Billdhardt, 315-376-6122; nichellebillhardt@lewiscounty.ny.gov

Invasive Species Paddle Tour: Thursday, July 13th, 5:30pm-7:30pm at the Pine Grove Boat Launch Rt. 3 Pulaski, NY. **Contact:** Patricia Shulenburg, 315-387 2657; patricia.shulenburg@parks.ny.gov

3rd Annual Integrated Pest Management Conference: Thursday, July 13th, 2017. 8:30am-4:30 pm at Siena College in Albany, NY. **To register:** tinyurl.com/ltphg6d **Contact:** Joellen Lampman, 518-441-1303; jkz6@cornell.edu

Port Ontario Water Chestnut Pull: Saturday, July 15th . 10am-12:30 pm at the Pine Grove boat launch located off Rt. 3 in Pulaski, NY. **Contact:** Joe Chairvolotti (315) 592-9663; joe.chairvolotti@oswegosoilandwater.com

Pollinator Pathway Project Workshop: Tuesday, July 18th at 6:30 pm located at the Henderson Fire Hall/Library- 8939 State Route 178, Henderson, NY 13650. **Contact:** Sue Gwise (315) 788-8450 ext. 243 sjg42@cornell.edu

The First Regional Invasive Species & Climate Change (RISCC) Management Symposium: July 27-28th at UMASS Amherst. Bringing together natural resource managers and scientists to discuss how climate change may affect invasion risk in the northeast**. To Register:** http://people.umass.edu/riscc/

Tench Tension

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By: Paul Hetzler, CCE St. Lawrence County

Being gregarious, boisterous diners, tench churn up bottom sediments, which increases turbidity and releases nutrients from the mud. Tench also harbor parasites that can be transferred to native fish and mollusks. The copper redhorse (*Moxostoma hubbsi)* is said to be particularly vulnerable. Tench compete with indigenous fish such as perch, and have been associated with a decline of that species following their invasion of a waterbody. Mollusks and crustaceans, organisms which consume algae, are preferentially grazed by tench to the point that algae blooms may occur more frequently post-infestation.

Not all invasive species are created equal. The Asian longhorn beetle seems like the project of an evil overlord; if it has one redeeming quality, no one has yet identified it. Tench, on the other hand, have some supporters. Easily raised under all kinds of conditions, they are an important food source, and are still cultivated around the world (including one US state). They are considered a decent sportfish in some locales, and are fodder for many native fish.

Information on tench is easy to find, but is sometimes inconsistent, even among reliable sources. Perhaps because of its equivocal character, widespread distribution and long history of domestication, the tench has not been studied as much as other aquatic invasives have.

Tench may not be as destructive as some invaders, and we may need to study it further, but we know it will cause some harm to the Great Lakes ecosystem, and we need to do all we can to exclude it for as long as possible.

Tench. Photo credit: Ontario's Invading Species Awareness Program, www.invadingspecies.com.

COORDINATOR'S COLUMN

Cultural Impact of Invasive Species

Much is known about the environmental, ecological and economic impact of invasive species, but what about their social impact; the effect that invasive species have on us, our happiness, our livelihoods and our way of life.

The Lake Ontario fishery, for example, provides food and income to individuals, families and water-based businesses. Charter captains and their families depend on a high-quality fishery to create and sustain their business, and their catch becomes food for their clients and families. Waterfront restaurants depend on locally caught perch and bullhead to attract business and support their livelihood. Marinas and waterfront homeowners are impacted by invasive aquatic plants that cause an assortment of headaches and degrade waterfront property values and reduce boat slip rentals. This lake-based way of life occurs throughout the Great Lakes, including locally along Eastern Lake Ontario.

Terrestrial landscapes also provide individuals and families with food such as venison, as well as social enjoyment and well-being. Farmers, gardeners and homeowners spend significant resources each year just to keep invasive plants in check. When compared to the economic benefits supported by water-based recreation and ecotourism, the need to provide healthy, sustainable freshwater and terrestrial resources becomes a local, regional and global priority.

What may not be clear is how, specifically, invasive species affect people and their way of life - and if so, to what extent. This type of local and regional information could prove very useful in determining the human factor which would serve to complement nature's needs.

This summer the partners of the SLELO PRISM, with assistance from Cornell Cooperative Extension of Jefferson County, will be launching a Cultural Impact Survey designed to evaluate and articulate the impact of invasive species on people's way of life within the Eastern Lake Ontario, St. Lawrence and inland areas of the SLELO PRISM region. Information will be garnered through a written and on-line survey and/or a collection of verbal testimonials from individuals and businesses that depend on high-quality freshwater and terrestrial resources to thrive. The desired outcome of this survey is to determine the impact that invasive species have on people's well-being and livelihoods, negative or positive. To receive a link to this survey please contact Rob Williams at rwilliams@tnc.org or Timothy Ives at tmi4@cornell.edu.

~Rob Williams

SLELO PRISM Partners

- NYS Department of Environmental Conservation
- The Nature Conservancy
- Cornell Cooperative Extension Offices
- NYS Office of Parks, Recreation & Historic Preservation
- NYS Department of Transportation
- NY Sea Grant
- Ducks Unlimited
- Soil & Water Conservation Districts
- Fort Drum Military Installation
- Tug Hill Tomorrow Land Trust
- Tug Hill Commission
- Save The River
- Onondaga Audubon
- Thousand Islands Land Trust
- NY Power Authority
- CNY Regional Planning & Development Board
- US Coast Guard Auxiliary

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NYS Invasive Species Council
The NYS Environmental Protection Fund

The Nature Conservancy
Protecting nature. Preserving life.

C/O The Nature Conservancy, CWNY