



# Ohio Invasive Plants Council

## Newsletter • Summer 2020



### PRESIDENT'S CORNER

As the COVID-19 pandemic continues, we have seen its effects in many ways on our lives and invasive plants. Certainly it has limited public and private land managers

from conducting invasive plant control efforts for the past 3-4 months. Many land managers have been working at home and unable to conduct needed control methods for species such as garlic mustard, Dame's rocket, lesser celandine, and other spring species. Hopefully that situation is slowly changing so that managers and volunteers can get back in the field, while practicing safe social distancing. While the nursery and landscaping business had a slow start due to the pandemic, many saw banner sales in May and into June as people used gardening as a safe outdoor activity.

The OIPC Board completed its revised 5-year strategic plan for 2020-2024. The Board also worked with the Assessment Team to revise the Assessment Protocol (see article in this issue). The revised 5-year plan and Assessment Protocol will be posted on the website soon. We are also working on a new section for our website which expands on our alternatives brochure by offering more suggestions for alternatives to invasives when replacing them in your landscaping or habitat restoration. We hope to have this new page on our website in the next few months. Finally, we are working on a new, up-to-date OIPC display to be used at events around the state.

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](http://www.onapa.org) for information on 2020 projects. These projects are currently limited to small groups of 10 people or less during the COVID-19 pandemic. Many local metro parks, conservancies, park districts, state, and federal natural resource protection agencies around the state may also have opportunities for volunteers to control invasive plants. Each one of us can help to address invasive plant challenges on a local level, even during the coronavirus pandemic.

Help us spread the word about invasive plants and visit our website at [www.oipc.info](http://www.oipc.info). We have unfortunately had to cut back on invasive plant workshops this year. We will be doing more outreach by utilizing our website so please visit it often to look for information on invasive plants, invasive plant control options, and also for inspiring ideas on native plants to add to your outdoor projects. We hope to add some new materials to the website, including a featured invasive plant, or a potentially invasive plant, each month. If you need a plant identified or are looking for more information on invasive plants, just contact us through our website and we will respond as soon as possible. If you would like to recommend a plant to be assessed for invasiveness by the OIPC Assessment Team, let us know and we can add it to the list for evaluation. Finally, if you would like to contribute an article to our newsletter about invasive plants, let us know as we are always looking for new material.

*Jennifer L. Windus, OIPC President*

## OIPC REVISING ITS ASSESSMENT PROTOCOL

The OIPC Board has been working with the OIPC Assessment Team since last fall to make some needed revisions to the protocol. Since the protocol was first completed in 2013, it has been occasionally updated with minor changes by the Assessment Team, and approved by the Board. Now eight years later, we are at a time where the majority of widely recognized problematic plants have been assessed and there is a need to revisit the use of the original Step I and Step II portions of the protocol. The Board asked the Assessment Team to specifically review some of the questions, the scoring, and the terminology used for the categories of assessed plants. For example, one concern was that some species in the middle category (previously called *Pending Further Review*) are likely invasive but are not scoring high enough due to lack of sufficient data for questions that are based on the scientific literature. An example of this is princess tree (*Paulownia tomentosa*). It is considered highly invasive in most southern states, is certainly problematic in Ohio, and has been increasing in points with each reassessment, but still remains in the middle category. Another concern was that some species, such as giant hogweed (*Heracleum mantegazzianum*), are clearly invasive but are also considered so highly toxic to humans that individual plants are removed rapidly when discovered (resulting in lower than expected values for some questions dealing with the species distribution). Consequently, the Assessment Team has now revised some of the questions and scoring after careful deliberation. We also decided to call the middle category, *Potentially Invasive*, since most of the species in this category are clearly problematic and would likely be scored as invasive as more data becomes available. The changes will be posted on the website soon. More species which have been evaluated in the past year will also be posted on the website for the 6-month review period. We welcome your comments on these changes.

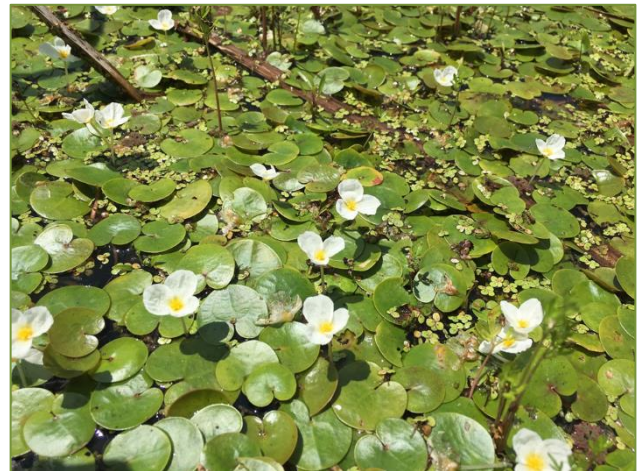
*Jennifer Windus, OIPC President and Theresa Culley, University of Cincinnati & Assessment Team Chair*

## OHIO'S AQUATIC INVASIONS

Several aquatic invasive plants have recently gained attention since they have been discovered in waterbodies we care about in Ohio: European frogbit (*Hydrocharis morsus-ranae*) blankets mud flats and shallow waters of Magee Marsh and Old Woman Creek, yellow floating heart (*Nymphoides peltata*) grows in Mentor Marsh and in parks near Columbus, and Hydrilla (*Hydrilla verticillata*) causes headaches at Pymatuning State Park and along the Ohio River.

These three invaders can spread quickly and into unexpected locations, including to private waterbodies. You can help Ohio land and water managers by looking for and reporting these three aquatic invaders early.

European frogbit has exploded in western Ohio in the past 10 years. Originally brought to a research farm in Ottawa Canada, the miniature lily pads have



European frogbit (*Hydrocharis morsus-ranae*) in Metzger Marsh. Photo by Alexandria Walker

escaped and now grow in shallow, still waters of wetlands and rivers. The free-floating lily pads cast profound shade on the plants below and overlap so thickly it can reduce the oxygen available in the water. European frogbit spreads by fragmentation and by small leaf buds called turions. High lake levels have pushed the plant into new habitats too. Look for leaves about the size of a half dollar that are

green and heart shaped, white flowers with three petals, and roots that float.

Yellow floating heart, another plant with lily pads, has been moving around Columbus and Cleveland. It also shades out other plants with floating leaves that have wavy edges. Where yellow floating heart grows, it creates a messy network of stems and underwater runners called stolons. It can jam boat propellers, restrict fishing and swimming, and also reduce water oxygen below a thick canopy of lily



Yellow floating heart (*Nymphoides peltata*) in Mentor, Ohio. Photo by Mark Warman

pads. The flowers are yellow with five, frilly petals. Yellow floating heart has seeds with stiff hairs like Velcro that are specifically adapted to hitch a ride on bird feathers which then spread the plant from one waterbody to another. It may show up at new sites far from any known infestation.

*Hydrilla verticillata* is one of Ohio's worst aquatic invasive plants. It grows under the water's surface, sometimes as much as one inch a day! The plant is a warrior species and out-competes nearly every other submerged aquatic plant. Hydrilla causes a multitude of headaches including jammed water control structures, restricted boating, and a reduction in biodiversity. Hydrilla has serrated leaf edges visible to the naked eye and these teeth help tell it apart from native look-a-likes. A key identifier are the tubers. These starchy roots are about the size of a thumbnail, with scales, and are buried in the sediment. Tubers can sprout repeatedly and a large tuber bank in the mud makes the plant extremely costly to remove and control once a population has



An identifying feature of *Hydrilla verticillata* is the tuber attached near the other roots. Photo by Tim Krynak

had a few years to establish. This makes early detection critical for this species.

Summer is the time to keep the heat on these three aquatic invasive plants. Help Ohio land managers by reporting aquatic invasive plants. If you suspect one of these plants is in your waterbody, take a close-up picture of the leaves and flowers. Then submit a record to Ohio Department of Natural Resources using this link [www.ohiodnr.gov/reportais](http://www.ohiodnr.gov/reportais), or reach the author at [mjw1@clevelandmetroparks.com](mailto:mjw1@clevelandmetroparks.com). For more information about aquatic invasive species a good reference is Ohio's Guide to Aquatic Invasive Species. A digital version is available through Ohio Sea Grant's website <https://ohioseagrant.osu.edu>. Funding for Cleveland Metroparks aquatic invasive species detection and control program in Ohio's Lake Erie Basin is administered jointly by Ohio Department of Natural Resources and U.S. Fish and Wildlife Service via the Great Lakes Restoration Initiative Program.

*Mark Warman, Aquatic Invasive Species Project Coordinator, Cleveland Metroparks*  
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## DO NOT OPEN UNSOLICITED SEED!

Unsolicited packages of seeds that appear to originate from China or other Asian countries have been received by people throughout the United States, including Ohio residents. The types of seeds in the packages are unknown.

USDA-APHIS and ODA are asking Ohioans to:

- **NOT open, plant, compost, or throw away packages.**
- **Please visit the ODA website to get instruction on what to do with the packages.** <https://agri.ohio.gov>

Unsolicited seeds could be invasive species or noxious weeds, could introduce disease to local plants or crops, and could be toxic to livestock.

## OIPC IS SEEKING APPLICATIONS FOR RESEARCH GRANTS!

OIPC is soliciting applications for our Invasive Plants Research Grants. This grants program funds research projects on invasive plants in Ohio for amounts up to \$1,500. Projects initiated by graduate students, land managers, or amateur botanists are welcomed.

We will accept and review proposals that focus on basic biology, ecology, management, distribution, or horticultural aspects of invasive plants in Ohio. Our highest priority for funding is for proposals that address questions about potential invasive plants for which the lack of published data hinders their evaluation by the OIPC Assessment Team. In

addition, we will also prioritize proposals that directly connect to management of invasives. When the grant evaluation team reviews grant proposals, extra points are given for proposals which address these priority areas. More details about this opportunity, including invasive questions needing more information by the OIPC Assessment Team, can be found at [oipc.info](http://oipc.info).

**Applications are due no later than November 1, 2020.**

*Emily Rauschert, OIPC Research Chair, Cleveland State University, [e.rauschert@csuohio.edu](mailto:e.rauschert@csuohio.edu)*

## BEATING AROUND THE BUSH: CATERPILLAR HERBIVORES ON INVASIVE HONEYSUCKLE

Invasive Amur honeysuckle, *Lonicera maackii*, is so widespread and abundant in Ohio that you almost have to try to *not* see it everywhere you go. Old woods, young woods, open fields, abandoned parking lots, backyards; it is easily found in all of these places. Amur honeysuckle (hereafter referred to as simply honeysuckle) is such a dominant invasive shrub in many parts of Ohio that many of us have become immune to seeing it and accept it as part of the scenery. Yet, in many areas there is a desire to try to control it, which typically entails cutting stems and spraying stumps. This and other methods work, but only short-term. Whether we like it or not, honeysuckle is here to stay and will remain a component of forest ecosystems in Ohio for the foreseeable future.

This raises the question, what does the invasion of honeysuckle mean for our native communities of consumers, e.g., herbivores and their enemies? The negative impacts of invasive plants like honeysuckle are manifold – they crowd out native woody plants, shade out understory herbs, alter nutrient cycling, and affect other ecosystem services. One of the biggest impacts, and likely a reason underlying invasiveness, is that invasive plants don't contribute much to native food webs. Nothing really eats them, and this gives them an advantage over native plants. This escape from natural herbivores can eventually

lead to a “green desert”, like a weed-free, Stepford wives’ approved lawn, it looks nice, but biologically it is virtually sterile. The lack of herbivores leads to a lack of predators and so on up the food chain to things “normal” people care about like birds, reptiles, and mammals.

However, honeysuckle represents a vast, competition-free resource for native herbivores if they are able to colonize it and incorporate it into their diets. Do native herbivores feed on honeysuckle? If so, what types of herbivores are colonizing honeysuckle, and how does this contribute to the larger ecological community? It’s hard to know exactly how honeysuckle will impact our forest food webs long-term, however, if we want to begin to answer this question, we need to examine if and how it is being used by native herbivores and how the honeysuckle-focused food web compares to those with native trees and shrubs.



A common generalist inch worm (*Hypagyrtis unipunctata*) on honeysuckle.

Invasive plants provide us with the rare opportunity to study the development of ecological communities and co-evolution between plants and herbivores in real-time and under real-world conditions that cannot be re-created in a lab. Caterpillars are among the most important herbivores of forest ecosystems due to their great diversity and abundance. Our research focuses on understanding the caterpillar communities on invasive plant species and the process by which they are colonized. Specifically, we want to know which and how many caterpillar species successfully feed on honeysuckle, how this community compares to what we see on other native woody plants, and how much overall

herbivory is occurring on honeysuckle relative to native plants.

We explored these questions by conducting caterpillar and herbivory surveys on three plant species: invasive Amur honeysuckle (*L. maackii*), spicebush (*Lindera benzoin*), and sugar maple saplings (*Acer saccharum*). These are three dominant woody plant species in our area of the Miami Valley that share similar habitats and that are exposed to similar caterpillar fauna.

To examine the caterpillar communities on honeysuckle and compare it to natives, we conducted quantitative surveys on each plant species at multiple sites in Southwest Ohio. We used a beat sheet and a stick to sample caterpillars along transects located in both forest edges and in forest interiors. To identify the caterpillars and assess if they could actually develop on the plants on which



Sarah collecting caterpillars off of the honeysuckle with a beat sheet.

they were found, we brought them back to the lab and reared them on their host plants. We also estimated herbivory levels on each plant species with herbivory transects in which we collected branches from randomly selected individual plants and recorded the estimated percent damage for

each leaf and the type of damage (e.g., chewing, scraping, leaf mines, etc.).

We collected and reared over 1000 caterpillars during the 2019 field season, a third of them from honeysuckle. Those on honeysuckle comprised



Sarah checking containers with pupae of caterpillars collected from invasive honeysuckles and other plants.

nearly 60 different species - a remarkable and unexpected diversity for an invasive plant! We also found that the caterpillar community on honeysuckle did not differ significantly in either the abundance or diversity of caterpillar species compared to the two native plants surveyed. Most of the caterpillars we found on honeysuckle were generalist caterpillars that feed on many woody plant species, and most of these belonged to the “inch worm” family Geometridae. For example, many readers are likely familiar with the fall cankerworm, *Alsophila pometaria*, an extremely common spring caterpillar that is usually spotted hanging from leaves on a silk line. In addition, we collected a large number of generalist caterpillars in the family Noctuidae, of which cutworms belong. The third most abundant group of caterpillars we collected belong to the family Erebidae, which includes many hairy caterpillars such as woolly bears and hickory tussock moths. A number of species in this family overwinter as caterpillars. Because honeysuckle leafs out earlier and its leaves senesce later than most other shrubs and trees, it is often eaten by eretid caterpillars in the early spring and late fall when little else is available. In addition to the many generalists, we found a few specialist caterpillars on honeysuckle. One of the most notable was larvae of the snowberry clearwing (or “bee

moth”), *Hemaris diffinis* (Sphingidae), which feeds on native *Lonicera* species and other related plants.



A specialist caterpillar on honeysuckle and related plants, the snowberry clearwing (*Hemaris diffinis*).

The average amount of leaf herbivory measured on honeysuckle in the field was about 4.5%, significantly lower than herbivory levels observed on our two ecologically similar, native species (around 7%). However, this level is not outside the range experienced by some native trees and it was considerably higher than estimated in a previous study about a decade ago. This could be the result of more native species integrating honeysuckle into their diet over time. However, it may also be the result of insect herbivores having a particularly good year. We need to continue to survey caterpillars and herbivory levels over multiple years to obtain a better picture of the caterpillar communities and if they are changing over time.

The introduction and spread of honeysuckle represent just one of many “natural experiments” of plant invasion occurring in Ohio. We have also started to survey other abundant invasive woody plants, such as autumn olive (*Elaeagnus umbellata*),

in order to examine if there are patterns in the colonization of invasive shrubs by native herbivores and to compare caterpillar communities among them. We are also looking at the possibility that caterpillars using honeysuckle may benefit from lower parasitism and predation, which may encourage colonization of this novel plant. Invasive plants undoubtedly disrupt ecosystems at multiple levels. However, they also provide us with an opportunity to study how ecological communities are formed and how evolutionary adaptation may take place when communities of herbivores are faced with novel plant species. In the end, study of these systems may help us manage invasive species so that they more quickly become integrated into local food webs, eroding their competitive advantage over native plant species and helping to sustain the diverse insect herbivores, predators, and parasites that are essential components of forest food webs.

*Sarah T. Workman and John Stireman, Wright State University, Dayton, OH*

## 2 EASY WAYS TO SUPPORT OIPC!



### Support OIPC when you shop at Amazon.com!

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](https://smile.amazon.com/OIPC) or start at [smile.amazon.com](https://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!



### Kroger Community Rewards

Use your Kroger Plus card to help OIPC grow. For your continued support you must enroll annually so be sure to check if your enrollment has expired. Visit: [KrogerCommunityRewards.com](https://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)

**OIPC Thanks You for Your Support!**

*The Ohio Invasive Plants Council coordinates statewide efforts and direction to address the threats of invasive species to Ohio's ecosystems and economy by providing leadership and promoting stewardship, education, research, and information exchange.*



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