Ohio Invasive Plants Council

Newsletter • Summer 2017

PRESIDENT'S CORNER

We hope your spring included some effective invasive plant control and you are ready for more this summer! Many plants seem to be ahead of schedule this year, so it may be more difficult to plan timing for best control treatments.

OIPC's new brochure on alternatives to invasive plants is being distributed throughout the state; we are excited to share it! Our first workshop on June 2nd at The Dawes Arboretum focused on the brochure and was well-received. It was an excellent way to encourage landowners to replace invasive plants in their landscaping. The Dawes Arboretum also offered many of the species recommended as alternatives for sale at the workshop, which was added incentive. This newsletter has an article on one of the native tree alternatives, black gum.

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, particularly on what was accomplished in 2016 on state nature preserves. The 2017 projects are now published on the ONAPA website.

As always, we look forward to working with any of our partners to plan educational efforts to improve awareness of the threats of invasive plants in Ohio. We have planned 3 workshops for this year so far; see an article in this issue for more details. 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). If you would like to host an invasive plant workshop, contact us as we are looking for locations for 2017-2018.

Keep your ears and eyes open for the final comment period on invasive plant rules which will be proposed by the Ohio Department of Agriculture soon. The formal comment period will be 30 days and we will post an announcement on our website. It is important for all of us to comment, to make the rules the best they can be for controlling the sale of invasive plants in Ohio.

Help us spread the word about invasive plants and visit our website at www.oipc.info frequently! If you need a plant identified or are looking for more information, just contact us through our website and we will respond.

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

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: https://smile.amazon.com/ch/20-3589988 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!

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

We thank you for supporting us!

2017 INVASIVE PLANT WORKSHOPS

The Ohio Invasive Plants Council (OIPC) will be partnering with 3 organizations this year to offer invasive plant workshops. The first one was held on **June 2nd** from 12-3pm at The Dawes Arboretum, south of Newark. This workshop focused on the new OIPC brochure which highlights 15 invasive plants and provides 3-4 alternatives to replace them. During the workshop the 15 invasive plants and the alternatives were reviewed. There were samples of each invasive and some of the recommended


Photo by Jennifer Windus

alternative plants were onsite for sale. Attendees learned to identify the invasives through close examination of the specimens. Control methods were also discussed. This workshop was well-attended and will help landowners replace invasive plants with excellent native, or non-invasive plants.

The second workshop will be held on **August 29th**, 10am-3pm, at Gorman Nature Center in Mansfield, in cooperation with the Richland County Park District. This workshop will focus on identification of invasive plants in the region, control techniques, and alternatives to invasive plants. We hope to have some of the alternatives available for sale at this workshop as we did in the June workshop. Registration is now open at www.oipc.info


Photo by Jennifer Windus

OIPC will partner with Columbus Recreation and Parks to offer a workshop at the Park of Roses on **September 14th**, 10am-3pm. Details are being developed now and will be available on the OIPC website soon.

Jennifer Windus, OIPC President & ODNR (retired)

OIPC SEEKING APPLICATIONS FOR RESEARCH GRANTS, FALL 2017

OIPC will be soliciting applications for our Invasive Plants Research Grants in the fall of 2017. This grants program funds research projects on invasive plants in Ohio for amounts up to $1,000. Projects conducted by land managers, undergraduate or graduate students, or amateur botanists are welcomed. Proposals from land managers, especially those that demonstrate practical applications of research in the field, are particularly encouraged. We are hoping to fund research/monitoring projects which document effective control methods for Ohio invasive plants, as

well as those which address questions that the OIPC Invasive Plant Assessment Team is trying to answer.

We will consider any research/monitoring project on invasive plants in Ohio, however we have two areas of emphasis for the upcoming grants:

(1) Research on management methods for invasive plants in Ohio (especially lesser celandine, Japanese knotweed, or Japanese stiltgrass).
(2) Research on topics that will facilitate completion of Invasive Plant Assessments by the OIPC Invasive Plant Assessment Team. For the current list of these questions, see http://www.oipc.info/help-answer-research-questions.html. When the grant evaluation team reviews grant proposals extra points are given for proposals which address these questions.

Be on the lookout for more details about this opportunity in early fall 2017 at www.oipc.info . **Applications will be due no later than November 1, 2017.**

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

A NATIVE LANDSCAPE TREE, *Nyssa sylvatica*

Nyssa sylvatica is commonly referred to as Black Tupelo, Black Gum, Sour Gum, Peperidge and Beetlebung. This native tree is in the Nyssacaea Family and is found from Maine to Florida and Texas to Illinois, therefore growing through hardiness zones 3 to 9. It is one of our most beautiful native trees. Nyssa has alternate leaves that are a dark glossy green with an oblong shape. The bark is dark gray with pronounced ridges. The tree can reach 30 to 50 feet tall and 20 to 30 feet wide. The tree is somewhat arrowhead shaped when young and can become broadly oval when mature. The flowers are not showy but they produce an oblong drupe black-blue fruit that is readily eaten by a variety of birds and mammals.


Photo by Julie Makin

The most outstanding feature of Nyssa is that it may have the best and greatest fall color of any tree. The leaves maintain their glossy coating through fall color change and the colors can range from fluorescent yellow to orange-scarlet and sometimes purple. The two Black Gum trees in my parents' front yard were consistently scarlet-red over the years that I observed them.


Photo by Julie Makin

The tree does not have any major disease or insect issues. At one time it was considered difficult to transplant because of its long main taproot, but with container production *Nyssa sylvatica* can be moved fairly easily.

This tree has very heavy hard wood that is cross grained. Because of this, Nyssa is very difficult to split when dry. It has been used to make pulleys and other items that required tough wood, including the Beetle, a type of mallet used to pound bungs into barrels. Thus, the name from the northeast: the Beetlebung tree.

Mark Shelton, OIPC Board & Willoway Nurseries Inc.

WHAT ARE INVASIVE PEAR TREES AND WHAT SHOULD BE DONE ABOUT THEM?

If you have been driving along the Ohio interstates in mid to late March, you may have noticed an abundance of blooming trees with their white blossoms standing out in stark contrast to the rest of the drab landscape. Although these beautiful trees may signal the appearance of spring, they harbor a deeper, darker side. These trees are

relatively recent arrivals to our region. They are rapidly taking over many disturbed sites and natural areas, creating dense thickets that are difficult to remove as they edge out all other plant species. Many of these wild trees produce thorny spurs along their branches and emit a fetid odor when in bloom creating undesirable experiences for outdoor enthusiasts. The trees are most appropriately known as wild Callery pears, belonging to the Chinese pear species *Pyrus calleryana.* They are now recognized as invasive in Ohio and several surrounding states. While many people either love or hate these wild trees, few people realize that they themselves may be partially responsible for their spread.


Photo by Theresa Culley

This tree was originally imported into the United States long ago with the very best of intentions. In the early 1920s, the fruit industry in the Pacific Northwest began to suffer huge losses when a bacterial infection started to spread and decimate fruit groves of the edible French pear, *Pyrus communis* (Bartlett pears, for example). In an urgent effort to stem the destruction of these valued fruit trees, the USDA wanted to breed resistance into *P. communis* so they commissioned several plant explorers to travel to China to find a related resistant species. One of the Chinese species targeted was *Pyrus calleryana*, a tree used by the local Chinese for wood and its tough, marble-sized fruits were boiled and consumed as food. In China, *P. calleryana* typically occurred as isolated trees scattered across the landscape, so USDA explorers had to spend copious amounts of time painstakingly locating and collecting the small fruit. Seeds were sent back to the U.S. and planted in fields at opposite ends of the country - at Corvallis, OR near the infected fruit groves and at Glenn Dale, MD at the main USDA Plant Introduction Station. As the seedlings grew, they were tested and used in breeding programs with *P. communis* and eventually became essential as rootstock for the cloned *P. communis* fruit trees.


Photo by Theresa Culley

It was not until 1952 that the ornamental value of the Callery pear was first realized. One day, John Creech, Director of the USDA Station in Glenn Dale, noticed an attractive 33-year old tree growing among the plantings of the original Chinese seeds and he thought this tree had potential as an ornamental. It had thick, glossy leaves with a nice globular growth form and more importantly, it lacked the spurs so typical of the species. Creech began to carefully propagate this tree by cloning it (see side box) and then planted out his clones in the surrounding residential neighborhood for evaluation. Creech was very pleased with the attractive trees and he thought they could be sold commercially as a cultivated variety (also known as a "cultivar") of *Pyrus calleryana.* Creech named this new cultivar 'Bradford', in honor of F. C. Bradford, a horticulturalist formerly in charge of the USDA Station. The 'Bradford' was commercially released in 1961. It quickly became one of the most popular ornamental trees in the southern and eastern U.S.
Over the years, however, home owners discovered a fatal flaw in the 'Bradford' cultivar. Because of its globular branching structure with no central leader, 'Bradford' trees tended to eventually break and self-destruct in wind and ice storms as the trees aged to about 15-25 years old. In response, plant breeders began to develop other cultivars of *Pyrus calleryana*.

Each of these cultivars consisted of genetically identical clones of an original *P. calleryana* tree, whether it was an outcrossed offspring of the original 'Bradford' tree or a new sapling grown from the original Chinese seed imported years earlier.


Photo by Theresa Culley

Over a few short years, a dizzying array of other Callery pear cultivars appeared for sale: 'Princess', 'Aristocrat', Cleveland Select', 'Autumn Braze', and 'Chanticleer' to name a few. Known collectively as the "Callery pear cultivars", these trees all belonged to the same species (*Pyrus calleryana*) but each cultivar differed from the others genetically and in visible traits such as growth form, leaf coloration, and branching structure. Thus, by the 1980s, many different Callery pear cultivars had become widely available for planting throughout the country (although sometimes they are all incorrectly referred to as the 'Bradford' pear).

So why are wild Callery pear trees now taking over our roadways and natural areas in Ohio? The answer is directly related to the explosion of popularity of the different Callery pear cultivars. Like other members of the Rosacae plant family, *P. calleryana* has a self-incompatibility system, meaning that a plant cannot pollinate itself ("it takes two to tango"). Decades ago, only 'Bradford' trees were planted, and as these were all genetically identical clones, the trees were unable to cross-fertilize and so fruits were completely absent. As different cultivars became commercially available over the decades, there were more opportunities for trees from genetically different cultivars to cross-pollinate through insect visitation, forming fruits that were ingested by birds that dispersed them to other sites.

Genetic tests of wild Callery pear trees in Ohio have confirmed that young wild trees are usually hybrids of commercial cultivars planted in nearby residential and commercial areas. Furthermore, the rootstock of an individual tree, if allowed to sprout and flower, can pollinate the upper, cloned portion of the same tree. Thus, a wild population can originate from crossing within a single commercial tree. Thus, it is incorrect to refer to wild pear trees as individual cultivars (such as "wild Bradford trees") because they are actually combinations of different cultivar and rootstock types. In short, the Callery pear cultivar planted in your front yard could easily be a parent of wild Callery pear trees appearing nearby. Thus, many of us have unwittingly become inadvertent accomplices to the proliferation of wild pear trees in our areas.

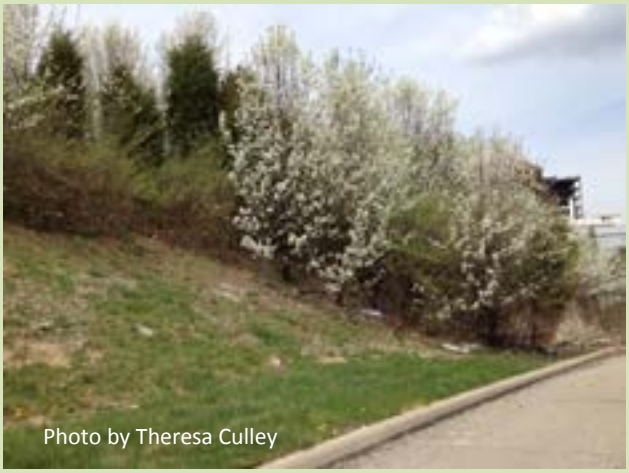


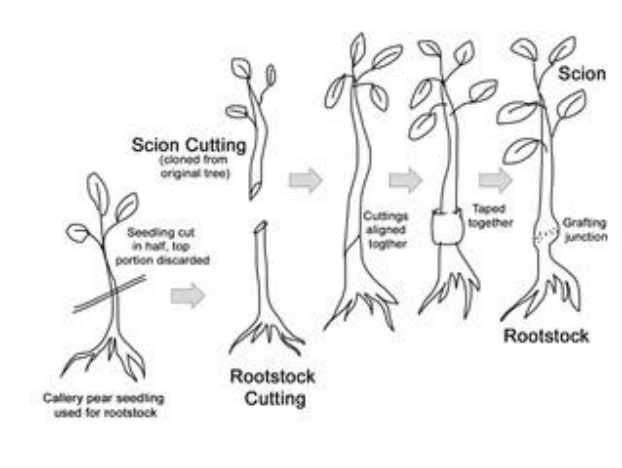
Photo by Theresa Culley

What Can I Do?

First and foremost, it is important not to plant any new Callery pear cultivar in Ohio landscapes. Ideally, existing trees should be removed, and as the trees self-destruct over time, they should be replaced with alternatives (see the recent OIPC Alternatives brochure for suggestions). Landowners who are reluctant to remove their Callery pear trees but still want to be environmentally-responsible can apply ethephon to the trees during blooming in early spring; this chemical has been shown to eliminate 95% of fruit production when sprayed on fruit trees. Second, we need to educate land owners, landscape architects, and urban planners not to plant any cultivar of the Callery pear. We also need to work with the nursery industry to identify suitable and

available alternatives they can market in order to make the switch from Callery pear practical and economically feasible for them. Although some people may argue that "the cat is out of the bag" in the case of the Callery pear, the species is still spreading northward and we need to work together now to limit its continued movement (especially given northward shifts in growing zones as the climate changes). Ultimately, we must all work together to reduce the spread of the invasive Callery pear in our Ohio natural areas.

To create trees for commercial sale that consistently display the advertised traits (such as leaf shape, bloom color, and growth form), plant propagators typically produce a cultivated variety (often referred to as a "cultivar") through cloning.



(*Propagation Through Cloning,* *image by Theresa Culley*)

In this process, each commercial tree consists of two portions: the top consists of a cut portion of the original tree (the "scion") that is then grafted onto roots ("rootstock") of a completely different genetic individual - usually of the same species, but not always. Grafting is accomplished by placing the diagonally-cut stem portions together and wrapping the junction so that the vascular systems grow together over time - this grafting junction is sometimes visible in commercial individuals as a swollen line towards the base of the tree. Consequently, all individuals of one cultivar, such as 'Bradford', are genetically identical to one another above the graft point but they vary genetically below the graft. Thus, clonal propagation of Callery pear cultivars creates different groups of genetically different pears.

Theresa M. Culley, OIPC Plant List Assessment Team Chair & University of Cincinnati, Department of Biological Sciences

NEW BROCHURE AVAILABLE NOW:

Alternatives for Invasive Plants in Ohio – A Guide for Landscaping and Habitat Restoration

The Ohio Invasive Plants Council (OIPC) partnered with The Dawes Arboretum and the Ohio Nursery and Landscape Association (ONLA) to develop a new brochure which describes 15 invasive plants and provides suggestions of 3-4 alternatives to plant in their place. Both The Dawes Arboretum and ONLA provided guidance on the alternatives, to ensure they are acceptable, non-invasive choices that are available in the nursery market. Dawes also helped with the graphic design and layout of the brochure.

The recommended alternatives are good choices for replacing invasives in landscaping, as well as adjacent natural habitat, such as woods, grasslands, and wetlands. As more landowners become interested in removing invasive plants from their landscaping and their property, they often need advice about what species are appropriate to plant instead. This brochure should reach a wide audience of gardeners, landscapers, land managers, and property owners. The full-color, 12-panel brochure

is funded by a 2015 grant from The Dr. Thelma I. Schoonover Fund of The Columbus Foundation.

While we have a limited quantity of brochures, we want to make them available for any 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.

Jennifer Windus, OIPC President & ODNR (retired)

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