Invasive Species and Ticks

It seems like ticks are everywhere the past couple of years, both on the news and in our natural areas. We consistently hear PSAs and reminders to dress with tick prevention in mind and to perform tick checks when we return home. While ticks and the diseases they spread have been in North America’s forests for thousands of years, recent changes to the landscape that include climate change, deer overpopulation and habitat fragmentation have allowed tick populations to reach historic levels.

While these factors contribute to tick populations on a large scale, invasive understory shrub and small tree species such as Japanese barberry (*Berberis thunbergii*), honeysuckle (*Lonicera spp.*) and multiflora rose (*Rosa multiflora*) have been shown to have profound effects on localized tick populations.

Studies conducted by Scott Williams and Jeffrey Ward demonstrate that Japanese barberry infestations create a unique microclimate with higher humidity levels and earlier leaf cover. These factors support increased tick populations by preventing tick desiccation and providing cover for host species such as white-footed mice and deer. The addition of invasive shrubs into a forested understory contributes to tick densities twice that of a non-invaded forest, as found by studies conducted in Maine (Elias et al. 2006).

Higher tick densities translate into a higher human health risk of contracting a number of tick-borne diseases that include Lyme disease, Babesiosis and Human Monocytic Ehrlichiosis, among others, and in the United States, the number of people diagnosed with these has been on the uptick.

While many of the factors that contribute to the overall tick population may seem out of our control or politically infeasible, the management of invasive species infestations in forest understories is both an effective and feasible means to reduce tick population. In Williams’ aforementioned study, in areas where Japanese barberry was controlled, the prevalence of Lyme disease-carrying ticks was equal to areas with no Japanese barberry by the second year of study. A similar study performed by Morlando et al. in the Albany Pine Barrens noted that the removal of black locust trees reduced the risk of Lyme disease by an estimated 98%.

If you are interested in the management of invasive understory shrubs on your private property, see our Best Management Practices for management advice.
Regional and State Updates

- The Great Lakes Slender False Brome Working Group Annual Report is available for download online. Read about the many accomplishments achieved during their second year.

- The Research Foundation for SUNY Buffalo State and the Great Lakes Center received grant funding through DEC to continue and expand upon the work WNY PRISM has done with Japanese stiltgrass (*Microstegium vimineum*) and slender false brome (*Brachypodium sylvaticum*). This funding will be used to address localized infestations and conduct additional surveys.

- WNY PRISM provided 9 boot brush stations to partners this season. We have now worked to install 29 stations throughout western New York. Check out the map on our website!

- WNY PRISM hosted 31 events during ISAW, the second most of any PRISM region, and won the Invasive Species Tree-of-Heaven Mapping Challenge.

- The WNY PRISM staff attended the North American Invasive Species Management Association (NAISMA) and New York Invasive Species Research Institute’s (NYISRI) 2019 Joint Annual Conference this fall. This conference has allowed us to network and build stronger partnerships with other invasive species programs. We’re now more energized and excited for new projects in the upcoming months and year.

Early Detection Updates

A large portion of WNY PRISM’s mission is the early detection of emerging invasive species. When infestations are discovered and managed quickly, we have the greatest chance to eradicate or contain the infestation. This summer WNY PRISM surveyed for, confirmed the identity of and managed newly discovered early detection species infestations across the region, a task we could not accomplish without our partners.

Our furriest partner, Dia the Detection Dog, can find invasive species by smell and more efficiently than humans. Dia and her handler Josh visited Letchworth State Park in July and helped us find additional infestations of Slender False Brome (SFB; *Brachypodium sylvaticum*). Our seasonal SFB Survey Technicians also found several new infestations in large part to last year’s habitat suitability modeling.

Meanwhile, WNY PRISM’s seasonal Crew spent several days this summer managing previously found infestations of Japanese Stiltgrass (*Microstegium vimineum*). They also discovered several new populations and we would like to encourage our partners to learn how to identify and manage this species, if they are not already familiar with it. See our Best Management Practices for more information.

Multiple infestations of early detection aquatic invasive species were also reported this summer. We received reports of Hydrilla (*Hydrilla verticillata*), European Frogbit (*Hydrocharis morsus-ranae*), Water Chestnut (*Trapa natans*) and Yellow Floating Heart (*Nymphoides peltata*), each of which threaten western New York’s waters. This was the first western New York report of Yellow Floating Heart. Management for these species is currently underway or is planned for the 2020 season.

Lastly, Scotch Broom (*Cytisus scoparius*), a perennial shrub, has also been found for the first time in western New York. The single plant was promptly removed and the site will be monitored in the coming years.

Please report future sightings of these species, or any of our other early detection species using our Early Detection Reporting Protocol.
2019 Watercraft Inspection Program Data

Were any AIS Spread Prevention Measures Taken?

- Yes: 53%
- No: 34%
- Boater Doesn’t Know: 7%
- Not Asked: 6%

Total Invasive Species Removed: 1,843

- Eurasian Watermilfoil: 952
- Curly Leaf Pondweed: 749
- Zebra Mussel: 112
- Quagga Mussel: 27
- European Frogbit: 1
- Spiny/Fishhook Waterflea: 1
- Water Chestnut: 1

Total Interactions: 39,697

Total Inspections: 17,065

95% Acceptance Rate

Inspections per Launch:

Steering Committee Members

Buffalo Niagara Waterkeeper | Chautauqua Watershed Conservancy | Cornell Cooperative Extension Ecology & Environment, Inc. | Natural Resource Conservation Service USDA - NRCS | New York Sea Grant

NYS Nursery and Landscape Association, Inc. | NYS Department of Environmental Conservation

NYS Department of Transportation | NYS Office of Parks, Recreation, and Historic Preservation

Great Lakes Center - SUNY Buffalo State | United States Army Corps of Engineers, Buffalo District

USFWS, Lower Great Lakes Fish and Wildlife Conservation Office

www.wnyprism.org
Few things are as important as strategic planning when it comes to addressing the threat posed by invasive species and the management of an environmentally – focused nonprofit. Invasive species are pervasive and new threats combine with existing ones to add increasing strain on limited resources. Strategic planning allows us to better focus our efforts and ensure those limited resources have the greatest positive impact across our entire region.

WNY PRISM began the development of a new 5-year strategic plan this spring and has continued to review and update goals and objectives through the hard work of our Steering Committee and Staff. In September we opened up the process to the full partnership and held four planning sessions over the course of two days. Partners reviewed the updated objectives and provided ideas on specific strategies to implement moving forward.

The final steps of the planning process will continue as part of WNY PRISM’s Fall Partner Meeting, to be held on October 24, and with the recently released Partner Survey. We do hope you will join us at the Partner Meeting as we present the vision for WNY PRISM’s next five years and please take the survey!

Species Profile: Oriental Bittersweet

Oriental bittersweet is a perennial vine that can climb 60 feet into trees. Its leaves are alternate, finely toothed and variable in shape. The plant produces greenish-yellow clusters of flowers in May and June that give way to reddish-orange fruit in the fall. Oriental bittersweet looks very similar to the native American bittersweet, which has terminal flowers and orange capsules. There are infestations scattered across New York State and while it has been found throughout the western New York region, it remains under-reported.

This species represents both a significant ecological threat and a threat to timber production. Its rapid growth can shade out native vegetation and its strong vines can girdle trees, preventing the movement of water and nutrients. These pressures also weaken trees and make them more vulnerable to wind and ice damage.

Oriental bittersweet was introduced from Asia in 1860 as an ornamental plant and was commonly used as decoration during the Holidays. Now it can be found in a variety of habitats that include disturbed woodlands, fields and roadsides.

Visit our Oriental Bittersweet Profile for more information on this species and report any sightings to iMapInvasives.