2019 Winter Newsletter

SLELO PRISM

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

Teaming Up to Stop the Spread of Invasive Species

40% *of new invasive species infestations are* ***discovered by volunteers*** *who have learned to recognize and report observations.*

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About the cover

Protecting our Lands and Forests

Prevention and early detection play a key role in our mission. Detecting invasive species before their populations become established, increases the potential for successful man-agement strategies, including possible eradication.

Nearly 40% of new invasive species infestations are found by volunteers who have learned to recognize invasive species and report their observations.

SLELO PRISM has been actively recruiting and training volunteers to survey for priority invasive species and report observations via iMapInvasives.org through our Volunteer Surveillance Network (VSN). **To enrich engagement and promote recruitment, an interactive story map for the VSN has been created and can be viewed under the Learn and Help section of our website.** The network is always growing, if you have interest in helping to search for invasive species contact megan.pistolese@tnc.org . **Below is a breakdown of the VSN.**

45 Volunteers are trained to monitor for Hemlock Woolly Adelgid. *Efforts are focused in the southern tier of Tug Hill and ADK border.*

39 Volunteers are trained to monitor for Emerald Ash Borer. *Efforts are focused along the St. Law. River & southern tier of the SLELO region.*

31 Volunteers are trained to monitor for priority aquatic invasive species such as fanwort and tench. *Efforts are focused in waterbodies throughout the SLELO region.*

Volunteering for SLELO PRISM -*Experience Showcase*

Being a life-long resident of St. Lawrence county, nature has always been my greatest passion. Conservation minded on a personal level, I was soon to be exposed to a noble and most worthy cause, the preservation, enhancement, and protection of this natural world we call home.

Being an avid hiker , I volunteered to become a trail steward initially and then learned of public trails owned by two local land trusts. I helped clear trails and maintain walkways, etc. I brought my son Zane along. We signed up for events, educational seminars, and various projects. Thus my intro to SLELO PRISM. We learned about invasive species. Learned of the need for volunteers to become stewards of our lands and waters. So we jumped in!

The day of our first project turned into a most memorable one! We made new friends, spent the day on the water removing invasive floating plants called water chestnuts and discovered a fabulous place we never knew existed—Lakeview. We even made it on the local news! What a great feeling. Doing good and having fun. Being part of a group. Making a difference. I think others should become volunteer with SLELO PRISM. People might also experience what we have discovered. The benefits are many! **Our time is our greatest asset. It is how we use it that defines us as individuals. I have chosen a lead by example approach to teach my son the importance of conservation.** The lessons we have learned are part of our journey. Our experiences have strengthened our bond as father and son. Through our volunteer experience, we have made many great memories and new friendships. We look forward to volunteering with SLELO again. **I need But one word to describe it all: rewarding!**

~Greg & Zane Washburn

Learn about volunteer opportunities & workshops

A Proactive Stance Could Protect Hemlocks in the SLELO Region

By: Charlotte Malmborg-Hemlock Initiative

SLELO is the only PRISM region in the state without a confirmed hemlock woolly adelgid (HWA) sighting, but as this pest moves north and west through New York's forests, that could change fast. Keeping vigilant watch for HWA infestations and responding quickly when they are found is critical to slow the spread of HWA and preserve hemlock health. Land surveys are essential, but boots on the ground can be supplemented by boats on the water.

The New York State Hemlock Initiative (NYSHI) has developed a survey protocol to help boaters, anglers, and paddlers identify potential infestations. Bright, lime-green hemlock shoots indicating the season's fresh growth appear in early summer, but HWA infestations suppress the development of these shoots, resulting in a dull appearance. **Pale, graying hemlock branches lacking telltale green shoots can be spotted easily along waterways in June.**

Skaneateles Lake HWA boat survey. Photo credit, Charlotte Malmborg-Hemlock Initiative.

Monitoring shorelines rich with hemlocks can help create a hemlock baseline in the region and identify potential areas for future surveys and management. These locations, once identified, will be ideal for monitoring once HWA is discovered in the SLELO PRISM. Getting to know the region's hemlocks now will help conserve and maintain their legacy for generations to come.

Early detection efforts are one half of the equation; preparation is the other. **Since there are no known HWA infestations within the SLELO PRISM, it has time to plan for HWA's arrival**, and to decide how to manage the region's abundant hemlock resources once HWA is found. Having a plan in place will allow SLELO to meet impending infestations head-on and make the most of management efforts.

Eastern hemlock is New York's third-most common tree species, and the **Tug Hill** Plateau in the SLELO region has some of the densest hemlock forests in the state. Infested hemlocks are treated individually, and although treatment is not expensive, it will not be possible to save them all. **Management efforts must be directed at saving the most ecologically, culturally, and genetically diverse hemlocks.** The New York State Hemlock Initiative is currently developing a tool to help landowners prioritize their hemlock resources for management to help make tough decisions when considering HWA treatment.

There are several factors that determine the value of hemlocks on the landscape. Hemlocks are ecologically important, creating and supporting unique habitats. They are often found along streams where they keep banks stable and waterways clean. Hemlocks are also found along trails where people recreate, and near homes, where they add aesthetic beauty. Finally, there are ecologically significant hemlock swamps and magnificent specimens which deserve protection. These all represent different priorities that can help determine whether or not to treat a particular hemlock tree or stand. **NYSHI's hemlock prioritization tool helps identify those terrestrial, aquatic, and cultural values of highest importance for treatment and preservation**.

Those who reside in the SLELO PRISM do not have to wait for a HWA infestation before assessing hemlock stands. The tool is used to find hemlock stands of importance, and scores groupings of hemlocks based on parameters set by the landowner or manager. The tool can be used for hemlock stands on one property, or large swaths across many properties, depending on the needs of the land manager. **Landowners and managers in the SLELO region can start identifying priority hemlocks now to prepare for HWA infestations.**

Mark Whitmore and staff members from Catskill Mountainkeeper & CRISP PRISM planning a hemlock management strategy. Photo credit, Nick Dietschler-Hemlock Initiative.

Updates on Select Biocontrol Projects from Across the State

By: Audrey Bowe, New York Invasive Species Research Institute, Cornell University

Thanks to support from state partners and the work of dedicated researchers, biological control projects for key invasive species in New York State are being advanced. **The goal of these programs are to identify, vet, cultivate and evaluate insect agents that can offer a long term, sustainable tool for managing some of the most abundant, well-established, and impactful invasive species in the region.** Brief descriptions and updates on key projects are provided below. *Special thanks to Carri Marschner, Charlotte Malmborg, Dr. Andrea Davalos, and Wade Simmons for reviewing and providing feedback on this update.*

Water Chestnut (*Trapa natans*): This program, currently being advanced by researchers at Cornell University, has focused on a leaf-feeding beetle, *Galerucella birmanica*. A colony of these beetles is currently held in quarantine and no-choice tests (testing whether larvae and adult beetles will eat certain plant species if offered nothing else) for 57 native or economically important plants were completed in early summer 2018. Follow-up preliminary multiple choice-tests (testing what larvae and adults will feed on if offered several plants, including water chestnut) were completed over the summer of 2018. Results are promising, with *G. birmanica* selecting water chestnut over other species almost exclusively, with the exception of water shield (*Brasenia schreberi*), a native floating aquatic plant in the Cabombaceae family. In response to this finding, researchers have initiated experiments to determine potential non-target impacts of *G. birmanica* on water shield (*Brasenia schreberi*), which will continue into 2019. A petition for field release of *G. birmanica* with all quarantine test results summarized will be submitted to the USDA Technical Advisory Group in summer 2019.

Swallow-wort (*Vincetoxicum rossicum* & *V. nigrum*): A group of researchers from the SUNY ESF, SUNY Cortland, Wells College, and the USDA, along with the New York Invasive Species Research Institute have been moving biocontrol of swallow-wort forward through a swallow-wort research collaborative. While several biocontrol agents are currently in "the research pipeline", the leaf-feeding moth, *Hypena opulenta*, is the furthest along in the process. Approved and released in 2013 in Canada, 2018 marked the first year *H. opulenta* was released in New York. Several hundred individuals were introduced into research plots in central and northern New York this summer, a number lower than initially intended due to issues with mass rearing. 825 instars were released in the SLELO region. *H. opulenta* populations and their impact will continue to be monitored and further releases are planned for 2019.

In Europe, testing has resumed on the root-feeding beetle *Chrysochus asclepiadeus*. In a lab setting, this agent consumed native milkweeds, however an open field test conducted this summer in Europe revealed adult beetles are much more specific to swallow-wort than previously supposed. Follow up field tests to investigate further are planned for the upcoming summer.

Hemlock Woolly Adelgid (*Adelges tsugae*): The New York State Hemlock Initiative, based at Cornell University, has been actively working to establish several agents for the hemlock woolly adelgid (*Adelges tsugae*), a small aphid-like pest devastating eastern hemlocks (*Tsuga canadensis*). The program has continued to advance the rearing and distribution of *Laricobius nigrinus*, a predatory beetle that feeds on overwintering adelgids. Currently, there are over 20 sites where these beetles have been released over the last 9 years, with self-sustaining populations confirmed at 5 sites in the Finger Lakes Region. Winter mortality of hemlock woolly adelgid may be limiting the food supply, and thus populations of these beetles. Two species of silverfly (*Leucopis argenticollis* and *L. piniperda*) are also being researched for HWA biocontrol in New York. These flies feed on hemlock woolly adelgid eggs during the spring and summer months, complementing the winter-feeding *Laricobius*. In 2018, researchers successfully reared two generations of silverflies in the lab, and adult flies released into mesh bags covering adelgid-rich hemlock branches reproduced during the summer months. To-date, over-winter establishment has not been verified for released populations of silverflies in New York.

The New York Invasive Species Research Institute, based at Cornell University, is dedicated to addressing gaps in information and communication between practitioner and researcher communities and actively supports and promotes biological control as a long-term sustainable solution to mitigate the negative impact of invasive species.

From the left: *Galerucella birmanica* biocontrol agent for water chestnut, photo credit: Audrey Bowe; *Leucopis* sp. Biocontrol for hemlock woolly adelgid, photo credit Mark Whitmore; *Hypena opulenta* biocontrol for swallow wort, photo credit Jeromy Biazzo.

Emerald Ash Borer Confirmed in Marcy, NY.

By: Michael Giocondo-NYS DEC

Recently, emerald ash borer was confirmed in a tree near the parking area at the Lock 20 Canal Park on Route 291 in the town of Marcy in Oneida County.

The tree was first noticed due to woodpecker activity, which continues to be a good indicator for the insect. The location has been added into the iMapInvasives database. There were also some additional trees that were noted as showing signs of the insect at the location.

Outreach is currently being completed with the agency responsible for managing the location. The DEC may also do some additional outreach and surveys in the area as allows.

If you think you may have an EAB infestation, call the DEC EAB and Firewood hotline: 1-866-640-0652.

EAB community preparedness efforts are underway throughout the SLELO PRISM. To learn more about EAB, and how to prepare for this invasive tree pest visit the SLELO PRISM website.

Location of the recent confirmed EAB observation. Photo credit, Michael Giocondo-DEC.

Tench Confirmed in Upstream Sections of the St. Lawrence River

By Megan Pistolese-SLELO PRISM

An invasive fish named Tench (*Tinca tinca*) was detected in the St. Lawrence River near Cornwall, NY this past fall. The fish was discovered by the International Lake Ontario-St. Lawrence River Board -Saint Regis Mohawk Tribe Environment Division during a fish survey *(pictured to the right– photo provided by Tony David).*

Tench is native to Europe and Western Asia and a member of the minnow/carp family *Cyprinidae*. It was introduced to the U.S. as a food source and sport fish and is well established in the British Columbia and Mississippi River. In the 1990's, tench was illegally introduced by an unlicensed fish farm to the Richelieu River, a tributary of the St. Lawrence River. The 2018 detection of tench in the American waters of the St. Lawrence River (SLELO region) has raised concerns about the impacts this invasive fish may have on Lake Ontario and the Great Lakes.

The impacts that tench may have on our freshwater systems are not well known. However, it is believed that tench will directly compete with many native fish species for food and it may introduce non-native parasites & pathogens to the aquatic ecosystem.

SLELO PRISM is focused on strengthening early detection efforts for tench through our Invasive Species Volunteer Surveillance Network.

If You Find Tench:

- Note your location.
- Don't release the specimen, put it on ice.
- Take close-up photos of the specimen.
- Notify SLELO PRISM at 315-387-3600 (x 7725) rwilliams@tnc.org

Learn more about tench at our website.

To help keep an eye out contact megan.pistolese@tnc.org

Species Spotlight

Responding to Porcelain Berry Found in St. Lawrence County

By: Paul Hetzler– St. Lawrence County CCE

A total lunar eclipse is way more common than the swift extirpation of a new invasive plant infestation, but we were brazen enough to think such a thing had occurred in St. Lawrence County in summer 2018. The plant eradication, I mean—we all know about the celestial events this past July, and just recently on January 21.

Dr. Tony Beane, Professor of Veterinary Science at SUNY Canton and an avid naturalist, contacted SLELO PRISM revealing that an exotic vine capable of smothering fields and forests had been found in Ogdensburg, NY. Commonly called porcelain berry (*Ampelopsis brevipedunculata*), there is nothing "brev" about the Latin name, nor the growth habit, of this aggressive woody vine which can quickly blanket vegetation along streams and forest edges, killing native plants and curbing regeneration. Though it is banned in most states, and listed as a "Prohibited Species" by the New York State Department of Environmental Conservation (NYSDEC), web searches still turn up dozens of ads to buy this vine, even when "invasive" is added to the search parameters.

After the discovery of porcelain berry in Ogdensburg was relayed to SLELO PRISM, their Early Detection Team made a site visit, and the plants were promptly destroyed. The team will make follow-up visits over the next few seasons to scout for regrowth.

It was a mixed blessing that Cornell Cooperative Extension of St. Lawrence County issued a notice that this novel IS was so handily killed off. As a result of the news release, a homeowner in the Town of Stockholm in the Potsdam, NY area called CCE to report porcelain berry on her property. Sure enough, her place was loaded with the vine. Because it was so late in the season, SLELO PRISM will take a visit to this new site this spring to confirm and respond.

Native to Japan and parts of northern China, porcelain berry was first brought to the US around 1870 as an ornamental. It is related to our native wild grape, with which it can be easily confused. Unlike grapevine, which has shaggy bark and a brown pith, the **porcelain berry vine has smooth, lenticeled bark, and a white pith**. The hard, **multicolor berries for which it is named progress from green to lavender to bright blue as they ripen,** and do not hang down like grapes, but are held more erect. **Porcelain berry leaves are often deeply 5-lobed as compared to grape leaves**, which are generally 3-lobed and not as deeply incised, but this varies greatly and is a poor diagnostic feature. The white pith is the key identifier.

Area residents are urged to keep an eye out for porcelain berry. Its fruits are eaten by birds, and seeds from these two known populations could easily have been carried to other places in northern New York State.

Variegated variety of porcelain berry found in St. Lawrence County. Photo credit, Toney Beane-SUNY Canton. Berries, photo credit, © TNC/Rob Williams.

To learn more about porcelain berry, please visit the SLELO PRISM website.

If you think you have found porcelain berry

- Note the location of the plant
- Take a good clear photo of the plant (be sure to include a close-up of the leaves/berries in addition to the entire plant). Or collect a specimen and store it in a sealed bag to avoid spreading it.
- Report the observation & submit any specimens to the SLELO PRISM office; 315 387 3600 x7725, rwilliams@tnc.org
- iMapInvasives.org can also be used to report observations

iMapInvasives
Sharing information for strategic management

Enhancing the Health of the Urban Landscape

By: Michael DeMarco-City of Watertown & Pamela J. Dixon-JCC

The City of Watertown and Jefferson Community College (JCC) were both recently awarded tree-planting grants through the NYS Department of Environmental Conservation's Urban and Community Forestry Grant Program (UFGP). The UFGP helps communities develop and implement comprehensive tree planting, management, maintenance, and education to create healthy forests while enhancing quality of life for residents.

In collaboration with Tree Watertown, the City's street tree advisory board and Planning Staff will use GIS data from the City's recent tree inventory to identify potential planting sites. Areas to be targeted for spring planting include neighborhood parks, playgrounds and along streets.

Watertown's $20,250 UFGP grant will also replace trees lost due to the emerald ash borer. This will add canopy to areas lacking tree cover to provide shade and storm water interception, improve neighborhood aesthetics and help address potential environmental justice issues.

In addition to replacing ash trees, the City of Watertown will continue its tree adoption program. At the request of property owners, Planning Staff will assist in species selection for trees to be planted on private property at no cost to residents. Trees will be planted and maintained by the City for one year, after which the trees will be gifted to property owners.

If you're interested in participating in Watertown's Tree Planting Program, please contact the Planning Staff at 315-785-7884.

Spring 2019 Tree Planting Season at a Glance:

- April 26: Watertown's 22nd Annual Arbor Day Celebration and ceremonial tree planting at Lansingdorf Park, corner of Seymour St. and Lansing St.
- April 27: The Annual 2019 Spring Volunteer Tree Planting Event in Thompson Park with the planting of over 30 trees.
- April 29-May 3: Watertown DPW's Annual Spring Tree Planting Project—roughly 140 trees will be planted throughout the City.

Details about upcoming volunteer opportunities can be found on Trees for Watertown and City of Watertown Planning and Community Development Facebook page. Like or Follow to receive alerts!

Jefferson Community College, one of only two community colleges to receive a UFGP grant out of fifty-four total grants awarded, will use its **$18,350 to complete a campus tree inventory and create a tree management plan. The program complements DEC's ongoing initiatives to address invasive species,** climate change, environmental degradation, environmental justice, and urban sprawl.

Volunteers planting trees through the Watertown Tree Planting Program, photo credit, Mike DeMarco-City of Watertown.

The project at Jefferson will provide long-term guidance through its tree management plan to help foster a safe and beautiful campus for years to come . JCC's project will also enhance local green spaces and align JCC tree management with other area entities. Additionally, it will ensure that JCC's urban forest is resilient to the onset of emerald ash borer and contributes to the goal of reducing the carbon footprint of the campus.

"A tree inventory and management plan will help us preserve our campus green space for the future," said Bruce F. Alexander, Director of Administrative Services at JCC. "We have over 1,000 mature trees on campus including native and imported species ranging in age from 50 to 100 years old. **JCC campus trees provide an oasis for wildlife and help protect the quality of the Black River by reducing and filtering storm water run-off."**

The Urban Forestry Grant supports the mission of the JCC EverGREEN Committee for sustainability. The committee comprises faculty, staff and students who plan activities, lectures, and programs to create awareness of the importance of conserving and protecting the natural environment. Through efforts of the EverGREEN Committee, JCC has been recognized by the Arbor Day Foundation as a Tree Campus USA, first in 2012 and then again in 2017.

The UFGP projects planned by the City of Watertown and JCC align with **community preparedness** efforts in the SLELO PRISM region for emerald ash borer. To learn more about how to prepare for EAB visit the SLELO PRISM website.

Seeking a Sustainable Approach to Control Invasive Watermilfoil

By: Dr. Diana White and Dr. Michael Twiss– Clarkson University

In the summer of 2017, the New York State Department of Environmental Conservation awarded Clarkson University researchers a three-year grant to determine an environmentally sustainable approach to control invasive watermilfoil (IWM) in Norwood Lake, a reservoir on the Raquette River. These plants, primarily Eurasian Watermilfoil (EWM) and Variable-Leaf Watermilfoil (VLM), are spreading rapidly in Norwood Lake, as well as surrounding waterways, by choking out native aquatic plants. The research team, led by Clarkson Professors Diana White, Jonathan Martin, and Michael Twiss, consists of four students, Kyle Mummau, Samanthan Impastato, Autumn Osgood, and Brian Kuhns, as well as engaged members of the Norwood Lake Association.

The team's approach to control IWM is highly interdisciplinary, using experimentation, survey techniques, and predictive modeling to determine the best control strategy. The primary goals of the project are: (1) to determine why Norwood Lake has become an ideal breeding ground for IWM, and (2) to determine sustainable strategies to control IWM in the lake. Some of the control techniques the team has tested are physical removal (hand pulling) and bottom covers, effective for preventing growth in heavily infested areas. Over the next year, the team will investigate techniques for enhancing the habitat of the milfoil weevil, a native insect that preferentially feeds on EWM.

To determine whether Norwood Lake is suitable for weevil augmentation, the team is completing an extensive metadata analysis on approximately 100 published field studies for which weevil augmentation has been completed, and the extent of success documented. The goal is to determine lake characteristics for which it is likely that weevil augmentation will be successful, thus determining whether or not this lake is a good candidate for weevil augmentation.

In light of this metadata analysis, Clarkson students spent this summer collecting data on water quality, temperature, nutrient levels, and light. These metrics are not only useful for the metadata analysis, but are also crucial information needed to understand why Norwood Lake is a suitable home for IWM.

In addition to testing control strategies in the field, the team will test strategies using predictive modeling, an endeavor led by White and Martin. Predictive modeling is a powerful tool that will provide a better understanding of how different management scenarios can work to control IWM growth and spread, in both a time and cost-effective manner. The team has been busy developing preliminary models, and they will create user friendly computer software, so individuals can test control strategies to see which might be best suited for a given water body. To test predictive models against data (i.e., to validate the models), the team has begun testing IWM growth and spread rates. To understand how fast IWM grows, the team collected samples from 1 m^2 plots at different times during the growing season. These plots were marked out by quadrats, designed by Twiss and Mummau. Further, to understand how the plants spread, catch nets were designed and set up at the inflow and outflow of the lake to determine how much IWM is flowing in and out of the lake.

The primary goal of this project is to develop *sustainable* strategies to control IWM. Therefore, if we want to control IWM in Norwood Lake, we must share our methods and ideas with stakeholder communities both upstream and downstream along the Raquette River, since these plants are easily spread by water currents and boats. To promote collaboration, our team has been working with local lake associations and we will continue to reach out and educate other lake communities in the region. **The ultimate success of this project will require participation from all communities in the area and their continued vigilance and participation.**

Contact: dtwhite@clarkson.edu for more info on the Norwood Lake project or to get involved.

Clarkson University student volunteers and community members collecting invasive watermilfoil from the lakebed of a drained Norwood Lake Summer 2017 (Raquette River), Norwood, NY. Photo credit: Michael Twiss.

Partner Spotlight
NYS Department of Transportation Invasive Species Initiatives

By: Peter Dunleavy– NYS DOT– Landscape Bureau

The New York State Department of Transportation (NYSDOT), in fulfilling its mission to ensure the public a "safe, efficient, balanced and environmentally sound transportation system," stewards a vast network of transportation corridors, which are prime pathways for invasive species movement. In managing our rights-of-way and construction projects, soil is inevitably disturbed, and it's necessary to move large quantities of material, as well as equipment, both within NYS and from other states. Preventing the introduction and spread of invasive species and managing them on our rights-of-way are longstanding priorities. We are committed to ecological sustainability, safety and protecting public assets.

NYSDOT has a long history of collaboration with partner agencies, including PRISMs, on invasive species issues. We have been a voting member of the NY Invasive Species Council since its inception in 2007, and were instrumental in building the state-wide network of PRISMs. More recently, we have helped shepherd the New York State Invasive Species Comprehensive Management Plan from its planning stages to its adoption in 2018. Our core IS involvement has been a years-long process of internal education, outreach, and training. We have been building awareness of key invasive species and their implications and BMPs amongst our ranks from field personnel to top management. We strive to incorporate invasive species prevention in all our work, whether in planning, design, construction, or ongoing operations.

The NYSDOT offers frequent webinars on IS topics such as iMapInvasives and Emerald Ash Borer. They have incorporated training, updates and fieldwork in annual meetings for field engineers, bridge inspectors, pesticide applicators and environmental staff. We have incorporated sections on invasive species into key guidance documents such as our Environmental Handbook for Transportation Operations. It is second nature for our designers to identify and map invasive species as part of site analysis for capital projects. As much as possible, we include provisions in construction documents for ED/RR actions in the event key IS are encountered. We have improved and expanded specification options to keep soils on-site, and to restore disturbed areas with native plant species. This has resulted in improved pollinator habitat, and has reduced the ability of IS to establish & spread.

NYSDOT's most recent collaborations involving invasive species include:

- Obtaining Federal State Planning and Research (SPR) funds to manage the Phragmites Biocontrol Research Project. This project investigates Phragmites biocontrols; Bernd Blossey is Principal Investigator.

- Securing funds (through SPR) to manage the Swallow-wort Biocontrol Research Project. This project investigates biocontrols for Pale & Black Swallow-worts in NYS; Dr. Dylan Parry is Principal Investigator.

- Working with NYS Ag & Markets and DEC to develop a response to the new Spotted Lanternfly quarantine. We are are working on an Engineering Initiative to outline roles and responsibilities for NYSDOT design, construction and operation staff in supporting the quarantine.

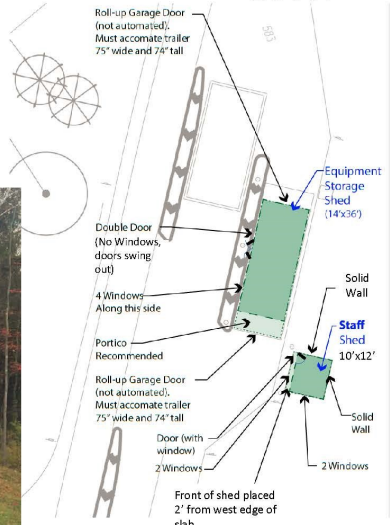
- The inclusion of a flagship boat-wash facility in the new Adirondacks Welcome Center located along I-87 Northway, in coordination with the Adirondack Park Invasive Plant Program the Adirondack Aquatic Invasive Species Prevention Program.

ADIRONDACK WELCOME CENTER BOAT WASH SHEDS

Shed design draws on detailing of new Center, to make the boat wash experience integral to a visit

Visualization of Equiment Storage and Staff Sheds in place

LAYOUT



Upcoming Invasive Species Events

We encourage our partners to highlight their upcoming invasive species related events in each newsletter. Please contact Megan Pistolese to submit an event at megan.pistolese@tnc.org.

Visit our website Events Page to learn of upcoming events near you!

Adelgid Workshop & Survey: Friday, February 15th 10:30am-2pm (inclement weather date 2/22) at Whetstone Gulf State Park located at 6065 W Rd, Lowville, NY 13367. Participants will learn to recognize signs of hemlock woolly adelgid (HWA), an invasive pest that threatens hemlock trees. They will also will become part of a state-wide early detection effort to survey for HWA and learn how to report observations via the iMapInvasives mobile app. Click Here to Register. or email megan.pistolese@tnc.org.

In conjunction with the New York State IPM Program and the Department of Agriculture and Markets, the **Northeastern IPM Center will host a collection of webinars**, titled "Spotted Lanternfly Basics." Each webinar will focus on, and be tailored to, a specific commodity group & management practices covered will be specific to New York. *Visit the Northeastern IPM Center website register for the below webinars*

- Spotted Lanternfly Basics for Hops, Berry, and Vegetable Growers (Feb. 26, 2019, 10:00 a.m.)
- Spotted Lanternfly Basics for Grape and Apple Industries (Feb. 26, 2019, 1:00 p.m.)
- Spotted Lanternfly Basics for Christmas Tree Growers (Mar. 4, 2019, 10:00 a.m.)
- Spotted Lanternfly Basics for Nursery, Greenhouse, and Landscape Industries (Mar. 4, 2019, 1:00 p.m.)

Tug Hill Commission Local Government Conference: March 28th 7:30am-4pm at Jefferson Community College in Watertown, NY. SLELO will be exhibiting and there will be opportunities to interact with local government officials from across the state. Click Here to Register

NYS Invasive Species Awareness Week (ISAW) will be observed on July 7th through July 14th.

SLELO partners are encouraged to host events that aim to raise awareness of invasive species and engage communities in stewardship. If you plan to host an event, please email details to megan.pistolese@tnc.org so it can be accounted for and promoted on the statewide ISAW calendar.

North American Invasive Species Management Association research, policy, and outreach initiatives and opportunities across North America. Presentations, workshops, tours, and special symposia will highlight successful initiatives that bridge the gap between geographic, political, and public-private boundaries. Conference (NAISMA): September 30th-October 3rd in Saratoga Springs, NY. The conference program will seek to bridge the geographic divide between West to East and North to South, connecting terrestrial and aquatic invasive species management,

COORDINATOR'S COLUMN

Resistant and Resilient Landscapes

About a year ago, I raised the question of how we can make our Priority Conservation Areas, PCAs, more resistant to invasions of invasive species and more resilient to post treatment recovery (Spring Newsletter 2018). **Resistance** is the capacity of an ecosystem to retain its fundamental structure, processes, and functioning (or remain largely unchanged) despite stressors, disturbances, or invasive species. **Resilience** of a natural system is the capacity of an ecosystem to regain those attributes when similarly impacted (modified from (Chambers, Jeanne C. et al, 2015).

In and of itself, treatment of invasive species creates disturbances which leave treated sites exposed to other invaders, thus increasing the need to help these sites become more resilient. Increasing site resiliency may begin with tactical restoration of these sites, at least the larger sites. Planting native, warm-season grasses for example, may help expedite natural succession while at the same time enable the site to foster the return of native species which ultimately will help resist the establishment of other invasive species.

Our Salmon River Restoration Initiative shows, at several sites, that Japanese knotweed hasn't returned and the grasses and seedlings planted as a restoration effort continue to grow and thrive. So, either we were successful at eradicating the knotweed or our restoration efforts are going well or perhaps a combination of both. *In all fairness, I should note that we have achieved mixed results at some sites, and little success at a few. Restoration literature often refers to a multitude of site characteristics that influence restoration success such as soil type and temperature, soil moisture, exposure to direct sunlight, periodic flooding, etc.* Similar efforts are taking place in Tug Hill where we are planting native tree species which are more resistant to invasive forest pests, and more adaptable to changing climate (Sargis 2018). Our hope is that this forest segment will be more resilient, and better able to resist new invaders, especially in the wake of climate-related range shifts.

An interesting project led by our host organization, The Nature Conservancy (TNC), provides deeper insight as to what it means for a landscape to be resilient. The project examines resilient landscapes across Eastern North America and identifies conservation strategies. Downloadable data and a series of interactive story maps explore various aspects of conservation strategies that both enhance and impact landscape resiliency such as: carbon storage, road mitigation, landscape connectivity, and climate influenced species range shifts. I encourage you to take a gander at TNC's Resilient and Connected Landscapes Project .

As we proceed, I feel it is very important we continue to include the concepts of resistance, resiliency and restoration in our discussions of invasive species management, and that we implement practical strategies to foster resiliency and increase the resistance of natural systems against the impacts of invasive species.

~Rob Williams

SLELO PRISM Partners

- NYS Department of Environmental Conservation
- The Nature Conservancy , CWNY
- 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
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