ONAPA NEWS

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INSIDE THIS ISSUE

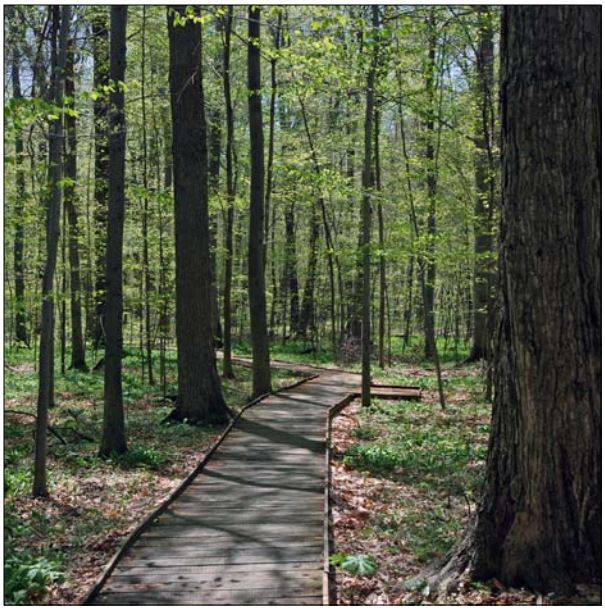
Fowler Woods: tragic tale of Ohio preserve shows challenges facing natural areas

By Dick Moseley

Fifty years ago, I was contacted by Jack Basinger, the Service Forester for Richland County who had recently been asked by the Fowler Family to evaluate the timber on the property as the family was planning to sell the property. After Jack inspected the 80 acres of mature timber on the property, he determined that this forest had never been cut and should be preserved. He believed that this was a fine example of the original forest of this region. He called me to look at this area to determine whether it should become a preserve of the newly created Natural Areas Program of the Department of Natural Resources.

After his call, I met him on site and as we walked the woods we viewed the magnificent mature trees. There was no evidence of tree cutting—no stumps or double trunked trees as a result of stump sprouting. I agreed that this forest was representative of the original Beech-Maple Swamp forest community typical of the region and should be preserved.

We were fortunate that after passing through several hands, this farm was purchased by Chester and Hettie Fowler on November 10, 1917. It is to the Fowlers, who resided on the property until 1962, that we owe the existence of this preserve. Chester and Hettie loved and protected the woods during their many years of ownership, allowing the woods to remain untouched by the saw or axe. Later, their descendants and heirs repeatedly declined continually more attractive offers from timber buyers. The 80 forested acres of the property contained a potential yield of well over one million board feet of timber, according to Basinger.



Boardwalk trail protects both visitor and preserve.

Thanks to Dayton area Senator Clara Weisenborn, who not only sponsored the Natural Areas Act but also inserted $400,000 in the Department's Capital Improvement budget, preserves could be purchased for the new program. With this funding, we were able to purchase the 133.5-acre farm from the Fowler family for $74,000 on September 24, 1971.

Fowler Woods became the first area purchased with these funds and was dedicated as a State Nature Preserve May 21, 1973. Since it was late fall

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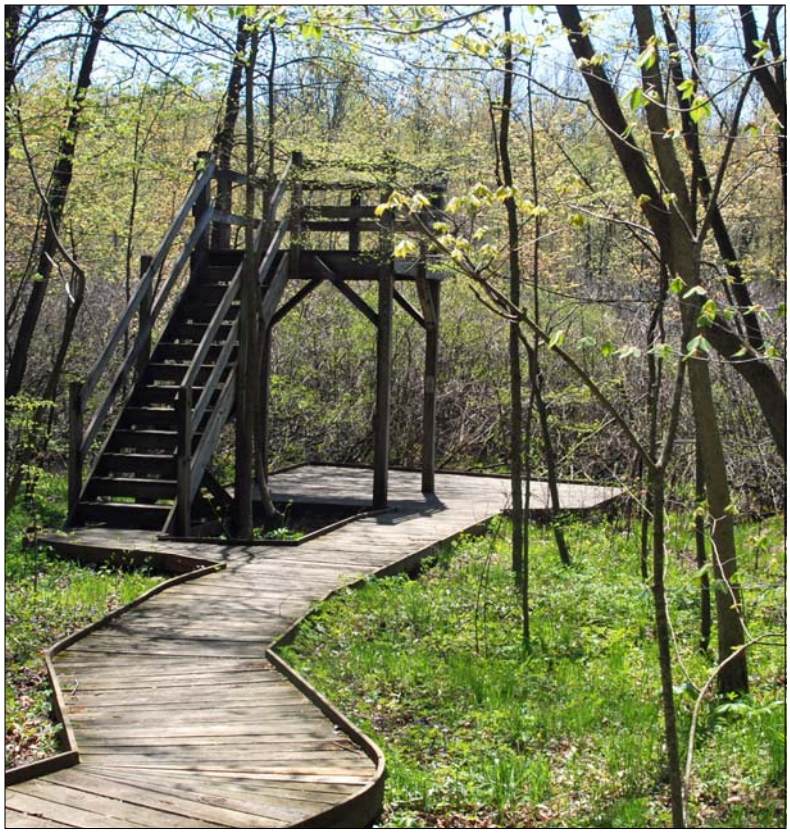
Landfill and the emerald ash borer have taken a toll

when I first visited the site, it wasn't until the next spring that I really learned the significance of the area. It is by far one of the most beautiful wildflower areas in the state. The entire woods are covered with a carpet of spring wildflowers. Another characteristic of a woods that has no disturbance due to cutting are few or no open areas without flowers. The preserve has perhaps the best stand of marsh marigold (*Caltha palustris*) that I have seen and greets the visitor with a golden hue as you begin to enter the wetland section of the woods on the boardwalk. The area is known to have 198 species of wildflowers, 14 species of ferns and 58 species of trees and shrubs.

Photos by Guy Denny

Marsh marigold carpets the wetlands in the spring.

Unfortunately, over the years two things have happened that have adversely affected the preserve. First, construction of the Noble Road Landfill began in the early 1990's and was opened in 1997, much to the dismay of the Division of Natural Areas and Preserves. When it was first proposed, the Division opposed the location of this regional facility that is permitted to handle 6,000 tons of waste per day. However, this 430-acre facility which is 1000 feet away from the preserve boundary was approved by the EPA and has been in operation since its opening. This facility created two major problems affecting the experience of the visitor—beeping noise of equipment when backing in the landfill and trash blowing into the preserve on windy days, particularly plastic bags which litter the area. It is no longer the quiet, peaceful place that it once was when acquired.



An observation deck rises into the tree canopy, part of the original boardwalk and unscathed by time or falling timber.

The second tragedy and perhaps the most damaging was the invasion of the Emerald Ash Borer (*Agrilus planipennis*) into the preserve. This green buprestid beetle arrived probably on wooden packing materials from China in the Detroit area in 2002. Although there were attempts to eradicate it in Michigan, the beetles moved south into Ohio and spread across the state, killing the ash trees which is the food source of the larvae. They feed on the inner bark and cambium of the trees and disrupt the transportation of nutrients and water to the trees. As a result of them reaching Fowler Woods, all of the mature ash have been killed on the preserve. This drastically changed the character of the forest since the ash dominated the high ground with the beech and maple.

DNAP began having ash trees cut in the fall of 2013, much to my dismay and that of the ONAPA Board Members. This action was deemed necessary "for visitor safety" but at this point the beetles had not begun to do much damage and this seemed unwarranted, especially since this woods had never been cut before. While it is reasonable public policy to remove dead trees from areas subject to intense use, such as picnic areas, campgrounds, roadsides, or where structures are threatened, such a policy is inappropriate in state nature preserves where visitors are in very low densities. Although visitors could be

Boardwalk damage from deadfalls of ash receive a helping hand from ONAPA volunteers working with DNAP to make temporary repairs.

Photo by Jennifer Windus

injured or even killed from a falling branch or a dead tree in any forest, the probability of that happening is extremely remote; it certainly has never happened in a state nature preserve where visitors tend to be few in numbers, mobile, and less likely to be present during periods of high winds.

As a preserve, it would have been better to let Mother Nature take its course and study the changes in the forest as a result of the beetle infestation. Dead trees play an ecologically important role in any woodland. The endangered Indiana Bat (*Myotis sodalis*) routinely roosts in exfoliating bark of dying trees and many other animals use dead or dying trees as food sources and for dens, especially the red-headed and pileated woodpeckers, raccoons, squirrels and wood ducks.

The ONAPA Scientific Advisory Committee sent a letter objecting to the cutting of these old growth native trees in State Nature Preserves. The Committee recommended that the Department consider rather than cutting further trees and destroying the very features visitors come to see at Fowler Woods, that ODNR should take the same approach at state nature preserves as is used at Hocking Hills State Park to warn of the danger of walking off trail with cliffs present. That is, to erect conspicuous signs warning visitors about the inherent danger of falling trees in this forest setting due to the Emerald Ash Borer damage. Such a sign would certainly make visitors aware of the potential dangers and leave it up to them to decide their course of action without negatively impacting the natural character of the nature preserve.

As a result, the Division closed the mature woods portion of the preserve to visitors for safety reasons following our letter, remaining closed for close to six years. In late 2017, the Division cut the remaining standing dead ash near the boardwalk. Many fell on it, causing extensive damage to the walkway. The preserve could not be reopened until the very large fallen trees across the boardwalk were removed and the boardwalk repaired. The Division has been delaying work on the boardwalk pending award of a grant to replace the whole boardwalk trail.

ONAPA recently wrote a letter to the Department requesting that the trees be removed from the boardwalk and

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April is Native Plant Month-plan a visit

Fowler Woods features many of Ohio's spring ephemerals

Spring blooms in Fowler Woods — Top row (left to right): phlox, toad trillium, large white trillium, wild geranium, Dutchman's breeches

Bottom row (left to right): dwarf ginseng, marsh marigold, squirrel corn, trout lily

Carpet of 'marsh-gold' lights up Fowler Woods in April

By Guy Denny

It is such a welcome site to walk the boardwalk at Fowler Woods State Nature Preserve in mid to late April and come across the streamlets and wet depressions awash in the bright, almost fluorescent, yellow colors emanating from the extensive colony of marsh marigolds in full bloom. This is one of the largest and most impressive colonies of marsh marigolds found anywhere in the state. Although most hikers might mistake the radiant yellow flowers to be coming from the petals of this wetland species, marsh marigold (*Caltha palustris*) is a member of the buttercup family (*Ranunculaceae*), and like many members of the buttercup family, it has no petals.

Rather, its colorful petal-like sepals function as petals to attract pollinators. Sepals on most other plants are directly below and contiguous to the petals. They are typically green, somewhat inconspicuous, and leaf-like. There are exceptions, of course, such as with orchids and lilies where the petals and sepals are essentially the same color and quite showy, collectively referred to as "tepals."

Photo by Guy Denny

Marsh marigold thrives in swamp wetlands of Fowler Woods.

The colony of marsh marigolds is comprised of several hundred individual roundish clumps of plants with sprawling kidney-shaped to heart-shaped dark green leaves. Emerging from the basal cluster of leaves are somewhat succulent hollow stems topped with the showy yellow flowers rising above the leaves. Each flower which is about 1 to 1 ½ inch wide is comprised of usually five bright yellow sepals, with a central cluster of numerous bushy yellow stamens providing an ample supply of both pollen and nectar for pollinators, mostly small bees and hoverflies.

In spite of having the common name "marigold," marsh marigolds are not related to marigolds, which are in the aster family (*Asteraceae*). The common name "marigold" comes from the Anglo-Saxon word meaning "marsh-gold," which seems quite appropriate for this species. The genus name *Caltha* is Latin for the "marsh marigold," or a strong-smelling yellow flower. However, *caltha* is derived from the old Greek *kalathos* meaning a "vase-shaped basket or cup." The latter definition is supposedly in reference to the upturned petal-like sepals of marsh marigold that form a shallow cup. Another very common name for this species is "cowslip." This name may come from the story that these plants grow on hummocks in wet muck where cows often slipped on them on their way to a stream or other source of drinking water.

The specific epithet *palustris* comes from the Latin *palustre* meaning "marshy." This too is quite appropriate since marsh marigolds are obligate wetland plants found in marshes, swamps, wet woods, along slow flowing streams, and growing in just about any wet mucky organic soil. In North America, marsh marigolds occur from the Aleutians, through Alaska, across all of Canada, southward around the Great Lakes states, and then further south through the mountains of the Carolinas finally terminating in Tennessee. Marsh marigolds are circumboreal, which means the very same species that grow right here in Ohio are also native to both northern Europe and Asia.

The leaves of marsh marigold have been used as a potherb for generations, but only with great care since marsh marigold, along with other members of the buttercup family, contain the toxin *protoanemonin*. All parts of the plant's, uncooked leaves and flower buds, contain a pale yellow oily glycoside called *ranunculin* which breaks down when the plant is damaged and releases glucose and the poison protoanemonin. Protoanemonin is a toxic irritant volatile oil created whenever the plant is chewed or otherwise bruised or injured. Just touching the damaged plant and getting the juices on the skin may cause blistering or inflammation. Ingesting quantities of the plant may cause convulsions, burning of the throat, vomiting, dizziness, fainting and in rare severe cases, even acute hepatitis, jaundice or paralysis. All parts of the raw plants are poisonous for human consumption as well as poisonous to grazing livestock. Fortunately, this poisonous ranunculin glycoside can be removed, but only by boiling the plant in no less than two changes of water, with probable loss of vitamins as well. If boiled correctly, it can be served as a potherb with butter and/or vinegar or even with tomato sauce and cheese. Sticking with spinach would be a lot safer and provide more nutrition.

Marsh marigold has also been called "capers." Once the immature flower buds have been boiled for 10 minutes in two changes of water, they can be pickled in hot vinegar or pickle juice and eaten, tasting like capers. Native Americans reportedly used this plant to treat various ailments: a tea made from marsh marigold roots and maple sugar was used as cough syrup which later was also adopted by European settlers in New England. To remove warts, a drop of the caustic juice was squeezed out of the stem on to the wart until it disappeared. The boiled and mashed roots were applied to sores. The Iroquois are said to have made an infusion of smashed roots that was then taken to vomit in order to break the spell of a love charm. Several woodland Indian peoples cooked and ate the leaves of marsh marigold as greens. The yellow flowers were reportedly also used to dye yarn by early settlers.

Marsh marigold is not only a natural treasure around the globe, but one of the very best places to observe it is at Fowler Woods State Nature Preserve in Richland County.

Butterweed moving north into Ohio

Photo by Guy Denny

Butterweed

By Guy Denny

In spring of last year, many of us at ONAPA were surprised to see a new invasive species make what appeared to be its first appearance within the forested wetlands of Fowler Woods State Nature Preserve in Richland County. This new invader was yellowtop also known as butterweed (*Packera glabella*) formally known as *Senecio gabellus*, one of many species of ragworts.

The genus name honors Canadian botanist John G. Packer who between 1958 and 1988 was an instructor at the University of Alberta and worked extensively on the flora of Alberta. The specific epithet *glabella* comes from the Latin *glaber* meaning "smooth or hairless," in reference to this plants smooth virtually hairless, succulent stem. The distinctive hollow stem of this annual flower stands about 1-3 foot tall and is topped with a cluster of very bright, showy yellow flowers hence the common names "yellowtop" and "butterweed."

The alternating pinnatifid stem leaves with deeply cut rounded lobes and teeth, the bright yellow ray and disk flowers, and especially the fleshy hollow unbranched single stem, all make this species very easy to identify when flowering. Winter rosettes can be a little more challenging to identify.

Butterweed is a good example of a species native to the U.S., but not native to Ohio. It is native to central and southeastern North America. It ranges from east Texas to Florida northward up the Mississippi River Valley drainage, now into Ohio and southern Michigan. It appears to still be rapidly expanding its range northward.

According to the *Seventh Catalog of the Vascular Plants of Ohio* by Tom S. Cooperrider, Allison W. Cusick and John T. Kartesz, butterweed is naturalized in Ohio, which means it is a plant from outside of the state but now thoroughly established in Ohio being able to reproduce and spread on its own. Butterweed's appearance in Ohio started out slowly as it became established in southwestern Ohio many years ago. With its range expansion, it has shown very invasive tendencies and should be controlled in high-quality natural areas.

However, within the last 15 to 20 years, populations have exploded across the state. As the populations exploded, butterweed made its presences known to all by first blanketing no-till agriculture fields in huge acreage of bright yellow flowers stretching almost as far as the eye can see. The bare unplowed agriculture fields provided an ideal nursey bed for multitudes of extremely viable wind dispersed seeds.

Butterweed is a winter annual which turns extensive agriculture fields into strikingly beautiful blankets of yellow flowers in early spring before fields are plowed and planted. Typically, these fields aren't plowed and prepared for spring planting until after butterweed has dispersed vast quantities of its seeds across the landscape, continuing its range expansion.

At first butterweed growing in Ohio seemed to only invade no-till agriculture fields, but eventually it started showing up elsewhere. Throughout its normal southern range, butterweed is found growing on just about any low wet ground including wet woods, along streams, and along roadside ditches, in addition to moist to wet bare agriculture fields.

Now well established in Ohio, butterweed colonies are showing up anywhere it can seed into low wet ground throughout our state, including ephemeral pools in Fowler Woods State Nature Preserve. The problem is that butterweed produces massive quantities of seeds with very high germination rates, so high that it produces a dense ground cover and extensive colonies that crowd out and shade out rarer native wetland species such as golden saxifrage (*Chrysosplenium americanum*), swamp saxifrage (*Saxifraga pennsylvanica*), yellow water-crowfoot (*Ranunculus flabellaris*) and cardinal-flower (*Lobelia cardinalis*).

Efforts will continue to keep this invasive species from taking over the wetlands within Fowler Woods, but it may prove to be an uphill battle. Nevertheless, it is a battle well worth the effort in the fight to preserve natural diversity in our state.

Fowler Woods shines in spring

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the trail repaired so visitors can again revel in the beauty of this area during this spring wildflower season. We have offered to assist in this endeavor and are working with the preserve manager to prepare the area for visitation this spring. On January 30, 2020 an ONAPA work crew and DNAP staff began working on the repair of the boardwalk and accomplished a great deal but there is more work to be done to get it ready for this spring.

It is our hope that you will come and enjoy this nature preserve, as you will be superbly impressed by the spring flora in this high-quality woods.

The 187-acre preserve is located about six miles northwest of Olivesburg on Olivesburg-Fitchville Road, just south of the intersection of Noble Road in Richland County.

Save the date:

ONAPA Annual Meeting

Saturday, August 22, 2020

West Woods Nature Center
9465 Kinsman Road
Novelty, Ohio
(Geauga County)

Winter projects improve preserves, link partners






Photos by Jennifer Windus

Snow reminds volunteers it is winter: (Clockwise from top) Fowler Woods team repairs boardwalk; Lakeside Daisy preserve gets chainsaw and chipper work; Richfield Heritage Preserve group tackles amur cork tree; areas "opened" at Brinkhaven Oak Barrens.

By Jennifer Windus

ONAPA volunteers continue to make a difference in state nature preserves and other natural areas this winter. The Stewardship Project team scheduled nine stewardship projects for January through March, but several other types of activities have received help from our members.

Volunteers started January off at Richfield Heritage Preserve in Summit county, removing and treating an old stand of Amur cork trees, glossy buckthorn and Amur honeysuckle.

Later that month, we had a wonderful turnout during the first project scheduled at the new addition to the Lakeside Daisy preserve. Partners from DNAP, ONAPA, USFWS, Richfield Heritage Preserve, and East Harbor State Park worked in two small alvar openings, removing mostly red cedars invading the openings. By removing the woody species, the Lakeside daisy and other rare plants will have improved, more open habitat.

In Richland county, ONAPA is assisting the Fowler Woods State Nature Preserve manager with repairs to the boardwalk before the spring wildflower season arrives. At least two work days were scheduled. Repairs should be completed in time for a joint DNAP-ONAPA field trip on Saturday, April 25.

Brinkhaven Oak Barrens (Holmes) continues to receive ongoing attention in cooperation with the Killbuck Watershed Land Trust. Volunteers cleared sections in the lower part of the barrens which were growing up in sumac and hazelnut.

Myersville Fen (Summit), Mentor Marsh (Lake), Mallard Club (Lucas) and Cedar Bog (Champaign) were also on the list to receive help with woody species control.

Although Spring and Summer projects are not yet finalized as this issue goes to print, we will be posting the project list to both www.onapa.org and to our Facebook page.

Ohio's Natural Areas Act turns 50: Celebrate with a visit!

By Dick Moseley

It hardly seems possible that June 1, 2020, will be the 50th Anniversary of the Natural Areas Act which created the Ohio Natural Areas Program in the Department of Natural Resources. This legislation authorized the Department to administer a system of State Nature Preserves and to acquire, dedicate and accept the dedication of public and privately owned lands as State Nature Preserves.

It also authorized the Department to manage and protect them for educational and scientific use and for visitation by the public according to rules and regulations governing their use. At the time of its passage, this act was considered one of the strongest pieces of natural resources legislation in Ohio and was used by many other states as a model in drafting similar legislation in those states.

Today, we can be proud of the accomplishments of the program during this 50-year span. Ohio now has 136 nature preserves in the system preserving 31,183 acres of land that have saved a variety of Ohio's natural features for present and future generations to enjoy.

Let's celebrate this anniversary by visiting Ohio's bogs, fens, prairies, forests, swamps, marshes and geological features that are in the preserve system this year.

Editor's Note: When the Natural Areas Act of 1970 was passed into law, then ODNR Director Fred E. Moor placed Richard E. Moseley in charge of creating an ODNR Natural Areas Program in accordance with the mandates of this new piece of legislation. Then in 1975 when Governor James A. Rhodes created the Division of Natural Areas & Preserves, then ODNR Director Dr. Robert W. Teater appointed Richard E. Moseley as the first Chief of this new ODNR Division. It was Dick Moseley who built the Natural Areas Program from the ground up into one of the finest natural areas program in the country.

Original and current DNAP logos.

Lesser celandine is a deadly marsh marigold imposter

By Guy Denny

Sometime ago. I was told about an individual who wanted to get plants of marsh marigold for her wetland wildflower garden. A friend of hers said she had hundreds of marsh marigolds growing on her property and would be happy to allow her friend to dig a few to transplant to her wildflower garden. She moved a few plants to her property and soon learned she had been inadvertently victimized by the terribly invasive marsh marigold imposter, lesser celandine (*Ficaria verna*). Regretfully, lesser celandine has taken over her wildflower garden and beyond. She has been unable to completely exterminate this noxious non-native species from her property.

Lesser celandine is similar in appearance to our beautiful native marsh marigold, and easily mistaken for it since it occurs in similar habitat. It prefers seasonally wet or flooded sites, but not in permanently standing water. It is especially widespread in better drained soils of low-lying river flood plains. Lesser celandine blooms about the same time as marsh marigold, with bright yellow flowers, and clumps of fleshy dark green, heart-shaped leaves. Lesser celandine and marsh marigold are both in the buttercup family (*Ranunculaceae*) and until recently, lesser celandine had the scientific name of *Ranunculus ficaria*. Another common name for this species is "fig buttercup." Just like many members of the buttercup family, lesser celandine contain *protoanemonin* which is poisonous if ingested raw by humans and potentially fatal to grazing animals including cattle and horses.

Perhaps its most distinguishing characteristics separating it from marsh marigold are that its flowers have 7-13 yellow petals and usually three pale green sepals. Marsh marigold has no petals, only 5 yellow sepals. Marsh marigold has no tubers on its roots while lesser celandine has very conspicuous club-shaped, tuberous roots. The common names fig buttercup and figwort are in reference to the club-shaped root tubers that are said to somewhat resemble figs. The genus name *Ficaria* comes from the Latin *ficus*, "a fig." The specific epithet *verna* comes from the Latin meaning "of spring" which is when this plant blooms. It totally dies back in late summer.

Lesser celandine is native to Europe, Asia and North Africa. It was apparently introduced into North America some time ago as a garden plant and has since escaped cultivation and become naturalized as a non-native, extremely aggressive invasive species. It produces viable seed, but the underground root tubers and the above ground bulbils occurring in the leaf axils of some subspecies, are the primary method of propagation. Then tubers and bulbils are easily dislodged and spread by flood waters, each giving rise to new plants wherever they settle. Lesser celandine is so successful at reestablishing huge numbers on new plants that it can form large colonies blanketing many acres. More serious older infestations can blanket a river floodplain for miles. In doing so, lesser celandine out competes and displaces less vigorous native spring wildflowers as well as other native vegetation.

Lesser celandine is difficult to control, let alone eradicate, because of its ability to vegetatively spread quickly. Its tubers are resistant to chemical applications and they readily break away from the mother plant, sprouting new plants. Large, well established infestations are virtually impossible to eradicate, even with applications of a systemic herbicide. The herbicide doesn't always kill the plant and is nonselective, often killing non-targeted native species mixed in among the lesser celandine.

Lesser celandine (top, left) will carpet a flood plain. The flower of the native marsh marigold (bottom, left) is structurally different and the plant has no root tubers. Lesser celandine root tubers (right) must be completely removed to eradicate this invasive pest.

The best control method for a noxious invasive species is to catch and treat it when it first appears on site. Small infestations can be attacked by hand digging but only if no roots, tubers, or bulbils are left behind. Plant parts need to be bagged, removed from site, and disposed in such a way that they can't resprout elsewhere. Just a few widely separated clumps of plants, as well as a large monoculture of this species, can be successfully eradicated with a systemic herbicide, but only if the leaves are thoroughly saturated with a systemic herbicide, combined with a surfactant, so that the root tubers are impacted.

It is best to chemically treat these invasives in late winter through early spring before desirable native species have started to grow and before the lesser celandine flowers appear.

The bottom line is that you have to detect and eradicate this species before populations explode and get out of hand, and then follow up with regular inspections to catch any additional plants that might appear. Early detection is the key to eradication.

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