



Ohio Invasive Plants Council

Newsletter • Spring 2023



PRESIDENT'S CORNER

Happy Spring! It was a strangely mild winter so invasives, along with ticks and other insects, may have a head start in the upcoming spring and summer seasons.

It was a difficult winter to plan control projects as the weather often was problematic for using herbicides. Needless to say, the mild weather has provided opportunities to begin treating invasive plants that green up early such as garlic mustard, poison hemlock, and lesser celandine.

We are excited to be planning four workshops in 2023 with new partners in northeast, southwest, northwest, and west-central Ohio (see dates listed in this issue). We are also planning our 2023 OIPC Research Conference which will be held on October 27th in Columbus at the OSU Nationwide & Ohio Farm Bureau 4-H Center.

Be sure to join our listserv with Google Groups, oipc@googlegroups.com, if you have not already. Joining the listserv group is a great way to share information on invasive plants, spread the word on upcoming events, and ask questions.

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 information on 2023 spring-summer projects. Projects are generally scheduled on Tuesdays and Thursdays and involve control of woody species in natural areas all over the state. Many local metro parks and park districts, state and federal agencies around the state also have opportunities for volunteers to help control invasive plants. Each of us can help address invasive plant challenges on a local level.

Help us spread the word about invasive plants and visit our website at www.oipc.info frequently! We added some new materials to the website, including an invasive plant focus, or potentially invasive plant, every few months. We will be adding more information about alternatives very soon so watch for this new page. 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 or an appropriate restoration project, let us know as we are always looking for new material.

Jennifer L. Windus, OIPC President

Poison Hemlock: An Invasive Noxious Weed

Conium maculatum, also known more commonly as poison hemlock, deadly hemlock, poison parsley, spotted hemlock, European hemlock, and California or Nebraska fern, is a highly toxic, invasive plant. This plant has been classified by the Ohio Department of Agriculture as a noxious weed. It is native to Europe and western Asia, but is naturalized in almost every state in the United States. Poison hemlock was used heavily in the 1800s, marketed as a garden plant with winter interest due to its tendency to stay green year round, giving it the nick-name "winter fern".

Poison hemlock has a biennial life cycle. It grows as a low growing rosette in its first year and develops a flowering stalk the second year. Rosettes can grow to a couple feet in height, but the flowering plant can



Poison hemlock flowers look similar to Queen Anne's lace however there are multiple umbrellas per flower stalk vs. one. Photo by Ansel Oommen, Bugwood.org.

reach 6 to 10 feet. Leaves are pinnately arranged in groups of three, finely divided, and toothed around the edges. The smooth, hollow stem can help identify the plant with its reddish or purple streaks or spots. Poison hemlock has clusters of tiny, white flowers that are umbrella shaped and it blooms in late spring to early summer. The seeds are flat with ridges and vary in color from green to brown. Each year the plant can produce up to 30,000 seeds, some of which remain viable in the soil for 3 to 6 years. All parts of this plant create a distinct musty or unpleasant odor when crushed.

You can find this plant mostly in wetter habitats that have shown signs of disturbance. Common habitats where it can be found are fence lines, roadsides, pastures, ditches, streambanks, riparian woodlands and floodplains. Poison hemlock can usually be found growing in clusters because of its lack of a long distance seed dispersal mechanism. Even though it

has a high seed count, many drop in very close proximity to the parent plant. This makes it very easy for poison hemlock to take over areas of an ecosystem and out compete our native plants. Native wildlife will feed on poison hemlock, but only as a last resort, because the plant is toxic to wildlife.

Poison hemlock is in the carrot family, so it can be easily confused with Queen Anne's lace; however, a good way to tell them apart is that Queen Anne's lace has a hairy stem and lacks the purple splotches or streaks in the stem. Another difference is in the arrangement of the flower. Queen Anne's lace has a single umbrella cluster of flowers, while poison hemlock has multiple umbrellas per flowering stalk. Wild carrot, or Queen Anne's lace, will smell like a carrot and have an edible taproot when young, but poison hemlock will have an unpleasant odor and cannot be consumed safely. Other look-a-likes include cow parsley, parsnips, and yarrow. The similarities of all of these species can lead to confusion and is one of the reasons why poison hemlock can be so dangerous.



The stems of poison hemlock stem are smooth with conspicuous red splotches or stripes. This is a key feature that aids in accurate identification. Photo by Eric Coombs, Oregon Department of Agriculture, Bugwood.org.

Poison hemlock poses dangers to humans, animals, and the ecosystem. The toxic chemicals in poison hemlock can remain active even 3 years after the plant is completely dead. The level of toxicity in the alkaloid compounds can be influenced by environmental factors. Humans are susceptible to poisoning from the alkaloid toxins primarily through ingestion however in rare instances the toxins can enter the bloodstream through cuts on the skin, and through the eyes, and nose. Symptoms of poisoning include dilated pupils, decreased heart rate and dizziness. Prolonged exposure can lead to respiratory and nervous system problems and death. Ancient Greeks used poison hemlock for executions, the most famous of which was the execution of Socrates. Livestock are highly susceptible to poisoning because poison hemlock is commonly found in grazing areas and is an early greening plant.

Poison hemlock does not typically cause skin reactions when touched unless you make contact with the sap within the stem of the plant. The phototoxic chemicals present in the stem can make your skin much more sensitive to UV light, causing skin irritations such as rashes, burns, or blistering.

Poison hemlock is an aggressive invasive plant but with good management practices the plant can effectively be controlled. Management can include both mechanical and chemical control. Mowing is effective during the growing season (April through July), as long as it is completed before seed production. Multiple mows are useful to keep plant matter growing low, which reduces the amount of plant material that is available for foraging or grazing, or for humans to come in contact with. Repeated mowing also works well in depleting the plants' stored resources by forcing the reserves in the roots to be used towards putting up new growth. All mowing or cutting should be done with extreme caution as this is when the plant toxins could most easily enter the bloodstream through the eyes, nose, or accidental ingestion. If mowing near trails or other areas where people are outside, caution should be taken to close areas to prevent potential exposure. When mowing, it is important to be sure that people are not near and coming into contact with airborne plant particles. Proper personal protective equipment should be used during mechanical treatments, including long-sleeves,

gloves, long-pants, boots, eye protection and a mask to prevent the plants toxic compounds from getting into the skin, eyes, and lungs. Do not burn dead poison hemlock after mechanical removal, as the fumes can contain toxic compounds.

Chemical control using herbicides is also effective for both small and large populations. Herbicide is most effective when the plant is sprayed during the rosette stage or before the plant flowers. Poison hemlock begins to grow in very early spring and effective treatments can begin on warm days in March. Glyphosate, 2,4-D, and triclopyr, are all systemic herbicides available in home improvement or garden stores that can be used to combat poison hemlock infestations. Glyphosate is a non-selective herbicide, meaning it will affect every plant the herbicide touches. 2,4-D and triclopyr herbicides are selective, so the spray won't affect all plants that it comes in contact with. Grasses would remain, which has the benefit of not burning a hole in the vegetation, which could leave space for poison hemlock to germinate and repopulate the area. Chemical control also mitigates some of the potential health risks involved with mechanical poison hemlock removal. As with any herbicide, make sure to follow the label, use required personal protective equipment and use the appropriate concentration for the species. It is also critical to use an herbicide that is approved in aquatic habitats if spraying near water.

When controlling poison hemlock, if you are experiencing any symptoms of dizziness, reduced heart rate or trouble breathing, remove yourself from the area immediately and get medical help if necessary. Since poison hemlock is a noxious weed, it is your responsibility to control the population if it is on your property, whether it is public or private. A complete list of classified invasive and noxious weeds can be found on the Ohio Department of Agriculture's website: [ODA Invasive and Noxious Weeds](#).

Emily Uhlman, Metroparks Toledo

SAVE THE DATES !

2023 OIPC WORKSHOPS and OIPC RESEARCH CONFERENCE

July 25th - Johnny Appleseed
Metropolitan Park District headquarters
in Lima

August 8th – Greenacres Foundation,
Cincinnati

September 12th – Cedar Bog Nature
Center, Urbana

October 27st – OIPC Research
Conference, Columbus

Watch our website and listserv for more
details in the next few months.

Native Plant: Bulbous Water Hemlock

In the United States, poison hemlock (*Conium maculatum*) has become a very aggressive invasive plant. This invader belongs to the Apiaceae or parsley/carrot family and has many native replacements. This article will focus on the native bulbous water hemlock (*Cicuta bulbifera*) and the differences between the two species. Bulbous water hemlock is a native species that is found in Ohio with a predominate distribution in the northeast corner of the state trickling down into the central region. It is a wetland obligate and prefers saturated soils, so you



The flowers of bulbous water hemlock are similar to poison hemlock. Both have white flowers that grow in umbels. It is important to use a plant key when identifying plants in the Apiaceae family. Photo by Rob Routledge, Sault College, Bugwood.org.

will typically only find this species if you are spending your free time in wetland habitats.

Although these two species belong to the same family and have similar characteristics, like white flowers that are in umbels, there are some easy characteristics to distinguish them from each other. The leaves of bulbous water hemlock are compound with linear to lanceolate leaflets with large teeth decorating the side. This contrasts with the soft, feathery or fern like compound leaves of poison hemlock. Bulbous water hemlock forms tiny bulbets in the upper leaf axils of the plant which is where the Latin name *bulbifera* derives. Poison hemlock is ornately decorated with purple splotches on the



Bulbous water hemlock has very distinct bulbets that grow in the leaf axils. Photo by Rob Routledge, Sault College, Bugwood.org.



Poison hemlock has fernlike foliage. Both poison hemlock and bulbous water hemlock are toxic and no part of the plant should be ingested. Photo by Robert Vidéki, Doronicum Kft., Bugwood.org.

main stem of the plant while bulbous water hemlock lacks such characteristics. It is always important to reference a plant key when dealing with the family Apiaceae as many plants are toxic or contain photoreactive chemicals that cause blisters. Both poison hemlock and bulbous water hemlock are toxic and should not be ingested for any reason. This native hemlock species should be left to thrive in the wetland habitats it calls home so it may provide valuable nectar to pollinating insects. Certain butterfly species such as black swallowtail will host on this species and other members of this family. They have adapted to deal with the toxic self defense mechanisms of the plant. The next time you go for a walk in a quality wetland natural area, keep an eye out for bulbous water hemlock and see if you can recognize it!

Derrick Cooper, OIPC Board & The Nature Conservancy

Invaders to Natives at The Wilds

The Wilds is a unique home where Ohio wildlife and endangered exotic species exist together. The property is open to the public so that this unique experience it can be shared with the community. The Wilds sits on nearly 10,000 acres that was once farmland and forest but was overturned and surface mined from the 1940s-1980s. Parts of the landscape were restored with trees that were planted directly into the remaining soil after the surface mining. There was no top soil replacement or soil improvements done. Following the Surface Mining Control and Reclamation Act of 1977, the rest of the property was graded with cool season grasses and lakes/ponds were established for sediment runoff.

The many challenges we face at The Wilds range from poor quality soil properties to invasive species colonization. Due to these challenges, we are limited on plant diversity that will thrive in the conditions here, but we have discovered that there are species that will tolerate these soils and provide for wildlife habitat, biodiversity, and soil enrichment. One of our strategies has been the incorporation of 700 acres of tall grass prairies. These prairies provide structure, food resources, and deep roots that allow for wildlife habitat, biodiversity, grazing, and soil enrichment.

Some of the invasive species that we struggle with include autumn olive, Asian bush honeysuckles, tree-of-heaven, Japanese barberry, Japanese knotweed, privet, poison hemlock, and Japanese stiltgrass. One tool we are able to use to combat invasive species in our prairies is prescribed fire. We burn in spring and fall and with 700 acres of prairie we can do rotational burning with the goal of burning over 100 acres per year. We have also used a combination of control methods on autumn olive. We applied mechanical control with a Fecon forestry mulcher and then we followed up with an herbicide application across 46 acres of prairie. This spring, we will be replanting 33 of the 46 acres back into native prairie.

The Wilds began a “Healthy Forest, Healthy Wildlife” initiative in 2017 to focus on restoring the forests and Miller Valley wetland. Last spring we planted native shrubs and forbs in a 25 acre area where



Prescribed fire is a cost effective and ecologically important management tool that is used at The Wilds to manage the 700 acres of tallgrass prairie that was planted to reclaim the health of the land after extensive surface mining. Photo by Graham S. Jones, Columbus Zoo and Aquarium.

autumn olive was removed. The cost in forb seed was \$4,791.20 and the cost of 1,920 shrubs was \$2,945.51. This past year we also focused on 11 acres of understory heavily consumed by autumn olive and bush honeysuckle. We have dense populations of Japanese knotweed and Japanese stiltgrass in a 1.4 acre patch and tree-of-heaven in the canopy across the 11 acres. The hack-and-squirt method with 50% glyphosate was used on some of the tree-of-heaven initially but some still looked bright eyed and bushy tailed after treatment so they received a second ring with 30% triclopyr. Most of the autumn olive and bush honeysuckle was treated with a basal bark application of 5% triclopyr but the larger bushes were basal barked with a 20% triclopyr mix. The brush management on the 11 acres including grapevine, autumn olive, bush honeysuckle, and tree-of-heaven control took 154.9 hours and had a cost of \$1,913.72 in herbicide and diesel fuel.

The Japanese knotweed has had previous management using stem injections and over laying it with tarps, but we are still battling this invasive species. The Japanese knotweed was brush hog mowed in the spring and we allowed it to grow to the second node before applying a foliar application of 7% glyphosate. There was growth of this plot into the understory that could not be reached by the tractor and mower, so we used a weed eater to reach those patches. By this time, we could see that the foliar effects on the mowed area was stunted and some die off occurred but it was not as effective as we had

expected. For the area that was cut later with a weed eater, we allowed 8 weeks for regrowth and then applied a foliar application of 7% glyphosate. The difference in the results was night and day. Giving it a longer grow time seemed to allow the herbicide to impact not just the top of the plant but also the rhizomes. The herbaceous management of the Japanese knotweed and stiltgrass took 14 hours and had a cost of \$157.09.



A Fecon forestry mulcher was used to control some of the dense patches of autumn olive in both the prairie and woodland habitats at The Wilds. Photo by Graham S. Jones, Columbus Zoo and Aquarium.

We would like to recognize and thank our supporters the US Department of Agriculture Natural Resources Conservation Service (USDA, NRCS) and the Arthur and Elaine Johnson Foundation. This work could not be accomplished without their support.

Our wildlife and plants need optimal conditions to thrive. At The Wilds, the impact of mining removed this stability which is still having an impact today. Our goal is to increase biodiversity so native species are better prepared for future challenges. If we sat idle, biodiversity would be very low, but because of the restoration work that we have done, we have increased plant and animal biodiversity greatly. We hope by communicating our challenges and successes, it encourages you to continue improving the biodiversity on your property today.

Liza Butler, Restoration Ecology Associate, The Wilds.

Are You Removing Invasive Plants and Replacing Them with Natives?

OIPC is looking for articles to add to our newsletter about your experience. We want to share your story to help inspire others to redesign their landscape or remove invasives from surrounding natural areas so that they can also experience the value of replacing them with natives. Please contact us through our website if you are interested.

AN EASY WAY TO SUPPORT OIPC!



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 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)

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.



OIPC Board of Directors

Jennifer Windus, President
Gary Conley, Vice-President
Carrie Morrow, Treasurer
Derrick Cooper
Jennifer Finfera
Steve Herminghausen

Steve Hovick
David Listerman
Jennifer Mansfield
Emily Rauschert
Mark Shelton
LaRae Sprow