



Ohio Invasive Plants Council

Newsletter • Winter 2018



As 2018 begins, it is a time to plan and prepare for the new year's invasive plant control efforts. We can evaluate our successful control efforts and determine why some may not have worked well.

Each control effort teaches us something about how we can improve our effectiveness.

It has been a productive year for OIPC and we look forward to more workshops and partnerships in 2018. We held two invasive plant workshops with two new partners, completed and promoted the new brochure on alternatives to invasive plants, and coordinated with ODA on their invasive plant rules which will prohibit the sale of 38 invasive plant species beginning in 2018.

If you are looking for opportunities to help control invasive plants in natural areas, one way is to participate in the Ohio Natural Areas & Preserves Association's Stewardship Projects. See the ONAPA website at www.onapa.org for more information on the 2017 projects and the upcoming 2018 projects, which will be posted soon.

As always, we look forward to working with any of our partners to plan educational efforts. If you have any upcoming events where OIPC may participate by providing a speaker, please let us know (see our website to contact any of our Board members or send a general contact request). If you would like to host an invasive plant workshop, contact us as we are looking for locations for 2018. We are currently working on plans to hold invasive plant workshops and programs in northwest Ohio and in the Dayton area, but details are not available yet.

Help us spread the word about invasive plants; visit our website at www.oipc.info frequently! If you need a plant identified or are looking for more information about invasive plants, just contact us through our website and we will respond as soon as possible. We wish all our partners and constituents happy holidays and thank you for your support in 2017. We look forward to seeing you at the OIPC Annual Meeting , February 23.

*Jennifer L. Windus,
OIPC President & ODNR (retired)*

OIPC ANNUAL MEETING!

Friday, February 23, 2018
The Dawes Arboretum, Newark
10:00am – 3:00pm

Join us for our upcoming Annual Meeting. The keynote speakers will be Dr. Theresa Culley and Kurt Dreisilker presenting "*Spreading the Word: The Role of Public Gardens as Sentinels Against Plant Invasions.*" We will have an update on OIPC 2017 accomplishments and 2018 plans, as well as the election of new Board members. Registration and agenda details are at www.oipc.info

INFLUENCE OF AMUR HONEYSUCKLE ON HEADWATER STREAM SALAMANDER COMMUNITIES

Lonicera maackii (Amur honeysuckle) is an invasive shrub that has become a significant conservation concern for land management groups across the Midwest. This shrub thrives along disturbance-prone areas, and can have a variety of negative effects on native habitats. Amur honeysuckle thrives in riparian areas, which receive constant disturbance from elevated water levels. The impact of *L. maackii* on aquatic ecosystems is severely understudied and the impact on some aquatic organisms is just beginning to be researched. It has been shown that *L. maackii* negatively influences the macroinvertebrate community; however, little research has been done on primary predators such as the stream salamander.

Rarely seen and lying deep beneath the soil next to streams, the *Plethodontidae* (lungless) salamanders



Larval *E. cirrigera* salamander found inside the prototype. Photo, Meg Maloney

thrive. This time of year, these salamanders lie beneath the soil close to the water table for warmth. However, when the first warm rain comes after a long winter, the salamanders are incredibly active in perennial streams. This understudied amphibian is a key indicator species for stream ecosystems. In perennial, fishless streams, stream salamanders are the primary predator for the ecosystem. Because *Plethodontidae* salamanders breathe through their

skin, they are extremely sensitive to changes in their habitat. Some *Plethodontidae*, most notably the *Eurycea cirrigera*, have a long larval stage (up to 2 years) and are very selective in choosing a breeding ground to lay their eggs. This indicator species could be the key to unlocking how invasive plants are impacting stream dynamics in perennial streams. *E. cirrigera* feed on macroinvertebrates. If the macroinvertebrate community is shifting due to the introduction of invasive plants, it is likely the population of salamanders is not very strong. In addition, because these salamanders are so sensitive, if invasive plants leach phytochemicals into the stream, the salamander populations are most likely going to have a negative response. Therefore, my research focuses on studying salamander populations across a density of *L. maackii* to understand how the ecosystem as a whole is changing.



The prototype consists of a dishwashing rack lined with window mesh with tempered hardboard inside. Photo, Meg Maloney

What seemed like a straightforward question became quite difficult as I realized there are not very many methods for estimating salamander populations. Currently, visual encounter surveys or leaf packs are utilized to understand the density and richness of salamander species present in streams. However, after consulting with an Ohio EPA researcher, it was evident a new method should be established for quantifying the population of salamanders. Thus, my research took a turn as I began to develop a prototype to estimate the density of stream salamanders. This prototype consists of a

dishwashing rack lined with window mesh. Inside the dishwashing rack, tempered hardboards are stacked on each other with gravel sandwiched between the boards. This prototype is then placed in the stream, and mimics a natural environment for the salamanders. During the day, salamanders often hide from predators under large, flat rocks. This



Multiple prototypes in the stream to understand the colonization time of salamanders. Photo, Meg Maloney

prototype allows salamanders to swim into it and hide between the layers of hardboard. The prototype went through a series of trials to verify its success against other methods. At first, the prototypes were left out for a series of days to understand colonization time. After three trials, it was concluded that the salamanders do not have a preference of colonization time and the same number of salamanders will be present from 24 hours after implementation to as long as 2 weeks. In addition, we compared methods, such as the visual encounter survey and a quadrat sampling to the new prototype method. It was determined that the prototypes estimate a higher density of salamanders in streams. It is better to have a method that estimates a higher density because previous research has shown that visual encounter surveys

and quadrat sampling usually estimate lower representation of what is actually in the stream. This method was then presented to our collaborator at the Ohio EPA and will be published as a method that researchers can use to study stream salamanders.

Using this established method, a series of prototypes were placed along the gradient of *L. maackii* at three stream sites. One stream site had minimal Amur honeysuckle, one site had a moderate amount, and one had a high amount present. Sampling events were taken during each season and the prototype was left out for 3 days each time. Due to the early rains in January, there was plenty of activity in the prototypes in late winter and early spring. It was determined that more trials need to take place in order to verify if there is a negative relationship between salamanders and *L. maackii*. However, this research has produced a new method to study salamanders that researchers can use to estimate populations of salamanders.

While more research needs to go into the relationship between stream salamanders and invasive honeysuckle, this project has set some major milestones. The production of a concrete method that researchers can use to study an important indicator species is exciting. Moreover, this research is just beginning to unlock the impact of Amur honeysuckle on aquatic communities; more questions are coming with each new discovery.

Meg Maloney, University of Dayton & OIPC 2017 Grant Recipient

LITTLE BLUESTEM: A BEAUTIFUL NATIVE LANDSCAPE GRASS

The North American native grass, *Schizachyrium scoparium*, commonly known as little bluestem and also known as “bunch grass”, “beard grass”, and “creeping bluestem” has become a wonderful cross-over ornamental grass from native restorations to residential and commercial landscapes. Little bluestem is a tough and adaptable grass that grows 1-3 feet tall. It has a high tolerance to drought conditions, soil infertility, and is adaptable to most pH soil conditions. The foliage of this natural beauty is available in many shades of

blue in the nursery and landscape industry. All of the cultivars, as well as the native species, develop spectacular displays of red and copper tones in the fall that can persist through the winter season. This



grass is a standout in both commercial and residential landscapes as well as in native prairies and meadows. It provides a natural food source, shelter, and nesting habitat for wildlife.

Requirements for maintaining little bluestem are simple: full sun exposure, low soil fertility, and dry to droughty soil conditions. Tolerance of acidic to alkaline soils makes this one of the most adaptable grasses available to the nursery and native plant industry. Little bluestem has a hardiness range from zones 3-9, found naturally from Canada to the lower Midwest. Little bluestem has no known pests and is deer resistant. Quick establishment makes it a perfect choice for banks and slopes on restoration projects as well as many landscape projects.

Some of the more popular cultivars available within the trade are:

‘Standing Ovation’ is a sturdy, upright little bluestem. Plants have attractive fine-textured blue-green foliage, introduced by North Creek Nurseries of Landenberg, PA.



‘Munchkin’ is a smaller little bluestem 28”-32” tall with steel blue foliage selected by Donovan Boehm of Boehm’s Garden Center.

‘Prairie Blues’ is a seedling selection with very attractive intense blue foliage.

With the invasive characteristics of some of the non-native ornamental grasses such as *Miscanthus*

sinensis, little bluestem should be considered as a superior choice for the landscape.

David Listerman, Listerman and Associates, Inc. & OIPC Board

UPDATE ON THE NEW ODA INVASIVE PLANT RULES

The hearing for the Ohio Department of Agriculture (ODA) Invasive Plant Rules was held at the ODA office on November 30. There were 3 people providing testimony, Jennifer Windus (OIPC), Theresa Culley (OIPC and University of Cincinnati), and Anthony Sasson (The Nature Conservancy). All three were supportive of the rules; there was no opposition. The Ohio Joint Committee on Agency Rule Review (JCARR) hearing was held on December 11 and the rules were approved. The new rules became effective January 7, 2018; see the ODA website or the OIPC website for more details and the final wording of the rules, including the initial list of 38 invasive plants. ODA will be forming an Invasive Plant Advisory Committee early in 2018.

A SEARCH FOR HYBRID LOOSESTRIFE

Purple loosestrife (*Lythrum salicaria*) has long been considered a major wetland invader in Eastern North America. Most states, including Ohio, began restricting its sale in the 1970s and ‘80s. However, because gardeners prize loosestrife’s beautiful purple spikes, horticulturists quickly found a replacement: the closely related *Lythrum virgatum* (European wand loosestrife). Though initially lauded as a sterile alternative to *L. salicaria*, several researchers (including some associated with OIPC!) have demonstrated *L. virgatum*’s ability to cross with

L. salicaria. This is a problem because hybridization has been linked to increased invasiveness in some species, including cattail and Japanese knotweed. *L. virgatum* is one of the species on the recent ODA list of illegal invasive plants, but has hybridization between the two loosestrife species already left its mark on natural populations? If so, are there predictable patterns of hybridization across the landscape?

To address these questions, last summer we drove around Ohio to sample populations of purple loosestrife growing in natural habitats. We collected over 600 individuals from 65 populations across a wide geographic range (Fig. 1). To determine hybrids in our samples, we are assessing genetics and morphology. Hybrids, having characteristics of both

parents, would display genetic markers from each parent, as well as intermediate morphological traits.

Genetic data are forthcoming, but we have obtained some interesting morphological results. The two loosestrife species differ in the ratio of calyx appendage to lobe (Fig. 2). Larger ratios are more typical of *L. salicaria*, while *L. virgatum* is characterized by smaller ratios, and hybrids are predicted to display intermediate ratios.

Based on the 113 individuals for which we have measurements, it is clear that our field collections captured wide morphological variation. Fig. 3 shows concentrations of more *L. salicaria*-like ratios near major waterways like Lake Erie and the Ohio River. This suggests introgression of *L. virgatum* in these areas may be less pronounced. In contrast, hybrids may be more common in urban areas like Columbus, where we saw a concentration of more *L. virgatum*-like ratios. Plots of ratio by latitude and watershed support these observations, showing decreased

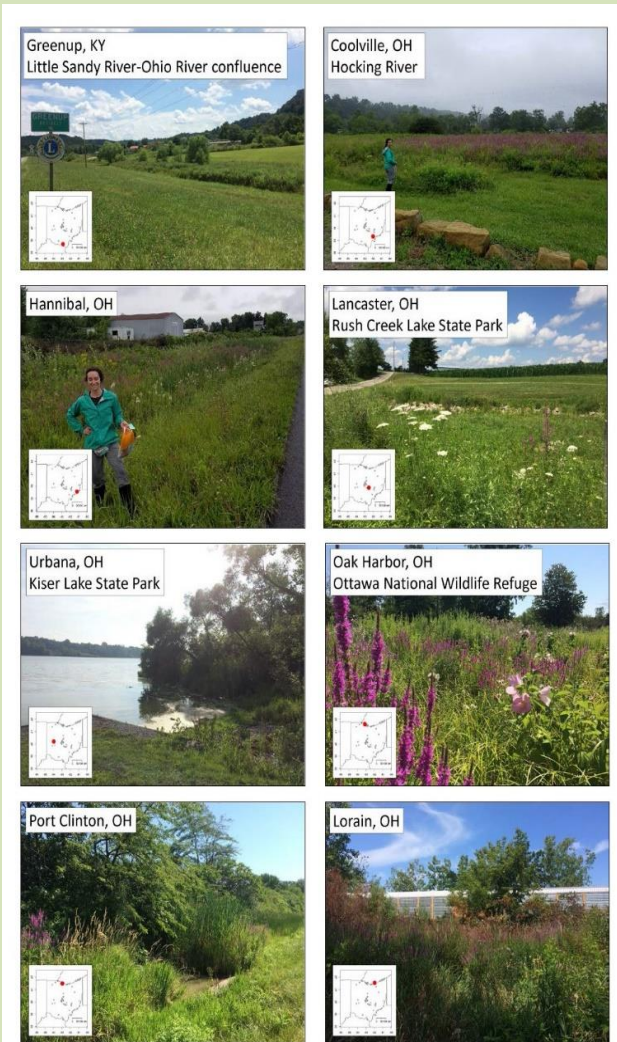


Fig. 1. Examples of loosestrife populations sampled during summer 2017. Habitats varied widely, from more natural riparian and lakeside habitats to urban roadside ditches.

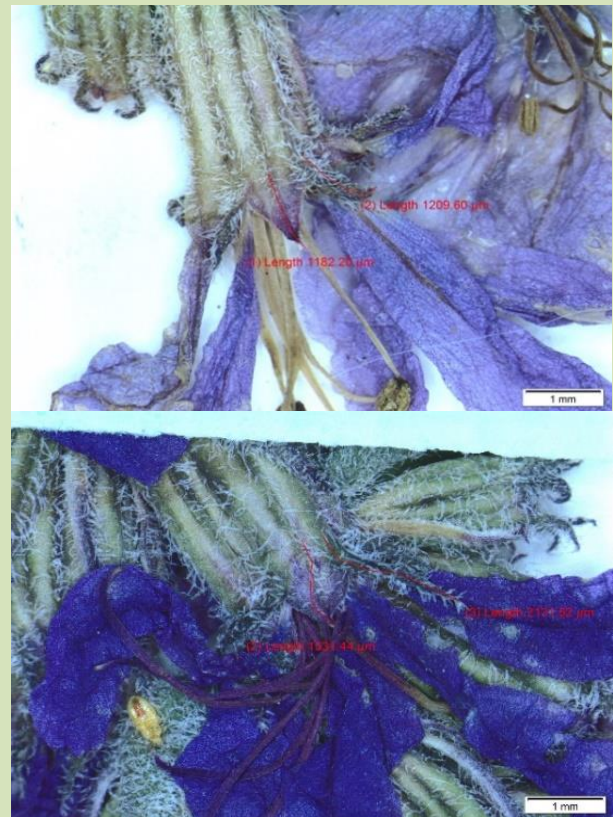


Fig. 2. Loosestrife floral morphology. Top specimen has calyx appendages and calyx lobes roughly equal in length, more similar to *L. virgatum*. Bottom specimen has calyx appendages 2x as long as lobes, consistent with *L. salicaria*.

ratios at mid-latitudes and in Central Ohio watersheds. To better test these apparent geographic patterns, we plan to measure ratios for more of our samples from these three key regions: Lake Erie, the Ohio River, and Columbus.

Detecting wide variation in morphology suggests our samples capture a great deal of loosestrife diversity.

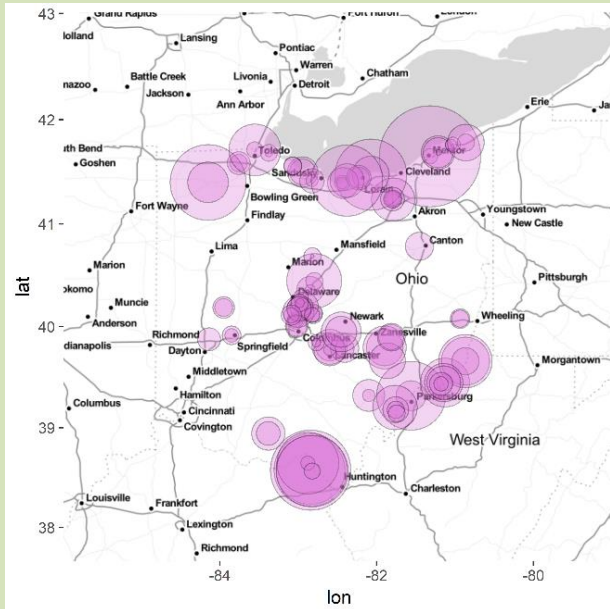


Fig. 3. Map of loosestrife samples with points scaled by ratio of calyx appendage to lobe, a morphological feature useful for distinguishing hybrids.

However, morphological traits can vary based on the environment. Genetic data provide a more consistent and quantitative method of separating loosestrife hybrids. Our ongoing genetic work will better describe the extent and patterns of loosestrife hybridization in Ohio.

*Kali Mattingly, 2017 OIPC Grant Recipient
Ohio State University*

OIPC RECEIVES “Outstanding Project Award”

In 2012, when Cheryl Coon was the OIPC President, OIPC received an Ohio Environmental Education Fund (OEEF) grant from the Ohio EPA entitled “Invasive Plant Education for Ohio Citizens” for \$4,615. Using these grant funds in 2012-2013, OIPC presented three invasive plant workshops, developed a new brochure, poster, and 18 invasive plant factsheets (available on the OIPC website). In

addition, OIPC distributed invasive plant information at a variety of events and updated the OIPC website with more resources. Every 3-4 years, OEPA and a team of educators coordinated by the Environmental Education Council of Ohio (EECO), evaluate the projects that have been funded by the OEEF and select the best to be honored with OEEF Outstanding Project Awards.

This summer, OIPC received a beautiful glass plaque in the mail (see photo) which stated that OIPC had received an OEEF Outstanding Project Award in 2016. We had not been previously



notified, so this was an exciting surprise to us! After contacting OEPA, we were able to get more details on the award. There were 11 OEEF Outstanding Project Awards honoring past recipients of OEEF grants that were determined in March 2017. For more details on these awards, visit the OEPA website at:

www.epa.ohio.gov/OutstandingProjects2016.

We are pleased and grateful to receive this award and wanted to share the good news with you. We hope to apply for another OEEF grant in 2018.

*Jennifer L. Windus,
OIPC President & ODNR (retired)*

ASIAN BITTERSWEET: A STRANGLEHOLD ON THE LANDSCAPE

Around the holidays we see striking garland swags and other decorations with brightly colored berries adorning front doors, tables and walls when most other colors are lost in the dormant season. One of the most sought after plants for this winter décor also happens to be a destructive invasive vine that tends to slowly strangle the native vegetation on which it climbs. Asian bittersweet (*Celastrus orbiculatus*), also known as Oriental bittersweet, is

still planted and collected for ornamental purposes. Clusters of three chambered yellow-orange fruit split open to reveal three bright orange-red seeds inside. The fruit clusters are arranged in leaf axils along the stem, creating a festive and eye-catching display. This conspicuous feature makes this plant easy to



locate during the dormant season. Another identification feature of Asian bittersweet are the tiny lenticels along the stem that assist with gas exchange, appearing as round thickened openings or bumps on the otherwise smooth stem. When in leaf, the vine has rounded alternate leaves that are finely toothed and up to 4 inches in length.

Introduced from Asia in 1860, the vine is often found in abandoned home-sites that are now along streams, edge habitat or in woodland openings. Left unmanaged, the vine creeps around trees and shrubs, twining upward, and eventually constricting the flow of nutrients and girdling the host. Often before this happens, damage is caused by the drag of tangled vine that can weigh down lower branches as well as canopies, or even result in trees being topped during high windstorms when the supportive trees give way and snap under the pressure. For this reason, it is wise to remove and stump treat the vine wherever it is encountered.

Perhaps you have heard of the native vining cousin, American bittersweet (*Celastrus scandens*), and you are not certain if what you have found is the invasive species, Asian bittersweet (*Celastrus orbiculatus*). While the American bittersweet also boasts the colorful capsules, this plant is far less frequently encountered. Look for this feature of the native vine: fruits only bearing on the very end of the stem, with

no leaves arising between the terminal cluster. The invasive Asian bittersweet will present multiple clusters of fruits along the stem, rather than on the end alone. If flowers or fruit are not present, the Asian bittersweet leaves tend to be more obovate or rounded and the American bittersweet leaves are more elliptical. Another good clue: if the vine is growing prolifically or covering a large area, the likelihood is that you have found the invasive Asian bittersweet.

If you have this aggressive vine in your landscape the next question is how best to get rid of it! Cutting vines at the base and hand pulling can be effective if the population is small and you are willing to repeat the cutting as the plant inevitably re-sprouts until the roots are exhausted. Chemical foliar application of herbicides (for example, Roundup, AquaNeat, and Rodeo) can kill the vine, especially if an adjuvant is added to increase effectiveness. For the best results, treatments should be made in the late fall before the plant goes dormant, which also helps avoid impacts on nearby native vegetation.

If removal can't be completed for an entire area, be sure to mark the vine with flagging tape so you can easily relocate the stand for follow-up treatments. Lastly, avoid taking this plant home as an ornamental or wreath, and share this information with others, to help spread the word – not the plant!

Shana Byrd, OIPC Vice President & The Dawes Arboretum

ANOTHER NEW OIPC BROCHURE COMING SOON!

OIPC is in the process of redesigning its general brochure which promotes OIPC and explains the issue of invasive plants, along with what OIPC does. This will replace an earlier version and is being redesigned by Mary Ann Webster of Spoonbill Designs. We hope to have it available sometime in February. Watch for more details on the OIPC website.

ALTERNATIVES FOR INVASIVE PLANTS IN OHIO A Guide for Landscaping and Habitat Restoration

The Ohio Invasive Plants Council (OIPC) partnered with Dawes Arboretum and the Ohio Nursery and Landscape Association (ONLA) to develop a new brochure this year which describes 15 invasive plants and provides suggestions of 3-4 alternatives to plant in their place.



The recommended alternatives are good choices for replacing invasives in landscaping, as well as adjacent natural habitat, such as woods, grasslands, and wetlands.

While we have a limited quantity of brochures, we want to make them available for any relevant invasive plant workshops or presentations, suitable conferences and events, and other landscaping or gardening programs. If you wish to obtain brochures, send your request to our website at www.oipc.info. The brochure can also be downloaded from our website as a PDF. If you request more than 25 brochures, we ask that you make a donation to help cover our mailing costs and contribute to reprinting the brochure.

*Jennifer L. Windus,
OIPC President and ODNR (retired)*

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OIPC is an eligible non-profit in the charitable program AmazonSmile! Amazon's foundation donates 0.5% of qualifying purchases to an organization you select. Use this address to go directly to the page that benefits OIPC; smile.amazon.com/OIPC or start at smile.amazon.com and you will be prompted to select a charity. There is no cost to you since Amazon makes the donation on your behalf. Save the link and use it every time you shop with Amazon!



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Visit: KrogerCommunityRewards.com sign in or create a new account. Select OIPC and click on "enroll." The codes for OIPC are:
#23916 Cincinnati Region (includes Dayton and Lima)
#47319 Great Lakes / Columbus region (rest of Ohio)

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