



Ohio Invasive Plants Council

Newsletter • April 2016



PRESIDENT'S CORNER

Happy Spring! This is a good time to control invasive herbaceous plants, such as garlic mustard, lesser celandine, and teasel, especially as

they start greening up. While you enjoy the spring wildflowers, make note of the invasive plants and remove them before they take over!

OIPC just hosted its fifth Research Conference on February 11th at the Nationwide & Ohio Farm Bureau 4-H Center in Columbus. With over 240 people attending, 20 posters, and 15 sponsors, we were very pleased with the attendance and support. See article by Jenny Finfera for more details.

OIPC announced the five recipients of our grants program at the Conference. We are happy to be able to fund five student research projects this year due to generous support from the Ohio Natural Areas & Preserves Association and the Cincinnati Wildflower Preservation Society. See article by Jean Burn for more details.

Dr. Theresa Culley and her 4-person assessment team continue to make great progress on the assessment of invasive plants. We expect to release the 2015 list of assessed plants sometime soon for public review. Two educational workshops are planned for this year. We are already working on one with ODNR Division of Natural Areas & Preserves and Forestry to highlight invasive plant control and educational efforts in progress by these two Divisions.

At the Conference and Annual Meeting on February 11th, three Board members were re-

elected (Carrie Morrow, Jenny Finfera, and myself) and one new Board member was elected; Mark Shelton from Willoway Nurseries, representing the nursery industry. We welcome Mark to the Board as he has been in the nursery industry for 30 years, has been involved with ONLA, and is interested in learning more about invasive plants.

Be sure to explore the OIPC website at www.oipc.info to enjoy its new format and some new information. Delores Cole has graciously taken on management of the website for OIPC and we are very grateful for her expertise and creativity. She also helped us with the Conference registration and program.

We are busy working on a new OIPC brochure using grant funds from The Columbus Foundation. It will be developed in cooperation with Dawes Arboretum and will focus on alternatives for invasive landscaping plants, such as Callery pear, tartarian honeysuckle, and lesser celandine. Completion of the brochure is expected later this year.

If you are looking for opportunities to get outside and help control invasive plants in natural areas, one way to get involved is to participate in the Ohio Natural Areas & Preserves Association's 2016 Stewardship Projects. Twenty projects are scheduled for this year, both on weekends and weekdays. See an article in this issue for more details.

As always, we look forward to working with any of our partners this year to plan educational efforts that improve awareness of invasive plant threats in Ohio! If you have upcoming events where OIPC may participate by providing a speaker, please let us know (see our website to contact any of our Board members).

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

being the highest score, and 66% ranking it 5 out of 5. The evaluations also indicated that opportunities for networking and education were some of the



Photo: Tim Snyder

highlights of the event. Kudos to Conference Chair Dr. Jean Burns, OIPC Board member and Case Western Reserve University faculty. We appreciate all the volunteers, sponsors, and participants who helped to make the conference such a success! For those who missed it this year, you can look forward to next year's annual meeting in early 2017 and the next OIPC research conference in 2019!

Jenny Finfera, OIPC Board & US Fish and Wildlife Service

OIPC AWARD OF RECOGNITION FOR 2015 – KEITH MANBECK

Each year since 2013, the Ohio Invasive Plants Council has recognized someone in the state who has been outstanding in the field of invasive plant control, research, or education, cooperation with OIPC, or other worthy advancement of invasive plant issues. For 2015, the Board decided to recognize one of our own Board members, Keith Manbeck, since he has contributed so much to OIPC,



even before he joined the Board in 2013. He was instrumental in our invasive plant assessment process, being a strong advocate for this project among the nursery community and stressing the need for a transparent, scientifically-based assessment process. He has been very involved with the Ohio Nursery & Landscape Association for many years, including serving as President in 2007, the point at which he started to learn more about invasive plants and work with invasive plant researchers. In part because of this unique position, he was integral in improving the relationship between OIPC and ONLA as we began the formal process of assessing plants for invasiveness in 2012. Careful coordination was needed to ensure that both organizations were in agreement on OIPC's Assessment Team and the assessment process. Since many of the species to be assessed are horticultural species, OIPC thought it was important that ONLA accept the validity of the assessments. Keith, with Willoway Nurseries at the time, not only assisted with this partnership, but agreed to join the OIPC Board in 2013 and serve as our Treasurer for two years. He was invaluable in improving coordination between the two organizations and helped our Board understand the concerns which ONLA had with our protocol and potential results. Keith now works for KAH Nurseries and serves as ONLA's Research Chair. He has also served on the Boards of the American Landscaping Association and Horticultural Research Institute. When Keith resigned from the OIPC Board in mid-2015, he was sorely missed – his cooperative spirit, strategic mind, and dry, subtle sense of humor. The OIPC Board was happy to select Keith for the 2015 Award of Recognition. Thank you, Keith!

Jennifer Windus, OIPC President & ODNR (retired)

HELP CONTROL INVASIVE PLANTS ON STATE NATURE PRESERVES – PARTNER WITH ONAPA!

The Ohio Natural Areas & Preserves Association (ONAPA) has been assisting with invasive plant control efforts on state nature preserves for the past three years. ONAPA was formed in 2012 primarily to support and encourage the efforts of the ODNR Division of Natural Areas & Preserves (DNAP). Their mission specifically states they are “dedicated to promoting, protecting and improving Ohio natural areas and preserves for educational and scientific purposes.”

As many of you know, DNAP endured a number of severe budget cuts since 2002 until finally in 2010, DNAP was transferred to the Division of Parks & Recreation with only a small staff remaining, primarily the preserve managers. Currently, the 6



preserve managers are doing their very best to maintain the preserves, but there is a lot of work to be done on more than 135 preserves in order to maintain high-quality plant communities and many rare species. With limited staff and resources and significant habitat management to be done, ONAPA is filling a critical role by lobbying for statewide support both with the general public and the Ohio General Assembly, organizing volunteers to monitor and conduct management on preserves, and establish local friends’ groups for preserves around the state.

In 2015, ONAPA coordinated eleven volunteer projects on nature preserves to control invasive plants. In 2016, ONAPA has planned 20 stewardship projects, some of which are on weekdays. The first project this year was at Milford Center Prairie, a



natural area designated in cooperation with Dayton Power & Light, where a high-quality remnant prairie occurs in the powerline right-of-way. Fifteen

volunteers worked to dig common teasel in the prairie to preserve its native

diversity. If you are interested in helping on any of these projects or participating in other ONAPA activities, please visit the ONAPA website at www.onapa.org for the project schedule and to register in advance.

Thanks to ONAPA for being one of the sponsors of OIPC’s Research Conference and for contributing to OIPC’s research grants program!

Jennifer Windus, OIPC President & ONAPA Vice-president, ODNR (retired)

OIPC AWARDS FIVE STUDENT RESEARCH GRANTS

The Ohio Invasive Plants Council was pleased to award five research grants this year. Thanks to all of the applicants, who wrote thoughtful proposals about important invasive plant issues in the state of Ohio The student research projects funded will cover many important topics in invasive plant research, from the effects of invasive plants on native plant

and animal communities to the mechanisms governing the success of invasives. Invasive shrubs including Amur honeysuckle (*Lonicera maackii*), burning bush (*Euonymus alatus*), and multiflora rose (*Rosa multiflora*) were a particular focus among these research projects. Also, thanks to the 2014 student research award winner, Justin Kermack, graduate student with Emily Rauschert at Cleveland State University, for his talk about lesser celandine (*Ranunculus ficaria*) at the OIPC Research Conference in February in Columbus.

This year's awardees included **Elizabeth J. Roberson**, a student of Don Cipollini at Wright State University, who will be studying the "Distribution and impacts of Burning Bush (*Euonymus alatus*) on native plants and arthropod communities in Ohio." **Kylie Martinod**, a student of David L. Gorchov at Miami University, will be studying the "Importance of an invasive shrub, Amur honeysuckle, in the diet of white-tailed deer: nutritional quality and browse rates." **Jennifer E. Murphy**, a student of Jean H. Burns at Case Western Reserve University, will be studying "Understanding the above and below-ground mechanisms governing woody shrub invasions: the role of plant soil feedbacks, seasonal growth, and physiological processes." **Eric B. Borth**, a student of Ryan W. McEwan at The University of Dayton, will be studying "Lethal and sub-lethal effects of the invasive shrub Amur honeysuckle (*Lonicera maackii*) on an aquatic organism, a field-to-lab experimental approach." **Colin G. Cope**, a student of Jean H. Burns at Case Western Reserve University, will be addressing the question "Does the interaction of activated carbon and the invasive species garlic mustard (*Alliaria petiolata*) affect arbuscular mycorrhizal fungi colonization and nutrient content of native mayapple plants (*Podophyllum peltatum*)?" Stay tuned for results of these student research projects, and more, at the next annual OIPC meeting!

A particularly big thanks to The Columbus Foundation, the Ohio Natural Areas & Preserves Association (ONAPA) and the Cincinnati Wildflower

Preservation Society (CWPS) for their generous support of the OIPC research grant program. OIPC would like to strongly encourage future grant applications from land managers and applications with an applied focus that address OIPC research priorities (<http://www.oipc.info/help-answer-research-questions.html>). Be on the lookout for a call for research proposals for fall 2016!

Jean H. Burns, OIPC Board & Case Western Reserve University

NATIVE SHRUB HIGHLIGHT: WINTERBERRY

One of my favorite native shrubs that is too often looked over is *Ilex verticillata* or winterberry holly. It is a deciduous holly that is native to eastern North America typically found in swamps, damp thickets, low woods, and along ponds and streams. It is easily grown in medium to wet soils in full sun to part shade



however, it is adaptable to both light and heavy soils and tolerant of disturbed soils in new construction sites. With its tolerance for poorly drained soils, heavy or light soils, and ability to grow from full sun to full shade, I am surprised that it isn't more popular in homeowner landscapes.

Though this deciduous holly may seem like just another green bush through summer and fall, the winter appeal is so dramatic that it will stop people in their tracks just to look and see what is radiant in

a rather dull Ohio landscape. Bright red berries (some selections vary in oranges and yellows) in the winter are not only ornamental but provide food for wildlife once the berries soften. This can be used for seasonal indoor decorations also.

Winterberries are dioecious (separate male and female plants) and only the fertilized female flowers produce the attractive red berries that are the signature of this species. Generally one male winterberry will be sufficient for pollinating multiple female plants. The nursery industry has introduced many winterberry selections; no one was more instrumental in introducing cultivars than Robert Simpson of Vincennes, Indiana. He is credited for introducing many of the popular cultivars. His daughter Betsy Simpson carries on the family tradition at the nursery. I had an opportunity to visit the nursery and go through the original stock blocks and research blocks that Mr. Simpson planted in 1968. There were so many selections that were never introduced; seeing these spectacular 50-year old plants was an impressive display. Through his research, Mr. Simpson recorded when each female cultivar bloomed and when each male plant bloomed to make sure that the correct male pollinator plant is planted with the correct female cultivar.

Some of the more popular selections that are readily available for homeowners are highlighted below. The appropriate male pollinator, a required pairing with the female plants if berries are desired, is also listed.

Ilex verticillata 'Winter Red' (Pre#29912) 10' (Zone 4) (Simpson selection and introduction) 1995 *Gold Medal Plant Award Winner*. Foliage is darker green than most, fruiting is heavy even on young plants. Fruits are intense red, normally retaining good color long after other winterberries – often until spring. Unsurpassed for brilliance and long lasting effect. Excellent for cut branch. Male Pollinator: Southern Gentleman

Ilex verticillata 'Winter Gold' 10' (Zone 4)(Simpson selection and introduction) 2005 *Gold Medal Plant Award Winner*. This excellent plant, bearing pinkish-gold fruit, is a gold-berried sport of 'Winter Red'. Male Pollinator: Southern Gentleman

Ilex verticillata 'Sunset' 6' (Zone 4) (Simpson selection and introduction) Vigorous spreading form with heavy fruiting. Fruits are larger than 'Winter Red'. Color holds through December. Male Pollinator: Southern Gentleman

Ilex verticillata 'Stoplight' 8' (Zone 4) (Simpson selection and introduction) Northern type. Large, glossy dark red fruit to ½" colors early. Dark green foliage. (Released for trial as "Hopperton") Male Pollinator: Jim Dandy

Ilex verticillata 'Red Sprite' 4'-6' (Zone 4) the most dwarf of winterberries, with the largest fruit. Slow growing, broader than tall, bright red abundant fruits to ½" on very short stems. Leaves are broad, oval and small. (This plant has been offered for years as 'Nana' before being given a registered name.) Male Pollinators: Apollo and Jim Dandy.

Ilex verticillata x *serrata* 'Bonfire' 15' (Zone 5) (Simpson selection and introduction) A superior selection with masses of small red fruits, Coloring earlier in the fall while the leaves are still green. Makes a tall shrub to 15', with slender branches that droop with the weight of its fruit. Small plants fruit heavily. Male Pollinators: Apollo and Southern Gentleman.

Ilex verticillata 'Afterglow' 6' (Zone4) (Simpson selection and introduction) Northern type, more compact, many stemmed, medium height with smaller glossy leaves. Large fruit is orange-red to orange. Blooms early. An excellent glossy leaved, low growing shrub. Male Pollinator: Jim Dandy

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

CLEVELAND METROPARKS ASSESSES MANAGEMENT EFFECTIVENESS ON LESSER CELANDINE

Lesser Celandine (*Ficaria verna*, formerly *Ranunculus ficaria*) is a spring invasive that is prevalent in riparian corridors, and stream valleys. Each spring Cleveland Metroparks treats 100 to 250 acres of lesser celandine, however it is estimated that infestations cover 950 acres. Nearly 100% of their invasive plant management hours in April are spent



combatting this aggressive plant that outcompetes native spring wildflowers.

Land managers must find the best ways to use limited resources to combat the greatest threats to biological diversity and ecosystem

function. Often it seems that the most limited resource is the time and funding needed to measure the effects of invasive plant management strategies. One question that Cleveland Metroparks is asking is whether or not herbicide records, which are required by law to maintain, can be utilized as a component of effective monitoring. They used herbicide records of sites under consecutive treatments on lesser celandine along with a modified plant community assessment protocol to detect vegetation changes at their Rocky River Reservation.

Lesser celandine is a serious threat to spring ephemerals in the northeastern United States. It has multiple means of reproduction including seeds, tubers, and vegetative bulbils. The bulbils are the primary means of spread throughout the year and have a high probability of transport because of

flooding. Understanding the phenology of lesser celandine is key to early detection and successful treatments. Bulbils sprout in early winter and basal leaves can form during mild winters much like the one that we had this year. First year plants establish permanent tubers quickly. In northern Ohio, lesser celandine begins flowering in early spring and peaks with the early spring ephemerals. The treatments for celandine coincide with the growth of these native wildflowers putting them at high risk of damage from herbicide treatments. Lesser celandine withers completely by early June.

Systemic chemical herbicides are typically required for the successful control and eradication of lesser celandine. It may be critical to utilize an aquatic herbicide since lesser celandine is often found in wetland and riparian habitats. An aquatic glyphosate, utilized at a 1% -1.5% rate is an effective systemic herbicide that is readily available and typically used. A nonionic surfactant should also be added to the chemical mix to improve penetration through lesser celandine's waxy leaves. It is important to note that glyphosate is a nonselective herbicide therefore it will kill non-target species that receive any overspray. Mechanical digging can be an effective option for very small populations outside of riparian corridors. It is not recommended in areas where flooding is likely because the soil disturbance will increase the likelihood of remaining tubers and bulbils floating into areas that are not infested thus increasing spread.

Successful control of lesser celandine requires killing the tubers plus the prevention of viable bulbils so timing of treatments is critical. Recent research (Cardina, OSU – OARDC, unpublished) has provided clues to the phenology of lesser celandine relating the development and maturation of axillary bulbils to growing degree days, which are a measure of ambient air temperature above a baseline of 50 degrees F. The Ohio State University has an online phenological calendar that can be utilized to determine the growing degree days in your region of

Ohio. There appears to be an optimal window for treatment of lesser celandine based on growing degree days which with more research could become a key factor in management decisions and prioritizing treatments.

To analyze their lesser celandine treatment areas, Cleveland Metroparks utilized one component of “Cleveland Metroparks Plant Community Assessment Project” to monitor plots with the following treatments:

- Control, not treated for lesser celandine
- Treated with herbicide 1 year.
- Treated with herbicide 2 consecutive years.
- Treated with herbicide 3 consecutive years.
- Treated with herbicide 4 consecutive years.
- Treated with herbicide 5 consecutive years.

There were three plots for each treatment and the treatment data were utilized from historic herbicide records. The treatment period was 2009 through 2013 and the vegetative sample data were collected in 2014 before any new treatments were made.

One research finding was that the relative cover of lesser celandine decreased by about 9% for each successive year of treatment. While the cover of lesser celandine decreased, the relative cover of native species increased over 5 years. Interestingly the increase in native relative cover was most significant during years 1-4 and the increase was minimal for year 5. The number of native species increased by 3 – 4% for each successive year.

Some preliminary research conclusions and implications for stewardship stand out with this research: Understanding that we can utilize standard herbicide forms to help design research methods means that long term research can be accomplished without the necessity of recording annual field data. Knowing this, it may be wise to add a few simple record-keeping points to herbicide forms that might be useful for research, such as growing degree days, photo points, site disturbance,

cover estimates, etc. It may be possible to utilize growing degree days to determine when the most optimal time of treatment is and then to also utilize this knowledge to prioritize treatments according to severity and according to the conservation concern of a habitat. For lesser celandine it is important to have consecutive treatment strategies, but it may also be important to give some native plants time to recover, as year 5 of consecutive treatments may be



indicating. Follow-up maintenance level management is time-consuming and costly. Ideally if timing of herbicide application can be optimized and if it can be determined that infestation sites can be given breaks in yearly treatments, this will allow for time needed to treat some of the other 950 acres with lesser celandine infestations!

*Based on presentation, “Assessing Management Effectiveness of Lesser Celandine (*Ranunculus ficaria*)”; Hillmer, Schepers, Eysenbach, Lorch

LaRae Sprow, OIPC Board & Toledo Metroparks

OHIO INVASIVE PLANT ASSESSMENT PROCESS LEADS TO A NEW NATIONAL PROGRAM FOR GARDENS AND ARBORETA!

An idea that arose during recent meetings of the OIPC Invasive Plant Assessment Team has now expanded to the national stage. While discussing ornamental species being assessed for invasiveness, OIPC Assessment Team members (David Brandenburg, Rick Gardner, Dick Munson, John Cardina, and Theresa Culley) began to consider how these species behave in areas where they are most likely to escape cultivation – that is, in gardens and arboreta where woody species may individually spread or mixes of cultivars may trigger seed production, such as in *Pyrus calleryana* and *Lythrum virgatum*. Many of these gardens already closely monitor their ornamental collection, often removing non-native species if they show a tendency to spread from cultivation.

Furthermore, many of these gardens have been removing the same species but not sharing this important information with one another. For example, as Assessment Team Chair Theresa Culley visited several arboreta to talk about her Callery pear research, she learned anecdotally that many of these institutions were observing and removing the same “problematic” plant species, such as Amur corktree (*Phellodendron amurense*). In other words, these gardens have been collecting valuable information on the potential and/or actual spread from cultivation of certain non-native species that have been introduced into their ornamental collection, but up to this point, the information has remained hidden.

This issue was discussed during a September 2015 meeting of the MIPN Invasive Plants in the Trade working group, which was attended by several OIPC members. As a result, the Ornamental Plant Monitoring Program for Arboreta and Public Gardens was created. This program has been designed to bring together representatives from

botanical gardens and arboreta to compare records and ultimately identify plant accessions that show evidence of past or current spread from cultivation. Due to word of mouth alone, several arboreta and gardens have now reached out to be included – including Arnold Arboretum, Missouri Botanical Garden, and Dawes Arboretum.

Theresa Culley, OIPC Invasive Plant Assessment Team & University of Cincinnati

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