DATE & TIME: Thursday, June 10th, 2021, at 6:00 p.m.

LOCATION: Conference Room 2C, 2nd Floor, City Building One Donham Plaza

Join Zoom Meeting: [Zoom Meeting Link]
Meeting ID: 818 9870 1858
Passcode: 296708
Phone Information: +16465588656
ID: 80898701858#,,,*296708#

MEMBERS: Irene Earl Carolyn Keiffer Steve Lewis
Travis Bautz Adam Johnson
Ami Vitori, City Council Representative
Doris Roberts, Keep Middletown Beautiful Liaison
Alison Manning, Staff Representative

1. MEETING CALLED TO ORDER
2. ROLL CALL
3. APPROVAL OF MINUTES – March 8th, 2021, April 12th, 2021, and May 13th, 2021
4. AUDIENCE COMMENTS – RESERVED TIME (3 MINUTES PER SPEAKER)
5. OLD BUSINESS
   – Urban Forestry Topics: Tree Removal Report
   – Buckeye Yard and Garden onLine, [https://bygl.osu.edu/](https://bygl.osu.edu/)
   – General Tree Comments
6. NEW BUSINESS
   – Parks Maintenance Update – Monthly Report for April and May
   – Council Presentation Follow-Up
   – Earth/Arbor Day Follow-Up
   – Youth Baseball Discussion with Mr. Schwarber Follow Up
   – Quorum Requirements Reminder
   – Parks Master Plan Update
7. COMMENTS – RESERVED TIME (5 MIN. PER SPEAKER) Board Members, Liaisons, Council Members
8. OTHER
9. ADJOURNMENT

The next regular meeting of Park Board will be held on
Thursday, July 8th, 2021 @ 6:00 p.m.
MIDDLETOWN PARK BOARD MINUTES
March 8th, 2021

TYPE
REGULAR MEETING

PLACE
CONFERENCE ROOM 2C, 2ND FLOOR, CITY BUILDING ONE DONHAM PLAZA
ZOOM: MEETING ID: 847 6920 7722, PASSCODE: 066566

PARK BOARD MEMBERS
TRAVIS BAUTZ, IRENE EARL, ADAM JOHNSON, CAROLYN KEIFFER, STEVE LEWIS

COUNCIL REPRESENTATIVE
AMI VITORI, NOT PRESENT

LIAISONS
DORIS ROBERTS OF KEEP MIDDLETOWN BEAUTIFUL, PRESENT
ALISON MANNING CITY OF MIDDLETOWN STAFF REPRESENTATIVE, PRESENT

MEETING CALLED TO ORDER AT 7:06 P.M.

ROLL CALL:
TRAVIS BAUTZ, IRENE EARL, ADAM JOHNSON, CAROLYN KEIFFER, STEVE LEWIS

APPROVAL OF MINUTES
Mr. Johnson motioned to table the approval of the minutes from the February 1st, 2021 meeting, Dr. Keiffer seconded. None opposed. Motion passed.

INTRODUCTION OF NEW BOARD MEMBERS
Ms. Manning introduced Mr. Bautz, as the newest appointed Park Board Member. Mr. Bautz told the board about himself and his interests. He stated that he’s not a Middletown resident and is Executive Director of the MidPointe Library System and his office is in Middletown. He added that he is happy to be on the board and wants to help in any way he can. The Board welcomed Mr. Bautz, and thanked him for applying.

AUDIENCE COMMENTS
No audience comments.

The Board welcomed former Park Board member Jason Jones to the meeting. Mr. Jones was presented with a certificate of appreciation for Outstanding Community Service, signed thank you card, and gift card. Ms. Manning welcomed Mr. Jones back anytime and reminded that there were vacant non-voting liaison positions.

Ms. Earl expressed that she will miss him at the meetings. Mr. Lewis stated that he couldn’t say enough for Mr. Jones' dedication. He stated “you know, when we converted the baseball diamonds over to the soccer field, changed tree commission into park board, he got it right in the middle of the fire. He handled it so well. It may seem like little things but it's very important because his name, all our names are out there, we are appointed officials. I always appreciated Jason’s what he considered to be his lack of knowledge on some of these topics that we all deal with ourselves deal with every day in our line of work, I always appreciated that he gave a very honest view especially from a tax payer standpoint of how money was being spent or for this particular group not being spent. But I appreciate him for his friendship and I think he did an honorable job. We don't know who are going to nominate for president now, but deeply appreciate everything you’ve done”.

Ms. Manning explained that Mr. Jones has been Chairman of the Board since his second year being on the board. That Mr. Lewis was the first ever to nominate Mr. Jones, followed by Ralph Connor, and then Dr. Keiffer for every year following until last year. Dr. Keiffer stated that Mr. Jones could be the emeritus to the board.

There were no additional comments.

OLD BUSINESS
URBAN FORESTRY DISCUSSION

Tree Removal Report 2020

Ms. Manning distributed and digitally shared the current tree removal report. She noted that these were the trees removed for the year currently. She stated that since last month the only additional tree was a maple that fell into the right-of-way along Yankee Road. Dr. Keiffer noted that it was less than normal considering the windy conditions of the month and felt that was good.
Ms. Manning distributed and digitally shared a handout from the BYGL. The handouts included information about witch-hazel describing its culture, habit, flowering, fruit, and cultivars and hybrids.

Dr. Keiffer asked if the City would be planting trees this spring. Ms. Manning responded that they are postponing spring plantings. She explained that because of budget constraints less seasonal employees will be used this year. She stated that there may be an Arbor Day planting but that instead of a large spring planting she would like to try to organize a tree give-away for the community and plant an Arbor Day tree this fall. She said that she wants to be considerate of staffing capabilities and what a dry season could represent for watering responsibilities. She expressed that she wanted to keep existing and newly planted trees healthy rather than continue to plant new trees and sacrifice maintenance.

There was a short discussion about the possibility of student internship availability. Dr. Keiffer explained that if the opportunity offered hands on learning students are interested in the internship even if it is not paid, that the regional campuses put funding aside to offer up to $1000 as payment for non-paying internships. She said students would be available May to August. Ms. Manning said she would think about the opportunities that might be available with the City. Dr. Keiffer said she would write something up to distribute for review.

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Chairman and Vice Park Board Election of Dowling Park Update

Ms. Manning opened the floor for Chairman nominations. Mr. Lewis nominated Mr. Johnson, Ms. Earl seconded the motion. Mr. Johnson accepted. Dr. Keiffer moved to close nominations, Ms. Earl seconded the motion. All voted in favor of the nomination.

Ms. Manning opened the floor for Vice Chairman nominations. Mr. Johnson nominated Mr. Lewis, Dr. Keiffer seconded the motion. Mr. Lewis accepted. Ms. Earl moved to close the nominations, Ms. Earl seconded the motion. All voted in favor of the nomination.

Dr. Keiffer stated that she would be retiring from December, including from all boards.

Ms. Manning gave a friendly reminder of the requirement. She said that the ordinance can be revised if there was a desire. Ms. Roberts asked if board members could also serve as non-voting liaisons. There was a discussion about the requirements of the ordinance and charter, and possible candidates for the positions. There was a general consensus from the Board that the need of these non-voting liaisons should be reviewed and possibly removed from the ordinance.

Ms. Manning stated that her understanding was that a senior citizens service levy is due to expire, and this would that its place. She said that for better information about the levy a “City Manager Update” was posted onto social media and possibly the City’s website providing a better explanation. There were some concerns expressed about if the senior citizens levy is still needed.

Ms. Manning explained that she hopes that if there are any concerns or questions the Board could bring those forward. She explained that this location was identified as an area in need and that multiple locations were considered. Ms. Roberts asked if the Central Avenue fire station would be closed. Ms. Manning said she didn’t know any details about which fire stations would remain open, if any were to be closed, and what the staffing details are of the current fire stations. Ms. Earl asked if Dowling Park is a high-use park. Mr. Johnson said he drove by earlier and there wasn’t anyone there. Ms. Manning said that the park is used occasionally, and that the school utilizes it sometimes. That the detention basin takes up a large portion of the park. She said that none of the amenities, including the basketball court and playground, shouldn’t be impacted by the proposal. Ms. Manning said there could potentially be an improvement to the park if the fire station were to utilize some of those amenities like the basketball court.

Mr. Lewis said he felt like it was a funky piece of ground. He said the new location could be advantageous because of better access to Central Avenue. Mr. Johnson asked if the residents would have to approve the new project. Ms. Manning said the residents would have a say in the passing of the levy, but that she wasn’t sure if residents would have to approve the build. Ms. Roberts expressed concern about what happens to the vacant fire stations. Mr. Lewis said he hoped residents would request that vacant buildings be addressed. Ms. Manning said she felt some of these questions would be addressed as the levy became more of a hot topic closer to voting season. Mr. Jones said he thought it would be a good opportunity for the improvement of the park.

Non-Voting liaison requirements

Adam Johnson is the Chairman and Steve Lewis is the Vice-Chairman for 2021.

Ms. Manning shared a graphic of the potential proposed fire station location at Dowling Park. She explained to the Board that this is a potential location for a proposed fire station for Middletown. She explained that the design was supposed to impact the park minimally, and that the project is dependent on a levy that will be put on the upcoming election ballot and if it is passed. There were general questions about the additional levy. Ms. Manning stated that her understanding was that a senior citizens service levy is due to expire, and this would that its place. She said that for better information about the levy a “City Manager Update” was posted onto social media and possibly the City’s website providing a better explanation. There were some concerns expressed about if the senior citizens levy is still needed.

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Dr. Keiffer said she noticed some discussion on a neighborhood community group forum about a dog park. She asked if there was any discussion happening within the City about a dog park separate of the Parks Master Plan. Ms. Manning said that she didn’t know of any. Ms. Manning said she would be happy to discuss any questions or concerns from anyone if they wanted to reach out to the City.

Dr. Keiffer asked if there was any development of information about the landing zone discussion for Smith Park. Ms. Manning stated that the park wouldn’t be used, and she hadn’t heard any new developments.

Mr. Johnson reminded Ms. Manning about Tree Commission Academy. Ms. Manning informed the Board that she and Mr. Johnson just finished up their freshman course of Tree Commission Academy. There was a short discussion about the benefits of the activity.

Mr. Lewis welcomed Mr. Bautz and summarized a little bit of the history of the board and the City.

Ms. Earl stated that it would be beneficial to explain who Wendi VanBuren is. Ms. Manning gave a brief description of Ms. VanBuren and the relationship of the City and ODNR. Ms. Manning thanked Ms. Earl for the perspective and reminder.

Mr. Bautz offered that the library could be a distribution point for the survey and could help share the information. Dr. Keiffer asked if the library could help by placing a link on the public computers for people to access the projects website.

Mr. Johnson asked if anyone had any information about a fishing derby from Go-Fish. No one knew any information about the topic. Ms. Manning said opportunities around the Smith Park pond were being looked at as part of the Parks Master Plan.

Ms. Manning stated that board and commission training will be available soon. Ms. Manning said she wasn’t sure if it would be required but thought so, but regardless highly suggested that everyone should attend.

Mr. Lewis said he attended a council meeting and expressed concerns about how the transition of the new Park Board member was handled. He said he also expressed concern about the participation of the assigned council representative and lack of leadership of Park Board. He said he felt the mayor was taken aback by what went on and she stated she would contact him. He said after three weeks he emailed her, and she asked him to reach out the Park Board council representative. He said he would try write a list to give to Councilwoman Vitori of topics he would like to address and his expectations of the council representative.

Ms. Earl explained to Mr. Bautz that the transition was not handled professionally.

Ms. Roberts stated that after the upcoming Keep Middletown Beautiful meeting she would have more information about the upcoming Earth Day/Arbor Day celebration. She also welcomed Mr. Bautz to the board and expressed that she thought there was a great opportunity for collaboration between the City and MidPointe Library. She also asked if the meeting date and time topic could be revisited. There was a short discussion about availability and potential alternatives meeting. Ms. Manning asked if anyone would like to propose a new date or time. Mr. Lewis said he was willing to make one night a month work in his schedule, and just wanted a full quorum consistently. There was a short discussion about the virtual availability and if it would be allowed to continue through June. Ms. Manning said she would double check on the information, but she thought regardless of the ability to continue in stream virtually, she thought they would have to have three members physically present to conduct business. Mr. Bautz suggested a doodle pole, and that it might be better than throwing out ideas. Ms. Manning said she would reach out before the next meeting to get more input for potential times and dates.

Mr. Johnson motioned to adjourn, Ms. Keiffer seconded. The meeting was adjourned at 8:12 p.m.
MIDDLETOWN PARK BOARD MINUTES
April 12th, 2021

TYPE
REGULAR MEETING

PLACE
CONFERENCE ROOM 2C, 2ND FLOOR, CITY BUILDING ONE DONHAM PLAZA
ZOOM: MEETING ID: 813 6932 5130, PASSCODE: 6923

PARK BOARD MEMBERS
TRAVIS BAUTZ, IRENE EARL, ADAM JOHNSON, CAROLYN KEIFFER, STEVE LEWIS

COUNCIL REPRESENTATIVE
AMI VITORI, PRESENT

LIAISONS
DORIS ROBERTS OF KEEP MIDDLETOWN BEAUTIFUL, PRESENT
ALISON MANNING CITY OF MIDDLETOWN STAFF REPRESENTATIVE, PRESENT

MEETING CALLED TO ORDER AT 7:04 P.M.

ROLL CALL:
Absence
TRAVIS BAUTZ, IRENE EARL, ADAM JOHNSON, CAROLYN KEIFFER, STEVE LEWIS

Dr. Keiffer made a motion to excuse Mr. Lewis, Mr. Johnson seconded. Motion passed.

APPROVAL OF MINUTES
Mr. Johnson motioned to approve the minutes from the February 1st, 2021 meeting, and table the March 8th, 2021 minutes. Dr. Keiffer seconded. None opposed. Motion passed.

AUDIENCE COMMENTS
None.

OLD BUSINESS

URBAN FORESTRY DISCUSSION

Tree Removal Report 2020
Ms. Manning distributed and digitally shared the current tree removal report. Ms. Manning noted that most of the trees removed in March were removed from public rights-of-way. She explained that the high winds caused most of the damage. There were no additional questions or concerns.

Buckeye Yard and Garden onLine
Ms. Manning distributed and digitally shared a newsletter from the Bull’s Run Nature Sanctuary and Arboretum. She explained that the BYGL website was unavailable but still wanted to provide some current tree related information. She gave a brief description of the Arboretum and summarized the newsletter for the Board.

She also included a handout that included links to the Ohio Department of Natural Resources’ Urban Forestry Division and another handout the included information about Project Learning Tree, a program she and Mr. Johnson learned about in Tree Commission Academy.

Dr. Keiffer said she noticed the Earth Day/Arbor Day work day notice in the newsletter for April 17th. She asked if that was Earth Day. Ms. Manning said they have work days scheduled for both the 17th and the 24th. Dr. Keiffer asked the City would be helping with their cleanup. Ms. Manning said she would expand on that more when discussing the Earth Day/Arbor Day event later.

Tree City USA Update
Ms. Manning distributed and digitally shared a letter from the City of Montgomery. She explained that the City of Montgomery was to host the Tree City USA Awards banquet this year but cancelled due to Covid-19. She also notified board members that she spoke with Wendi VanBuren, Ohio Department of Natural Resources Division of Forestry, and has arranged to receive the awards package. She informed everyone that it was the 14th year the City has received Tree City status and its 3rd Growth Award.

General Tree Comments
Dr. Keiffer said she had heard of a new bug attacking the Norway Spruces and she would avoid planting them.

NEW BUSINESS

Parks Maintenance Update – Monthly report
Ms. Manning distributed and digitally shared the monthly report for March. Mr. Johnson asked if Douglass Park splash pad was being repaired. Ms. Manning said she thought it was being repaired but that the damage was extensive, so she didn’t know when that would be complete. Dr. Keiffer asked if the splash pad would be operational for the summer. Ms. Manning said she thought so but was unsure and she would investigate it. Dr. Keiffer asked that the City notify citizens sooner rather than later if the splash pad won’t be working.
Mr. Johnson asked if there was any additional work that could be done so that there aren't issues with the Smith Park splash pad. Ms. Manning explained that regular maintenance is already performed and felt like the issues that do and will pop-up stem from the fact that all items have a life-span and the splash pad features are just showing their age.

Ms. Manning began the discussion about the survey results. She stated that from the input and results Thursdays were available for most of the group. She stated that the second Tuesday or second Thursday of the month, were the most available. Ms. Earl asked what time frame on those days. Ms. Manning stated that the survey indicated majority were available after 5 p.m., but that Ms. Earl was the most restricted because she worked until 7 p.m. and that she was partially the deciding factor. Ms. Earl said she would have to work out her work schedule and asked how long she had left in her term. Ms. Manning said she wasn’t sure, but she could find out. Ms. Earl expressed concern about scheduling the meeting around her if she didn’t have much longer in her term. Ms. Manning said regardless of the amount left in the term the objective was to find a meeting time that everyone can easily attend. Ms. Earl asked again about the date availabilities. Ms. Manning stated that the second Tuesday, every Thursday of the month, or the last Monday and Tuesday of the month are all available. Ms. Earl expressed that the conflict is the time of the meeting and that Mondays are the most stable schedule and the other days are less consistent. Ms. Earl said she didn’t feel comfortable to have it scheduled around her. Ms. Manning asked if anyone wanted to propose a new date and time. A consensus was reached for a Thursday date. Ms. Manning asked if 5 p.m. was an easy compromise between Ms. Earl and Ms. Roberts. Ms. Earl said she couldn’t do 5 p.m. but would try to make 6 p.m. work. Dr. Keiffer made a motion to approve the new date and time of future Park Board meetings, the second Thursday at 6 p.m. every month. Mr. Bautz seconded. None opposed. Motion passed.

Ms. Manning distributed and digitally shared a draft of the presentation. She explained that Mr. Johnson would be presenting about the Tree Commission Academy and that they will be starting their sophomore courses April 21st, that Mr. Lewis will be presenting about Brood X and possibly the Earth/Arbor Day event. She asked if Ms. Roberts wanted to attend to speak about Earth/Arbor Day. Ms. Roberts said she had a prior engagement. Ms. Manning further explained that Ms. Manning would be presenting about Tree City USA. She asked if anyone had any questions or concerns about the presentation or if anyone would like to join to present a topic. Dr. Keiffer said she is free if they needed an additional presenter. She asked what time the meeting is. Ms. Manning said she thought it started at 5:30 p.m. but would verify. Mr. Bautz said he would be unable to make it due to a prior engagement.

Ms. Manning announced that based on discussions from the previous meetings that a couple Park Board representatives will attend the April 20th meeting to present a presentation and discuss a couple topics related to Park Board. She distributed and digitally shared the survey graphic used for the second Parks Master Plan survey. She explained that she thought as of the most recent Friday to the meeting that they had received 219 responses. Mr. Johnson asked if this was in addition to. Ms. Manning assured that the paving levy work will begin soon. Dr. Keiffer said she was happy to see neighbors chiming in. Ms. Manning explained that this was a separate survey and that the last survey closed with around 230 responses. She said that over 200 high schoolers responded to an abbreviated version of the first survey.

Mr. Johnson stated that a lot of residents just want their streets paved. Ms. Manning assured that the paving levy work will begin soon. She commented that they were thankful for the opportunity to submit input but that some were writing nasty comments stating that the survey was bogus, but that then some commented that the questions asked residents to rank the choices and that you shouldn’t submit more than one top answer. Dr. Keiffer said she felt that if they read it, it was clear, and she was happy to see neighbors chiming in. Ms. Manning did state that after the first day a change was made to restrict users to having to select one first choice, one second choice, one third choice, and so on. She explained that the change was made to prevent results from being skewed by users selecting all elements as the "most important" or "least important", especially if they weren't interested in the question or park.

She asked that when shared to recommend watching the presentations. She said she had received feedback from soccer user group members, expressing frustration that the City was pushing a concept onto the park without input from soccer. She explained that is not the goal and that the concepts are examples.

Mr. Bautz asked how the Parks Master Plan will be used. Ms. Manning explained that master plan would provide direction not only to council and staff but to residents as well. She said the plan will address funding, programming, design process, and so on giving a successful path of development.

She asked that everyone share as much as possible. Ms. Roberts asked if it was possible for the Middletown Police Facebook page to share. Ms. Manning said that staff has asked them to share as well. She said that many have reached out stating that they had shared including the Middletown Community Foundation and
Mr. Bautz restated that he felt it was a philosophical thing, but he understood charged to use the park if the event is opened to the park. Ms. Manning explained the park and offered again to help possible fund more programs. Ms. Manning said she felt that the City would be supportive of any programs in municipalities also require a fee. She also explained that a few years ago the City has been removed. She also explained that the event wasn’t rejected or denied form and that they were sure were the outdated form came from but that it has website and explain that the webpage for special events did have an updated form and that the City is trying to encourage residents to utilize services already provided instead of preforming the services for them.

Mr. Bautz explained that he had three talking points he wanted to discuss. The first being that his employee downloaded an outdated special event request form and it was rejected even though it was available on the City website. He said he was surprised there was a wrong form but that it had been corrected since speaking with staff.

He explained and described the story time program the MidPointe Library had applied for. He stated that it was a large program to promote literacy that was taking place all over the county and that it was the City of Middletown and Middletown only that wanted to charge a $25 special event permit fee for the Library to tell stories in the park. He said it struck him as odd that a public place would charge a public institution money to use a space for a program that’s open to the public, and that philosophically he has a concern and wanted to know if this was the best approach for the parks. He stated that there’s nothing wrong with stopping a group from going to a park and having story time so why would the City charge for another group to do it and that he would think the City would want to know about the event in advance. He said he felt like it punishes those following the rules and doesn’t think it’s right to charge for a space that should be available to the public.

Mr. Johnson asked if the event was a sanctioned event. Mr. Bautz said correct. Mr. Johnson said regardless of public versus private sector why should one be charged for an event and not another. Mr. Bautz asked why anyone is being charged to use the park if the event is opened to the park. Ms. Manning explained that part of the fees is when extra services are needed for the event. Ms. Manning apologized that there was an outdated form somewhere on the website and explain that the webpage for special events did have an updated form and that they were sure were the outdated form came from but that it has since been removed. She also explained that the event wasn’t rejected or denied but that staff just needed a correct form filled out.

Ms. Manning stated that the fee has been in place for many years and that other municipalities also require a fee. She also explained that a few years ago the City would waive the fee but that it became an issue about why some where having to pay while others were so a strict policy was adopted to not waive the fees.

Ms. Manning said she felt that the City would be supportive of any programs in the park and offered again to help possible fund more programs. There was a discussion about the permit requirements specifically about the requirement for each event versus multiple events. Ms. Manning said she would find out more information and follow up with the Board.

Councilwoman Vitori said she understood the fee was to cover administration cost and all the approvals.

Mr. Bautz restated that he felt it was a philosophical thing, but he understood Councilwoman Vitori’s explanation.

Dr. Keiffer agreed that $25 for the program is reasonable but not for each event date. Ms. Manning explained again that it was her understanding that it wouldn’t be for each event date but that she would verify.

Doris asked if it would be the same fee amount for a person that wanted to close an entire block for a block party. Ms. Manning explained that the fee would still be $25 but would include additional fees as stated at the bottom of the application.
There was a short discussion about flexibility of the dates and the annual renewal requirements. Ms. Manning stated that she would get more clarification about the permit and asked if there were any other comments or questions about the topic. There were none.

**COMMENTS – BOARD MEMBERS, LIAISONS, COUNCILMEMBERS**

Mr. Johnson had no comments, questions or concerns.

Ms. Earl had no comments, questions or concerns.

Dr. Keiffer had no comments, questions or concerns.

Mr. Bautz announced that the MidPointe Library system will be offering shredding services. Saturday, May 1st between 9 a.m. to 11 a.m. in Middletown and Saturday May 8th, 1 p.m. to 3 p.m., in West Chester. Ms. Manning asked if he would like the City to help promote the event. Mr. Bautz said he would send a graphic to be shared.

Councilwoman Vitori offered a possible resource partnership for recreation programming.

There was a short discussion about what programming means. Ms. Manning explained the design and scheduling of a program or activity, not only active but also passive in nature.

Ms. Manning stated that the next meeting would be May 13th at 6 p.m. in Conference Room 2C.

**OTHER**

None.

**ADJOURN**

Mr. Bautz motioned to adjourn, Dr. Keiffer seconded. The meeting was adjourned at 8:11 p.m.

__________________________  ________________
Board Member                Alison Manning –Secretary
## Tree Removal Report

<table>
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<tr>
<th>Location</th>
<th>Type of Tree</th>
<th>Qty. of Trees Removed</th>
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<tr>
<td>Douglass Park</td>
<td>Mulberry, Elm</td>
<td>2</td>
</tr>
<tr>
<td>Sherman Park</td>
<td>Maple</td>
<td>1</td>
</tr>
<tr>
<td>*Yankee Road</td>
<td>Maple</td>
<td>1</td>
</tr>
<tr>
<td>Smith Park</td>
<td>Mulberry</td>
<td>2</td>
</tr>
<tr>
<td>Old Jefferson school lot</td>
<td>Mulberry, Ash</td>
<td>2</td>
</tr>
<tr>
<td>*727 Eleventh Ave.</td>
<td>Maple</td>
<td>1</td>
</tr>
<tr>
<td>*Long Lane</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>*Brent Dr. at Hood Ave.</td>
<td>Maple</td>
<td>1</td>
</tr>
<tr>
<td>*Breiel median</td>
<td>Honeylocust</td>
<td>1</td>
</tr>
<tr>
<td>*dumped at 920 N. Univ.</td>
<td>Spruce</td>
<td>1</td>
</tr>
<tr>
<td>Armbruster Nature Preserve</td>
<td>Maple, Ash, Hickory, Elm</td>
<td>12</td>
</tr>
<tr>
<td>*South University</td>
<td></td>
<td>1</td>
</tr>
<tr>
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<td>Sweetgum</td>
<td>1</td>
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<tr>
<td><strong>Total Removed Right-of-Way</strong></td>
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*fell into right of way

Updated: 4/27/21
Poison Hemlock and Wild Parsnip: Control Them Now!

Authors: Joe Boggs (node/51)
Published on: April 6, 2021

https://bygl.osu.edu/sites/default/files/field/image/1%20Poison%20Hemlock%20and%20Wild%20Parsnip%207.jpg
Poison hemlock (*Conium maculatum* L.) and wild parsnip (*Pastinaca sativa* L.) are combined in this report because these invasive non-native weeds are increasingly found growing together in Ohio. However, the defense chemicals of these weeds are very different and have vastly different modes of action. This is important to understand relative to management options as well as medical treatments for exposure to these highly dangerous weeds.

**Life as a Biennial**

Poison hemlock and wild parsnip belong to the so-called carrot family, Apiaceae (= Umbelliferae). They superficially share floral characteristics with other members of the carrot family such as Queen Anne’s lace (*Daucus carota*); however, this non-native biennial blooms much later in the season.
Poison hemlock has a biennial life cycle. The first year is spent in the “vegetative stage” as a low-growing basal rosette; the stage that is currently very apparent. Plants “bolt” during the second year “reproductive stage” to produce erect multi-branched stems topped with umbrella-like flowers.
Poison Hemlock and Wild Parsnip: Control Them Now! | BYGL

Biennial Life Cycle

Poison Hemlock Spring Rosettes

Graphic by Joe Boggs, OSU Extension
Wild parsnip is also reported to have a biennial life cycle. However, it may occasionally behave as a \textit{monocarpic perennial} spending more than a year in the vegetative stage before flowering once and then dying.
Mature poison hemlock plants can measure 6 – 10 ft. tall. Mature wild parsnip plants are shorter in stature but still impressive at up to 4 – 5 ft. tall. Both are prolific seed producers with seeds remaining viable for 4 – 6 years for poison hemlock and around 4 years for wild parsnip.
Poison Hemlock

Poison hemlock was imported into the U.S. as an ornamental in the late 1800s from Europe, West Asia, and North Africa. Rogue plants remained relatively rare until around 30 years ago. Since that time, poison hemlock has elevated its profile from an uncommon oddity to a common threat.

This non-native is one of the deadliest plants found in North America. It is the plant used to kill Socrates as well as the Greek statesmen Theramenes and Phocion. Poison hemlock plants contain highly toxic piperidine alkaloid compounds, including coniine and gamma-coniceine, which cause respiratory failure and death in mammals.

All parts of the plant are poisonous: leaves, stems, seeds, and roots. However, the toxins must be ingested or enter through the eyes or nasal passages to induce poisoning. The toxins do not cause skin rashes or blistering. Regardless, this plant should not be handled because sap on the skin can be rubbed into the eyes or accidentally ingested while handling food. Immediate emergency medical attention should be sought if an accidental poisoning from this plant is suspected.

All stages of the poison hemlock plant have bluish-green leaves that are 3-4 times pinnately compound. The deeply cut parsley-like leaflets have sharp points. Flowering plants have hairless, light-green to bluish-green stems that are covered with obvious purplish blotches; *Maculatum* means 'spotted'. Clusters of tiny white flowers are borne on structures called umbels that look like upside-down umbrellas.
Wild Parsnip
Wild parsnip sap contains psoralen which is a naturally occurring phytochemical grouped in a family of organic compounds known as linear furanocoumarins. Psoralen acts as a photosensitizing compound by inhibiting DNA synthesis in epidermal cells which kills these light-shielding cells responsible for protecting us from long-wave ultraviolet radiation (LWUVR) bombarding us in sunlight.

Severe blistering occurs when the affected skin is exposed to LWUVR. The synergistic effect is called phytophotodermatitis (a.k.a. Berloque dermatitis) and the burn-like symptoms, as well as skin discoloration, may last for several months.

Connecting skin blistering to exposure to wild parsnip sap can be a challenge. It takes around 24 hours for symptoms to first appear after exposure to LWURV and severe blistering typically doesn't peak until 48 - 72 hours. The time required for symptoms to appear after exposure to the sap means the effect may be disconnected from the cause.

Psoralens are also found in several other members of the Apiaceae family including the notorious giant hogweed (Heracleum mantegazzianum) which has captured national attention in the past. However, giant hogweed has only been confirmed in Ohio growing in the extreme northeast part of the state primarily in and around Ashtabula County. Wild parsnip is found throughout the state and is equally damaging. Of course, giant hogweed has a more threatening sounding common name while wild parsnip sounds like a vegetable gone wild; which it actually is!

Parsnips have been cultivated as a root crop in Europe for centuries, perhaps millennia. The "L." in the scientific name Pastinaca sativa L. means Linnaeus first described the species. Both the cultivated and wild types share the same scientific name; however, it is clear that there are significant differences in toxic biochemical properties between the two types.
It is theorized that the wild parsnip plants in Ohio represent "escapes" from cultivated types brought to North American from Europe and a "reversion" back to a wild type. The wild genes were always there but remained suppressed until revealed through natural selection.

Wild parsnip rosettes have **celery-like leaves** confined to growing from a short stem near the ground. While in this stage, the plant produces a long, thick taproot.

Flower stalks that eventually arise from rosettes have leaves that are alternate, pinnately compound, branched, and have saw-toothed edges. Each leaf has 5-15 ovate to oblong leaflets with variable toothed edges and deep lobes. The mature flowering plants have a single, thick, deeply grooved, greenish-yellow stem that sprouts lateral branches topped with hundreds of clusters of the yellow umbellate flowers.
Management
Unfortunately, poison hemlock and wild parsnip are becoming more common throughout Ohio and many other states in the upper Midwest as well as states in the eastern U.S. Worse, owing to the lack of awareness (e.g., identification) or poor management practices, or both, these dangerous non-native weeds are increasingly being found growing in close proximity to people which increases their risks to human health.
Additionally, it is not unusual to find poison hemlock and wild parsnip growing together which can create misinterpretations of exposure symptomology. This may account for some online resources incorrectly attributing skin blistering to contact with poison hemlock.
Mechanical management of poison hemlock can be used if it is certain that no wild parsnip is lurking within the poison hemlock. Still, personal protection equipment is strongly recommended particularly eye protection, gloves, and clothing to cover arms and legs to prevent sap from entering through the eyes or skin wounds. Hand-pulling and tilling are effective options if the area is immediately overseeded with grasses or other competitive plants to help suppress poison hemlock re-establishment from seeds germinating this fall.

Mowing can also be used; however, given that a sizable percentage of the current low-growing rosettes may escape the blade, it’s best to delay mowing to target bolting plants. String trimmers are also effective but present an even greater risk of flinging sap compared to mowing. All mechanical control options should be applied before plants begin to flower! Waiting until after plants flower, or worse after seeds are produced, can increase an infestation by removing canopy competition.
Given the extreme risk of phytophotodermatitis from wild parsnip sap, mechanical control is problematic. Hand-pulling is a high-risk endeavor and not recommended. Likewise, tilling could release a huge amount of harmful sap. There have been reports of sap spattered by mowers and string trimmers producing phytophotodermatitis on exposed arms and legs of equipment operators.

The safest approach to controlling this invasive weed as well as poison hemlock is to use herbicides. Of course, as always, read and follow label directions paying close attention to application sites, recommended rates, warnings against making applications close to desired plants (e.g. trees) or near water, and whether surfactants are recommended to enhance herbicide efficacy.

Both poison hemlock and wild parsnip are susceptible to several selective and non-selective postemergent herbicides. However, keep in mind that non-selective herbicides such as glyphosate (e.g. Roundup) can also illuminate plants that compete with these weeds. Herbicidal openings produced by non-selective herbicides provide perfect opportunities for more wild parsnip and poison hemlock to spring forth from previously deposited seed. Thus, it's important to have a plan for establishing competitive plants such as over-seeding with grasses.

Selective post-emergent herbicides will preserve competitive plants. Herbicides effective against wild parsnip and poison hemlock include clopyralid (e.g. Transline), triclopyr (e.g. Pathfinder II), metsulfuron (e.g. Escort XP), and combination products such as 2,4-D + triclopyr (e.g. Crossbow), or 2,4-D + mecoprop + dichlorprop (e.g. Triamine). Applications made now and before plants start to flower can significantly reduce infestations of both wild parsnip and poison hemlock.
Wild Parsnip
Response to Triamine

Tags
Poison Hemlock (/taxonomy/term/64)
Wild Parsnip (/taxonomy/term/109)
Conium maculatum (/taxonomy/term/1043)
Pastinaca sativa (/taxonomy/term/958)
What is Your Growing Degree Day (GDD) Number?

Authors: Amy Stone (node/76)
Published on: April 15, 2021

So what is your GDD - or growing degree day? Before you reach for a piece a paper, a pencil, and a calculator to figure out what your number is, check out the OSU's Growing Degree Day website. This website does the 'math' or the calculations to determine your GDD for you. All you need is an Ohio zipcode - type it in and hit enter. The website uses weather stations across Ohio to determine what the accumulations, and provides website visitors their GDD and where they are in a biological calendar of certain plants in flower and insect activity.
It is important to note that microclimates in our own landscape, or landscapes that you manage, can sometimes be ahead of, or even maybe lagging behind, but this information can be so useful and interesting. It is important to note that even if you appear to be ahead or behind of what the website is indicating, the order of plant bloom and insect activity remains the same. The sequence of order remains constant.

This morning, when I checked the website, Toledo (zipcode - 43615) was at 205 GDD. What this means is that gypsy moth caterpillars have begun to hatch (192 GDD), Donald Wyman crabapple is in first bloom (197 GDD), snowdrift crabapple is in first bloom (198 GDD), full bloom of compact garland spirea (205 GDD), full bloom of Koreanspice viburnum (GDD 205), and on the horizon is the egg hatch of the azalea lace bug (206 GDD).

https://www.oardc.ohio-state.edu/gdd/CalendarView.asp

This is why GDD is so useful!

Additionally, it fun (at least I think so) to compare where we are today, compared to the past. Sometimes we think, this spring is so early, or it feels like we are far behind an average spring. This website can help us remember what was happening horticulturally on this same day in the past. And even more cool, you can change the date too! So let's compare this spring, April 15, to year's past on the same day, April 15.

- 2021-205 GDD
- 2020-90 GDD
- 2019-85 GDD
- 2018-83 GDD
- 2017-201 GDD
- 2016-129 GDD
- 2015-78 GDD
- 2014-80 GDD
- 2013-69 GDD
- 2012-275 GDD
- 2011-66 GDD
- 2010-206 GDD
- 2009-103 GDD
So if you look and compare we have definitely accumulated more GDD than other years, except for 2012 when at this same time, we had accumulated 275 GDD.

Hopefully you have been using the website and tracking your GDD, and then heading outside to verify what the website says we are at, to what your plants are doing. It really has been spot on this season. I can look out from my office window and see many of the plants that are included on the website. Additionally, I can head out to the field and monitor for and observe insect activity that is included in this list.

The post would not be complete without thanking Dan Herms, Denise Ellsworth, Ashley Kulhanek and others who have worked on this project including the research and data collection that allows OSU to have such an excellent website that used by many.

Tags
growing degree days (/taxonomy/term/79)
GDD (/taxonomy/term/80)
Plant Phenology (/taxonomy/term/1184)

More Information
OSU Growing Degree Day Website
https://www.oardc.ohio-state.edu/gdd/default.asp
Maple Leaf Development and Heavy Seed Production

Authors: Joe Boggs
Published on: May 5, 2021

Seed versus Leaves

Joe Boggs, OSU Extension

(https://bygl.osu.edu/sites/default/files/field/image/1%20Heavy%20Seed%20Production%20RED%20%20JB.jpg)
Concerned Ohioans are reporting their maples have stunted leaves or no leaves at all; particularly towards the top of the tree. Several issues can produce thinning maple canopies including poor site conditions, girdling roots, a vascular wilt disease, etc. However, it’s unlikely one of these issues has become so common or multiple issues have converged to produce a general widespread maple malaise throughout Ohio.

It’s more likely the common condition of thin maple canopies is a condition common to maples. Indeed, red (A. rubrum), silver (Acer saccharinum), and sugar maples (A. saccharum) in many regions of Ohio, as well as Indiana and Kentucky, have produced loads of winged seeds (samaras). The challenge is that the timing of the blooms and thus seed production varies widely between the three dominant maple species in Ohio with red maples usually the first to bloom and sugars the last.
Obviously, heavy maple seed production is a natural event securing the survival of the species as demonstrated by hordes of maple seedlings eventually appearing in landscapes, vegetable gardens, and gutters. However, this blatant demonstration of plant gene continuity can produce canopy conditions that make maples “look sick” causing homeowners to question the overall health of their maple trees.
The first challenge is the prolonged presence of stunted leaves. Trees shift energy to support heavy seed production at the expense of leaf expansion. Abundant springtime samaras by themselves can draw attention to maple trees, particularly when the seeds mature and turn brown. The trees will look bare when the massive numbers of seeds drop from the trees because the stunted leaves need time to fully expand to fill out the canopy. So, homeowners need to be patient.
It was once believed that prolific tree seed/fruit production is connected to tree stress. The theory was that heavy seed production occurred on stressed or dying trees as a last hurrah in support of the species. However, research has failed to provide consistent support for this speculative conjecture. For example, a study published in 2017 in the Canadian Journal of Forest Research found no evidence that stress associated with drought over previous seasons influenced seed production in sugar maples.

Another hypothesis emerged several years ago linking heavy seed production to the lack of spring freeze events. The thinking was that maples are by nature heavy seed producers but their effusive reproductive efforts are occasionally thwarted by freezing temperatures killing the flowers or nascent seed. This explanation carries some weight given that observations across Ohio in past years support a reduction in seed loads after spring freezes damaged vulnerable flowers or seeds.
However, research has shown that another important variable must also be considered. As with oaks, sugar maples exhibit synchronous seed “masting” in which all trees in a population produce heavy seed in certain years. It is thought synchronous flowering by wind-pollinated trees enhances the success of pollen finding.
way to receptive flowers. Also, heavy seed production can overwhelm seed predators which enhances successful maple stand regeneration.

Thus, heavy seed production occurs with the convergence of two events: a heavy “mast ing” year for the maple trees coupled with the lack of a killer freeze. It appears that maples in many areas of Ohio dodged the frozen bullet that put the kibosh on beautiful magnolia bloom displays.

The bottom line is that while heavy maple seed production is not consistent throughout Ohio, Indiana, and Kentucky, it's substantial enough in many areas to noticeably affect leaf expansion. The good news is that full canopies will eventually prevail; it will just take a little longer on trees that have produced a lot of seed.

Tags
maple (/index.php/taxonomy/term/169)
maple seed (/index.php/taxonomy/term/62)
thinning maple canopy (/index.php/taxonomy/term/1549)
dying maple (/index.php/taxonomy/term/1550)
NEWSPAPER

Receive your BYGL through email! Visit our Newsletter page for more information - Subscribe Now (https://bygl.osu.edu/newsletter).

USEFUL LINKS

› PlantFacts (http://plantfacts.osu.edu)
› OhioLine (https://ohioline.osu.edu)

› The Ohio State University (http://www.osu.edu/)
› College of Food, Agricultural, and Environmental Sciences (http://cfaes.osu.edu/)
› Ohio State University Extension (http://extension.osu.edu/)
› Ohio Agricultural Research and Development Center (http://oardc.osu.edu/)
› Ohio State ATI (http://ati.osu.edu/)

Home (/)  About us (/about-us)
Horns are Popping

Authors: Joe Boggs
Published on: May 6, 2021

[Image: Horned Oak Gall with Emerging "Horns"

Joe Boggs, OSU Extension

[Link: https://bygl.osu.edu/sites/default/files/field/image/1%20Horns%20Emerging%20w-Nectar%20%20Quercus%20imbricaria%20-%20shingle%20oak%202021%206A.jpg]
The “horns” that give the horned oak gall its common name are rising to the surface in southwest Ohio. The woody stem galls were formed under the direction of the gall-wasp, Callirhytis cornigera (Family Cynipidae) to feed and house immature grub-like wasps.

The immature wasps spend 33 months developing at the base of specialized horn-like structures. Cutting the galls open will reveal these “horns” embedded within the galls.
As the wasps approach maturity, the horns rise to the surface giving the new wasps access to the outside world. However, the woody stem galls don’t go away. They eventually dry out to look like some sort of medieval weapon.
The wasps that develop within the woody stem galls are all females; there are no males. Reproduction without the need for males is called \textit{parthenogenesis}. Unfortunately, this reproductive strategy doesn’t appear to be an evolutionary dead-end, but that’s just one male’s opinion.

The new parthenogenetic females are poor fliers. The delicate asexual wasps crawl to leaf buds where they lay eggs to stimulate the production of small, inconspicuous leaf galls that will appear along the leaf veins later in the season.
The journey of the asexual wasps may be fueled by a sugary treat provided by their former horn abode. If you look closely at the tips of newly emerged horns, you’ll see tiny glistening droplets of nectar. At least, I believe it’s nectar; it’s sticky and sweet (personal taste-test).
The inclusion of extrafloral nectaries within the structure of wasp galls is not unusual. However, most galls ooze their sugary treat later in the season with the apparent goal of attracting stinging or biting gall-defenders.

A good example is oak rough bulletgalls that are produced under the direction of the cynipid wasp *Disholcaspis quercusmamma* (see *Extrafloral Nectaries, Myrmecophiles, and Other Trivial Pursuits*, BYGL Alert April 26, 2021). It’s too early in the season for the nectar oozing from horns of horned oak galls to attract gall-protectors from like bald-faced hornets (*Dolichovespula maculata*) and yellowjackets (*Vespula* spp.); they’re still in the early stages of nest construction. So, it’s speculated that the sugary treat may provide fuel for the newly emerged asexual horned oak gall wasps to help them with their journey.
The immature horned oak gall wasps that develop in the leaf galls require around 3 months to complete their development. The wasps that emerge are both males and females; this is the "sexual generation." The mated females of this generation are relatively good flyers and migrate to twigs to lay eggs and initiate the production of the stem galls that arise from meristematic cambial tissue.
Gall Impact

The vast majority of the insect and mite galls found on oaks cause little to no harm to the overall health of their host trees. Horned oak galls are an exception.

The galls can harm oaks if they encompass stems and disrupt the vascular flow. Cutting the galls open will reveal that vascular tissues become disorganized within the gall structure. The portion of the stem beyond the gall may die from being starved for water. The damage seldom kills trees; however, the canopy dieback may destroy the landscape value of heavily galled trees.
Horned oak gall wasps appear to be confined to members of the “red oak group.” Oaks that are commonly affected include black (Q. velutina), blackjack (Q. marilandica), pin (Q. palustris), shingle oaks (Q. imbricaria), Shumard (Q. shumardii), water (Q. nigra), and willow oaks (Q. phellos).

It’s generally perceived that pin oaks are particularly susceptible to galling and stem dieback. However, is it a matter of host selection or host impact? I and the horticulture professionals at Spring Grove Cemetery and Arboretum (Cincinnati, OH) have been monitoring three heavily galled mature shingle oaks for years. Stem gall density is on par with any heavily galled pin oak that I’ve ever observed. However, stem dieback is rare on all three trees. In fact, it becomes hard to tell that the trees are heavily galled once leaves fully expand.
This is good news because gall management is problematic with no clear method to reverse the galling trend once individual trees become targeted by the gall-wasp. Another management challenge is presented by the wasp's complicated life cycle involving asexual and sexual wasps that develop in stem and leaf galls, respectively. Both types of galls and their associated wasps occur at the same time.
Don’t Be Deceived

In the grand scheme of things, there is a strong argument that tree galls should be considered an integral part of forest ecosystems. For example, the ecological niche occupied by the horned oak gall wasp and its associated woody stem gall is important to the survival of over 30 other arthropods.

These gall-crashers are known as *inquilines* and they live in and feed on horned oak galls. They have nothing to do with gall development; they just take advantage of the work of the gall-making cynipid wasp. The beautiful little clearwing moth (family Sesiidae) known as the oak gall borer (*Synanthedon decipiens*) develops inside horned oak galls.
A Word from Management

The Heterogony Headache. The alternation of two different reproductive modes and lifestyles between generations of an animal species is known as "heterogony." However, heterogony with horned oak galls is not synchronous. The gall-maker resides in two locations at the same time on the same tree. Stem galls in various stages of development can be found at the same time as leaf galls.

The leaf galls occur every year providing a constant stream of wasps to produce new stem galls. This is why stem gall development is not synchronized. First-season stem galls are found on the same tree at the same time as when 33 month-old galls are releasing their wasps to initiate new leaf galls.

This makes managing this gall-wasp through pruning problematic. Galls of all ages would need to be found, pruned away, and destroyed. Missing a single gall means the eventual release of parthenogenetic female wasps that will produce a new crop of stem galls. Cutting out galled stems may provide some relief on small trees if the trees are not whittled down by continual pruning.

Is it Select-o-Tree or Just Bad Luck? One thing that is clear with horned oak galls: host susceptibility to these gall-wasps is highly variable. For example, I've been observing the row of pin oaks pictured below for several years. One tree has been a gall-magnet while all of the others have remained gall-free. It's my understanding that the trees originated from the same nursery.
One explanation for the high degree of variability within the pin oaks could be the inherent genetic variability between the trees with some being more susceptible compared to others. It's my understanding these trees aren't clones; they were produced from acorns. Even though they are the same species, they are not genetically identical.

Is there a "founder effect" with wasps that are genetically best suited for utilizing a particular tree being selected over time? The successive generations of their progeny would then thrive and multiply to produce a gall explosion. Nearby trees escape because the wasps are not genetically "matched" to these host trees.

Other possible explanations involve rampant speculation. Are the wasps communicating through chemical signals that translate into "this tree is good eats" causing females to remain on the tree? Could the galls themselves exude volatiles that makes the tree more attractive compared to the other trees? Of course, it could be all the above, none of the above; or perhaps just bad luck.

**You Can't Spray the Problem Away.** Unfortunately, there is no scientific insecticide efficacy data available to guide the use of topical contact insecticides or systemic neonicotinoids for suppressing horned oak gall development. Anecdotal accounts of suppressing gall formation using canopy sprays or soil drenches/tree injections with neonicotinoids should be viewed with skepticism. An observed drop in stem galls after an insecticide application may be due to some other factor.

**Nature Doesn't Play Favorites.** Research has shown that these native gall wasps have several natural enemies that are capable of significantly affecting wasp population densities. The legless, grub-like wasp larvae residing within the thin-walled leaf galls are particularly alluring to parasitoids. Wasp numbers may also be affected by environmental events. A driving rain would be disastrous for the delicate wasps trying to make their way to emerging leaves. These natural challenges translate into wide swings in horned oak gall-wasp populations.
The Bottom Line. It is clear that one effective gall-management option is to simply remove trees that for whatever reason have proven to be highly susceptible. Another option is to live with the problem by recognizing that this is not a tree killer. In fact, I think these galls add ornamental value, but I may be biased.

Credit Where Credit’s Due

Virtually everything we know about horned oak gall development and management comes from the Ph.D. thesis research conducted in the late 1990s by Eileen Eliason (now Buss) in partnership with her major advisor, Dr. Dan Potter, Entomology, University of Kentucky. Their work remains a touchstone example of the rigorous research required to unravel the intricate dance between an insect gall-maker and its plant host.

Tags
Horned Oak Gall (/index.php/taxonomy/term/114)
Callirhytis cormigera (/index.php/taxonomy/term/1281)
The Ohio Department of Agriculture will begin making treatments to manage the gypsy moth in the buckeye state. The caterpillars have hatched and have begun their feeding. Information shared in this BYGL Alert was provided by ODA in the form of a news release.

The Ohio Department of Agriculture (ODA) will soon begin aerial treatments to control the gypsy moth population in Ohio. Treatments are expected in early May, weather permitting, as larva and leaf development reach the optimal threshold.

The following areas will receive treatment:

- Hancock County: Arcadia
- Hocking County: South Bloomingville
- Licking County: Jersey
- Seneca County: Tiffin

Treatments are administered using a low-flying aircraft that flies just above treetops. High humidity, low temperature and minimal wind are crucial for a successful application. Treatment will most likely take place during early morning hours.

ODA will be using two kinds of treatments to control the gypsy moth caterpillar population, Foray (Btk) and Gypchek (NPV). Foray (Btk) is a naturally occurring bacterium found in the soil that interferes with the caterpillars' feeding cycles. Gypchek (NPV) is a naturally occurring virus that affects only the gypsy moth caterpillar when ingested. Both treatments are not toxic to humans, pets, birds, bees or fish.

Ohioans can view maps of treatment blocks at ODA's Gypsy Moth website. When the project begins, daily updates on treatment progress across the state will be available on the website.
Gypsy moths are invasive insects that defoliate over 300 species of trees and shrubs. In its caterpillar stage, the moth feeds on the leaves of trees and shrubs and is especially fond of oak. A healthy tree can usually withstand only two years of defoliation before it is permanently damaged or dies. In Ohio, 51 counties are currently under gypsy moth quarantine regulations.

ODA uses three programs to manage the gypsy moth population in Ohio. The suppression program is used in counties where the pest is already established, but landowners voluntarily request treatment to help suppress populations. The second program, slow-the-spread, occurs in counties in front of the larger, advancing gypsy moth population. The third program is the eradication program, used in counties where isolated populations develop ahead of advancing moth populations due to human movement of the moth. Officials work to detect and control isolated populations to slow the overall advancement of the gypsy moth infestation.

For more information about the gypsy moth or for specific treatment locations, visit ODA’s Gypsy Moth webpage (https://gcc02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fagri.ohio.gov%2Fwps%2Fportal%2Fgov%2Foda%2Fdivisions%2Fplant-health%2Fgypsy-moth-program%2Fgypsy-moth-program&data=04%7C01%7Ckatie.boyer%40agri.ohio.gov%7Ca743393601d54ac8171e08d90b198499%7C50f8fcc494d64f0784eb36ed57c7c8a2%7C0%7C1%7C63755302i by calling 614-387-0907 or 614-728-6400.

Tags
gypsy moth (/taxonomy/term/595)
slow the spread (/taxonomy/term/1353)
Ohio Department of Agriculture (/taxonomy/term/1010)
The long-anticipated magical appearance of Brood X (10) of the 17-year periodical cicadas (*Magicicada* spp.) has not yet gotten underway in Ohio. The clock is still ticking for the cicadas to take the stage en masse. My “cicada dig” yesterday in Butler County revealed cicada nymphs that had not yet developed the internal
coloring indicating they are about to spring from the soil.
This does not mean we won’t soon see periodical cicadas emerging in urban heat islands. However, much of the geographical range of Brood X in Ohio covers rural areas such as the location where I excavated the nymphs yesterday.
This is the third of what is anticipated to be a series of BYGL Alerts dedicated to Brood X happenings in Ohio, Indiana, and Kentucky. You can read the other Alerts by clicking these hotlinks:
https://bygl.osu.edu/node/1759
https://bygl.osu.edu/node/1773

**Some Music for Your Listening Pleasure**

Planning a Cicada Party? With social distancing, of course. Here’s a short playlist to get your party rolling as we wait for the mass appearance of Brood X!

These songs were gleaned from “Cicadamania;” an outstanding online cicada resource
https://www.cicadamania.com/

2020, Southern Culture On The Skids - Cicada Rock 2020 (Brood IX); a real toe-tapper, all six of them:
https://www.youtube.com/watch?v=UKpY8GxzxeU&t=25s

2016, The Cicada Song, CincyPolly; a song about the brief but exciting life of a young female cicada:
https://www.youtube.com/watch?v=Bn07-oPT_Sc

2013, CICADA, Hannah Gansen; a love affair seventeen years in the making:
https://www.youtube.com/watch?v=TqPLlgrQw9o

2013, Cicada Song 2013 - Sicka Cicadas (Brood II Re-mix), Kathy Ashworth; the title says it all:
https://www.youtube.com/watch?v=MvPYyfELKms&t=0s

2012, CICADA (Lyric Video), Liam Titcomb; you can sing along with this one:
https://www.youtube.com/watch?v=z28q4c6OUCk&t=31s

**Tree Wrapping**

Keep in mind that periodical cicadas co-evolved with their hardwood hosts. They are not tree-killers. Their oviposition damage to established trees does not affect the overall health of the trees. In fact, the tip dieback serves as natural pruning causing buds to produce more stems and foliage next season.

In most cases, management of the periodical cicada is not necessary. On the other hand, fruit trees and newly transplanted landscape trees may need to be protected from oviposition damage using tree wrapping.
However, it's important to use appropriate protective materials and proper application methods; improper tree wrapping can cause more damage than cicadas! Also, homeowners should assess whether or not their location places their landscape trees at risk.
I provided some “do’s and don’ts” with tree wrapping in my last BYGL Alert on Brood X. Below are pictures showing a recommended wrapping method using netting as well as an improper method using row crop cover fabric. Unfortunately, we’re getting reports from homeowners that netting and other proper wrapping material are becoming difficult to find.
Proper Tree Wrapping
Netting

Improper Tree Wrapping
Crop Cover Fabric

Cindy’s Way
https://bygl.osu.edu/node/1781
I received a phone call from a homeowner in southwest Ohio named Cindy who applied outside-the-box thinking to solve her tree-wrapping challenge. She used wedding tulle fabric. Frankly, being a guy who lives under a rock, I had never heard of this fabric! Indeed, I first wrote it as “wedding tool” in the notes I was taking during our phone conversation.

Cindy purchased two fabric bolts that measured 108 inches wide and 150 feet long. She paid $33.00 per bolt for her online order and was able to wrap all of her trees with some fabric leftover. I agreed to keep Cindy’s full name out of this Alert, but we both agreed on the appropriate name of her wrapping method.
As you can see, the fabric allows for good airflow keeping the foliage dry, and the weight of the fabric limits the deformation of new growth. According to Cindy, the downside is that the lightweight fabric presented some challenges with draping it over the trees particularly under windy conditions. She also had to custom-cut the fabric and close the side opening with staples. However, in my opinion, the results of her creative thinking were worthwhile.
Help Science: Join the Cicada Safari
There remain many unanswered questions about Brood X including the exact geographical distribution. Cicada populations are often highly localized with large concentrations commonly near areas with no cicadas. Future predictions depend heavily on where we do and don’t see periodical cicadas this spring.

Gene Kritsky worked with the Center for IT Engagement at Mount St. Joseph to develop an easy-to-use smartphone mapping app titled Cicada Safari. The free app can be download from the Apple App Store or Google Play.

All you need to do is snap a picture then hit the submit button. Once your image is confirmed as being a periodical cicada (and not your cat), the latitude and longitude for your observation are added to the cicada map.

I strongly urge that you download the app and use it to help us learn more about Brood X. Become part of the Cicada Safari!

Click on the hotlink below to access the Cicada Safari website
https://cicadasafari.org/ (https://cicadasafari.org/)

Tags
Periodical Cicada (/taxonomy/term/257)
cicada (/taxonomy/term/39)
17-year cicada (/taxonomy/term/162)
Dripping Calico Scale

Authors: Joe Boggs
Published on: May 18, 2021

Calico scale (*Eulecanium cerasorum*) is notorious for raining large quantities of sweet sticky *honeydew* onto the leaves and stems of its host tree as well as onto understory plants, sidewalks, parked cars, hapless gardeners, etc. A dingy patina is added when the honeydew becomes colonized by black sooty molds.
This non-native scale is a type of “soft scale” so named because its helmet-shaped shell can be easily crushed. However, they don’t start the spring in their present form.
Calico scale females (there are no males) spend the winter as small, crusty, flattened late instar nymphs (crawlers) stuck on plant stems. They look nothing like their mature form and may be overlooked or misidentified. These flattened females will eventually “puff up” and their characteristic helmet-shaped shells will display the starkly contrasting calico pattern of black-and-white markings that gives this scale its common name.
As with all soft scales as well as aphids, planthoppers, froghoppers (= spittlebugs), and mealybugs, calico scale females and nymphs insert their piercing-sucking mouthparts into phloem vessels to withdraw sap. They extract both carbohydrates for energy and amino acids to build proteins.

However, the sugary sap contains a much higher percentage of carbohydrates by volume compared to amino acids meaning the scale must remove a huge amount of sap to extract the amino acids required to meet their needs. They discharge excess sap from their anus in the form of a sticky, sugary, clear liquid called "honeydew;" a polite name for the liquid scale poo.

Honeydew production is in full swing in southwest Ohio; however, the rain of scale poo actually began a few weeks ago. If you look closely at the pictures below, you'll see the shimmering droplets of honeydew are oozing from females before they inflate like balloons as they mature. In fact, some of the droplets obscure the source making it look like the trees are leaking sap.
What’s Up Next?

The females will continue to spew honeydew as they mature towards egg production. Each female can produce more than 1,000 eggs, so populations can build rapidly.

Calico scale females die, turn reddish-brown, and appear to deflate after producing their eggs. Dead females remain evident throughout the remainder of the season and may give the false impression that control efforts such as an insecticide application were effective. In fact, I’ve received pictures in the past of calico scale females that died of natural causes being perceived as
proof that an insecticide application was effective.

The 1st instar crawlers that hatch from the eggs migrate to the underside of leaves where they attach themselves to veins. They suck fluid from phloem vesicles and drip honeydew; it's a family business.

A Host of Calico Problems
Calico scale has a wide host range with few landscape trees in Ohio other than conifers remaining beyond the reach of this Asian native. Here is a partial A-to-Z list of possible hosts: buckeye, crabapple, dogwood, elm, hackberry, hawthorn, honeylocust, magnolia, maple, oak, pear, redbud, serviceberry, sweetgum, tuliptree, poplar, witchhazel, yellowwood, and Zelkova.

Unfortunately, calico scale management using insecticides can be problematic. However, you can take advantage of their soft scale status to easily removing the puff-up females from plant stems using a scrubbing pad or scrub brush. It's an effective management method for small trees and preserves natural bio-allies such as lady beetles and other predators that target this sucking insect.
Fortunately, as with most soft scales, calico scale is seldom a direct killer of established landscape trees. But heavily infested trees may suffer branch dieback and the accumulated stress caused by substantial sap loss coupled with other stress-producing conditions may kill trees. So, the best first step in scale management is to resolve other issues that may affect overall tree health. I've frequently observed large, heavily infested honeylocusts that are planted in good sites showing no obvious symptoms. Just don't park your car beneath them.
I recently came across a burr oak (Quercus macrocarpa) with leaves covered in clear, sticky honeydew. I could also feel fine droplets raining down as I stood beneath the canopy. Indeed, my camera lens collected so many tiny droplets I had to retreat to my car to clean it before taking more pictures.

I found Myzocallis aphids (Myzocallis spp.) on the undersides of some leaves. However, the amount of honeydew showering me and my camera seemed way out of proportion to the number of leaves infested as well as the overall aphid population density. Although I found a few aphid colonies “mainlining” sap, many leaves had small numbers of aphids and the number of leaves with and without aphids was almost equal.
Of course, aphids aren’t the only honeydewers that may infest oaks. As I noted in yesterday's Alert on calico scale (Eulecanium cerasorum), this soft scale may be found on oaks as well as oak lecanium scale (Parthenolecanium quercifex) and the similar-looking European fruit lecanium scale (P. corni). All are notorious sources of copious quantities of honeydew. However, a close examination of the twigs and stems failed to reveal soft scales or any other honeydew source beyond the aphids.
This is not the first time I’ve encountered *Myzocallis* aphids on a member of the white oak group in southwest Ohio. It’s also not the first time I’ve been flummoxed by a small number of aphids pumping out a seemingly inordinate amount of honeydew. In 2012, I observed *Myzocallis* oak aphids on a mature white oak (*Q. alba*) that had sticky leaves as well as leaves covered in black sooty molds.
In my first encounter, I thought the white oak was infested with a soft scale because the number of aphids just didn’t seem to match the heavy flow of honeydew. But I could not find another source for the honeydew and concluded that I had happened onto the aphids/honeydew/sooty molds as the aphid population was “crashing.”

However, this was not the case with my most recent encounter with *Myzocallis* aphids on oaks. There were immatures as well as a few adults, so the population had not yet “aged out,” and the “3-P’s” (predators, parasitoids, and pathogens) were largely still on the horizon. The bottom line is that I must conclude these aphids are champion honeydewers.

On the other hand, as with the vast majority of aphids on hardwood shade trees, the oak aphids cause no appreciable harm to overall tree health. They are a nuisance pest at most, so no controls are necessary.

Besides, help is on the way. I consider aphids the wildebeests of the insect world: everything eats them. I’m certain the 3-P’s will eventually catch up as evidenced by a lacewing larva with its wicked sickle-shaped mandibles and several alligator-like multi-colored Asian lady beetle (MALB) larvae (*Harmonia axyridis*) lurking among the aphid herd.
Tags
Oak Aphids (/index.php/taxonomy/term/1556)
Myzocallis (/index.php/taxonomy/term/1557)
Myzocallis oak aphids (/index.php/taxonomy/term/1558)
honeydew (/index.php/taxonomy/term/1559)
honeydew oaks (/index.php/taxonomy/term/1560)
An Oak-Apple Gall Ex Expert

Authors: Joe Boggs
Published on: May 24, 2021

An overly generous conference moderator once introduced a talk I was about to give titled, "Tree Galls: A Management Conundrum," as being presented by a "gall expert." I looked around to see if they'd made a last-minute speaker substitution.

"An expert is somebody who is more than 50 miles from home, has no responsibility for implementing the advice he gives, and shows slides." – a pre-Zoom quote attributed to political gadfly Edwin Meese

My presentation included six “Gall Laws” relative to plant galls produced by insects. The First Gall Law was: Galls are abnormal plant growths produced under the direction of a living gall-maker. They do not arise spontaneously; they are not a response to plant wounding or chemicals that do not involve a gall-maker.
A Wonderous Process

I commonly use galls produced by wasps belonging to the family Cynipidae to illustrate the First Gall Law. Gall-making wasp females take advantage of undifferentiated meristematic cells to form both a home and food source for their offspring. Meristematic cells are like teenagers; they don’t know what they’re going to be until they grow up. Galls cannot be created from plant cells once they’ve differentiated into their final form; once they’ve “grown-up.”

It’s why leaf galls form in the spring, but stem galls can arise at any time. Leaf galls begin to be formed from meristematic leaf bud cells before the cells set sail on their way to becoming leaf tissue. The galls can’t develop once the cells reach port as integral parts of functional leaves. Stem galls that arise from meristematic cambial cells can develop anytime the cambial tissue is active; in the spring, summer, or fall.
Research has shown that female wasps launch gall formation by injecting phytohormones along with their eggs to hijack undifferentiated cells. Under the influence of these chemicals, the cells that were originally destined to become flowers, stems, or leaves are set on a new course. The process continues with phytohormones arising from the eggs. Then the larvae remain at the helm to turn plant genes on and off at just the right time to direct the growth of a plant structure we call a plant gall.

“An expert is a man who tells you a simple thing in a confused way in such a fashion as to make you think the confusion is your own fault.” – William Castle, American filmmaker

Cutting open plant galls to reveal the internal structure further illustrates the wonders of the gall-making process. For example, so-called “oak-apple” galls are produced by cynipid wasps hijacking buds. They are so named because they resemble apples. The galls are a true wonder with some having surface imperfections that resemble those produced by apple pests. Oak-apple galls are currently appearing on their namesake hosts in Ohio.
Possibly the "Large Empty Oak-Apple Gall"
Amphibolips quercusanis

Joe Boggs, OSU Extension ©

Possibly the "Large Empty Oak-Apple Gall"
Amphibolips quercusanis

Joe Boggs, OSU Extension ©
Oak-Apple Gall
Possibly Amphibolips quercusspongifica

Joe Boggs, OSU Extension©
Proof that oak-apple galls are constructed from leaf tissue can be seen in the image below. The gall is infected by the same oak anthracnose fungus behind the dark brown to black necrotic symptoms appearing elsewhere on the oak leaf.
The internal structure of oak-apple galls includes a central seed-like chamber housing a single wasp larva. The chamber may be surrounded by succulent tissue, not unlike the flesh of an apple, or you may find delicate white fibers radiating from the larval chamber.

Wasp larvae have chewing mouthparts; so, what do the gall-wasp larvae eat? They don’t eat themselves out of house and home by consuming the gall from the inside out. Instead, the inside of the gall chamber is lined with specialized cells called nutritive tissue which is constantly being replaced as it is consumed by the gall-wasp larva. Imagine lounging in a room with pizzas constantly emerging from the walls.
Always Doubt “Without a Doubt”

The Fourth Gall Law that I presented in my gall presentation was: *Gall structures and locations on the plant are so species-specific; the species of the gall-maker can be identified by the gall structure alone without the need to see the gall-maker itself.* I believe this gall law remains largely true; however, the identification of an oak-apple wasp species based entirely on gall structure should never be prefaced “without a doubt.”

“**An expert is a person who avoids the small errors while sweeping on to the grand fallacy.**” - Steven Weinberg, Nobel laureate in Physics

I once believed that I was on solid ground with identifying oak-apple gall culprits to species. Eventually, I recognized the grand fallacy of my overconfident self-assurance. While I may have been occasionally correct, I’ve been increasingly confronted with oak-apple galls that “fit” with descriptions of the handiwork of multiple cynipid wasp species meaning that narrowing down a wasp ID based on gall structure is often a matter of guesswork.

“**Expert: a man who makes three correct guesses consecutively.**” – Laurence J. Peter, educator best known for the formulation of the “Peter Principle.”

There are over 50 species of gall-wasps that are known to produce oak-apple galls in North America and there are probably at least 10-15 distinct species of oak-apple gall-wasps found in Ohio. Of course, these numbers are also a matter of guesswork because the geographical range of cynipid wasps remains poorly understood and these numbers also imply that all species are known.

Oak-apple galls range in size **at maturity** from 1/2 - 2" in diameter. Their range in size presents another ID challenge. The only way to know whether or not the oak-apple is an inherently small gall or a large gall that’s still developing is to **carefully** cut open the gall to assess wasp development. Unfortunately, my gall-cutting prowess commonly produces only half of a wasp larva or worse, a macerated larva.
Another ID challenge is the general lack of research-based information on oak-apple gall identification. In fact, no rules govern what makes a round gall an “oak-apple” in the first place.

The “oak-apple” name carries no taxonomic weight. While most so-called oak-apple galls are produced by cynipid wasps belonging to the genera *Amphibolips* and *Andricus*, I occasionally run across online references to “oak-apples” being produced by wasps belong to other cynipid genera.

Keep in mind that wasp taxonomy is based on adults, not larvae within a gall. Scientific papers naming gall-wasp species invariably include clear descriptions of morphological features of adult males and females with minimal to no descriptions of their associated galls.
On the upside, delving into the fascinating but often hidden world of gall-making wasps guarantees you will continually learn something new. The key is to embrace the unknown; to become comfortable with constantly navigating uncharted waters.

“I said that an expert was a fella who was afraid to learn anything new because then he wouldn’t be an expert anymore.” – Harry S. Truman, 33rd president of the United States

The bottom line is that wasp gall identification is in a constant state of flux meaning that what we think we know today will probably change tomorrow. Of course, that's science.

“An expert is one who knows more and more about less and less.” – Nicholas M. Butler, Nobel Peace Prize laureate

Tags
Oak-Apple Gall (/index.php/taxonomy/term/715)
Buckeye? Horse Chestnut? Which One is Which?

Authors: Thomas deHaas /index.php/node/742  Ann Chanon /index.php/node/1357
Published on: May 25, 2021

_Aesculus_ is the genus for both Buckeye and Horsechestnut. There are six species commonly found in the landscape. One of the best ways to distinguish between species is by their flowers and four of them are in bloom. The term buckeye is used for those _Aesculus_ native to North America. They include Ohio buckeye, _Aesculus glabra_, a medium size tree 30-50' in height. It is the first _Aesculus_ species to bloom in spring.
The flowers are greenish white and the stamens and pistils extend beyond the petals.
The fruits of Ohio buckeye are spiny when young and warty or prickly when mature. The petioles of Ohio buckeye are usually green and the leaves, made up of five leaflets, are 6” across and are stiff.
Yellow buckeye, *Aesculus flava* is a large tree 50-90' in height. It also has large leaves 12“-15“ across and the leaflets are often pendulous.
The flowers are a light yellow with a blotch that changes from gold to orange to red and the flower ages. A key identification feature is the stamens and pistils are contained within the petals.
Red buckeye, *Aesculus pavia*, is a small tree typically less than 25' in height.
The panicles of red buckeye are less dense than either Ohio or yellow buckeye; the flower petals can range in color from bright red to yellow with reddish overtones. These flowers are very attractive to hummingbird.
Note the red color of the petioles of red buckeye; the leaves are stiff and approximately 6" across.
There are many natural hybrids between Ohio, yellow and red buckeyes in all possible combinations. One of the best known is Autumn Splendor Buckeye, *Aesculus x arnoldiana* 'Autumn Splendor'.
This plant was selected for its glossy green foliage that is more resistant to both leaf scorch (an abiotic issue) and leaf blotch caused by *Guignardia aesculi* and for its good fall color. The flowers of Autumn Splendor buckeye are very similar to Ohio buckeye.
Bottlebrush Buckeye, *Aesculus parviflora* is a summer blooming large shrub that can reach up to 10’ in height. Currently, the panicles with immature flower buds are visible, and we can expect to see flowers in July.
Bottlebush buckeye flowers are attractive to swallowtail butterflies, hummingbirds and a variety of other pollinators.

Horsechestnut is the term used for *Aesculus* from Europe or Asia. The most popular is *Aesculus hippocastanum*, common horsechestnut.
These get to be large trees 50-75' in height. They can be quite spectacular in bloom as nearly every branch is tipped with a 12" panicle of creamy white flowers with a distinctive blotch that changes from yellow to a purplish red color as the flower ages.
The leaves of common horsechestnut are similar in size to those of yellow buckeye but they are stiff and usually have seven obovate leaflets.
There is also a double flowering cultivar, Double White Horsechestnut, *Aesculus hippocastanum 'Baumannii'*. 
The other striking *Aesculus* is a hybrid between the common horsechestnut and red buckeye. *Aesculus x carnea* also know as the red horsechestnut. This is a medium sized tree 30-50'.

![Image of Aesculus x carnea](https://bygl.osu.edu/index.php/node/1786)
There are three popular cultivars: Ruby Red Flowered Horsechestnut, *Aesculus x carnea* 'Briotii',...
Fort McNair Horsechestnut *Aesculus x carnea* ‘Fort McNair’
and O’Neill Red Horsechestnut *Aesculus x carnea* ‘O’Neill’.
All have bell shaped flowers that open pink and gradually darken rose. The leaflets of *Aesculus x carnea* often have a crinkled appearance.
Unfortunately, both common horsechestnut and red horsechestnut are both highly susceptible to *Guignardia aesculi* the organism that causes leaf blotch which can limit their effectiveness in the landscape.
Flowering can really help with the identification process.
One final note. If you purchase a buckeye or horsechestnut, SAVE THE TAG!

Tags
buckeyes and horsechestnuts (/index.php/taxonomy/term/614)
Spruce bud scale (*Physokermes piceae*) is an aptly named insect. The adult female scales can be found nestled behind the tree's bud scales of previous seasons' growth. The shape and color of these females is highly variable and changes as they mature. They are approximately 1/8" - 3/16" in diameter, globular and yellowish to dark brown in color. Fully matured females
have a light dusting of white wax over their exposed surface. At a quick glance, they look like buds of the tree. There may be one to several aggregated behind the scales of a node.

Spruce bud scale is commonly found (if you know what you are looking for) on Norway spruce (*Picea abies*) but can be found on other spruces and according to some, occasionally on pine. As the females feed, they produce copious quantities of honeydew. The honeydew will collect in teardrops of clear, glistening liquid hanging from the exposed tip of the scale and eventually drip on objects below. Some will stick on the needles while the rest drop from the trees. The drips will speckle objects on the ground giving a hint that something is going on above. If the honeydew is not washed away by rainfall, sooty mold spores may land in it and germinate.
In NW Ohio, several populations have been recently found due to the honeydew accumulations. A lack of heavy rains for a week or more has allowed the honeydew to collect in the trees. It also helps that most of the females settle on the lower branches of the tree. On stressed trees, the feeding by the scale may be the cause of branch death.
These females may have been mated by males and developing eggs or they may not be mated and be parthenogenetically producing eggs. The females will eventually lay their eggs under their bodies. These eggs will hatch sometime between mid-June through late-July. The newly hatched nymphs (crawlers) are extremely small (3/64") and yellow-orange in color. The crawlers move to needles where they settle to feed and develop to the second instar nymph. Second instar nymphs are also relatively small, flattened and oval to globose in shape. They are brownish yellow to dark brown in color. This is the stage that overwinters. In the spring, the overwintered second instar nymphs move to the bud scales at the bases of old growth. There, they settle in to finish their development. There is only one generation per year.

![Spruce Bud Scale](https://bygl.osu.edu/index.php/node/1793)

Spruce bud scale removed from host to view shape and developing eggs inside of female. One can see the developing eggs through the females exoskeleton.

Management of this scale is not a high priority. Manage the health of mature landscape trees as much as is feasible with appropriate horticultural practices.

The spruce bud scale may need to be managed in Christmas tree plantations and nursery production fields. These trees should be monitored for scale infestations. If populations are discovered, apply a foliar insecticide treatment (carbamate; horticultural oil; insecticidal soap; organophosphate; pyrethroid) to coincide with scale crawler activity or apply a systemic neonicitinoid in the springtime after new needles have expanded.

**Tags**
Norway Spruce (/index.php/taxonomy/term/1574)
Spruce Bud Scale (/index.php/taxonomy/term/1575)
Gooey, Sticky Resin Droplets On Norway Spruce Foliage Leads To The Discovery Of Spruce Bud Scale Infestations. | BYGL

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Send Comments to: Witney.1@osu.edu

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USEFUL LINKS
› PlantFacts (http://plantfacts.osu.edu)
› OhioLine (https://ohioline.osu.edu)

(http://www.youtube.com/user/OhioStateUniversity) (http://osu.edu/rss-feeds.html)
› The Ohio State University (http://www.osu.edu/)
› College of Food, Agricultural, and Environmental Sciences (http://cfaes.osu.edu/)
› Ohio State University Extension (http://extension.osu.edu/)
› Ohio Agricultural Research and Development Center (http://oardc.osu.edu/)
› Ohio State ATI (http://ati.osu.edu/)
Overwintered common bagworm (*Thyridopteryx ephemeraeformis*) eggs are hatching in southwest Ohio. The 1st instar caterpillars are very small with their bags measuring around 1/8" in length.
The tiny 1st instar bags are constructed with pieces of tan to reddish-brown sawdust-like frass (excrement) stuck to the outside of silk and look like "dunce caps." As the caterpillars mature, they begin weaving host plant debris into the silk which provides structural stability and helps to camouflage the caterpillar bag-abodes.

The overwintered eggs hatch within the female bags from last season. A percentage of the 1st instar caterpillars will crawl from the old bags and produce a strand of silk to catch the wind and "balloon" the tiny caterpillars to new locations. This behavior is one of the reasons bagworms often appear on hosts that were not infested last season. However, heavy rain and high winds quickly destroy the delicate silk strands.
Old bags can cling to twigs and branches for a number of seasons. Look closely on plants that are festooned with bags from past seasons. A single female can produce 500 - 1000 eggs meaning that populations can climb rapidly. Just a few females from last season can spawn damaging numbers of caterpillars this season.
Pay close attention to deciduous trees and shrubs as well as evergreens. It is a common misconception that bagworms only eat evergreens. In fact, they are called “evergreen bagworms” in many southern states.
However, the caterpillars may be found feeding on over 130 different species of deciduous trees and shrubs. Overlooking deciduous trees and shrubs during bagworm inspections allow infested plants to become reservoirs for infestations to spread to neighboring host plants.

Bagworm eggs may hatch over an extended period of time and eggs on the south side of an infested plant usually hatch earlier than those that are shaded on the north side. Consequently, it's common for 1st, 2nd, and sometimes 3rd instars to be present at the same time; bagworm caterpillars develop through 7 instar stages. This needs to be taken into account in planning management strategies.
For example, early instar bagworms are highly susceptible to the naturally occurring biological insecticide *Bacillus thuringiensis* var. *kurstaki* (Btk) (e.g. Dipel, Thuricide, etc.). Caterpillars are much less susceptible once bags surpass 2/3” in length. It's appealing to use Btk products because they do not kill bio-allies such as predators and parasitoids that help provide natural control of bagworm populations.

However, Btk products have two limitations. The active ingredient must be consumed to kill caterpillars and products have relatively short residual activity. Thus, timing is critical; products should not be applied prior to egg hatch. Even with proper timing, two applications may be required to cover the extended egg hatch. Of course, once bags exceed 2/3” in length, standard insecticides will need to be used to suppress heavy infestations.

Tags
bagworm (/index.php/taxonomy/term/105)
Common bagworm (/index.php/taxonomy/term/640)
*Thyridopteryx ephemeraeformis* (/index.php/taxonomy/term/801)
Breaking News: Oak Shothole Leafminer on Chestnut

Authors: Joe Boggs
Published on: June 2, 2021

I received a phone call yesterday from Mark Apelt who asked whether or not the oak shothole leafminer fly (Japanagromyza viridula, syn. Agromyza viridula) could also infest chestnuts. It was an interesting question given that oaks and chestnuts belong to the same family, Fagaceae.

Mark owns a 400-tree plantation called Buckeye Chestnuts in northeast Ohio. He reported that he is seeing leafmines as well as holes in the leaves of his Chinese chestnuts (Castanea mollissima). However, prior to Mark’s phone call, none of the literature that I had come across regarding the oak shothole leafminer listed hosts beyond oaks.
There is a moth, *Dyseriocrania griseocapitella*, that produces leafmines in chestnut and oak leaves; most frequently black oak (*Quercus velutina*). The tiny moth is grouped with the “microlepidoptera” so named because of their small size. However, the females use their straw-like proboscis to sip nectar. They don’t use their ovipositors like the oak shothole leafminer and other members of the Agromyzidae fly family to pierce newly expanding leaves to release sap which they drink using their lapping mouthparts. So, they don’t produce holes in the leaves like the shothole leafminer fly.

**Picture This**

After our phone conversation, Mark sent the pictures shown in this Alert. They clearly show holes in the leaves à la oak shothole leafminer as well as prominent leafmines. His images caused me to dig further into the literature. I found two (there may be others) scientific papers that reference chestnuts and oaks as hosts for *J. viridula* [see “References” below]. Scheffer et al. describe *J. viridula* as “Leafminer of *Quercus*, possible *Castanea* (Fagaceae),” and de Sousa and Couri are more definitive with noting “Host-plants: *Castanea* sp., *Quercus rubra*, *Quercus* spp.).
As you can see from the pictures taken by Mark and his father Alan, their Chinese chestnuts are showing all of the hallmark symptoms of the oak shothole leafminer including leafmines as well as the characteristic holes created by the puncture wounds made by the female flies with their ovipositors. You can compare the damage with the other pictures of oak shothole leafminer damage on oaks that I included in my BYGL Alert (“Holey Oak Leaves”) by clicking this hotlink: https://bygl.osu.edu/node/1796

Mark’s observations and photographs as well as the scientific literature provide support for *J. viridula* using chestnuts as another host; however, many questions remain to be answered. For example, does the agromyzid fly also infest (or infest equally) other chestnuts such as Chinese chinkapin (*C. henryi*), Japanese/Korean chestnut (*C. crenata*), European chestnut (*C. sativa*), and American chestnut (*C. dentata*) as well as the hybrids? Are the chestnuts equal to oaks regarding host preference? Does the fly target the leaves across all hosts at the same stage in leaf development?

Mark’s images appear to show leafmining activity that is more dramatic on the Chinese chestnuts compared to what I’ve observed on oaks. Is there a difference regarding host impacts?
These are just a few questions that should be pursued by observation, research, or both. Of course, we wouldn't be considering any of these questions without Mark reaching out to ask a very important first question regarding host range.

References


Tags

oak shothole leafminer (/index.php/taxonomy/term/264)
Japanagromyza viridula (/index.php/taxonomy/term/1325)
Chestnut Leafminer (/index.php/taxonomy/term/1578)
Maple Leaf Blister

Authors: Amy Stone (/node/76)
Published on: June 8, 2021

Last month, I received an email message from a Lucas County resident that was noticing leaf drop on some maples in her neighborhood. Of course, the diagnostic process immediately begins, and my mind automatically goes to the OSU FactSheet, and I start going through the series of questions. If you aren't familiar with the FactSheet, or need a refresher, this resource is laid out in a order that takes you through the diagnostic process.
Here is a link to the FactSheet: https://ohioline.osu.edu/factsheet/plpath-gen-3

But back to the client's situation and the concern about the spots on the leaves and them dropping prematurely on the lawn below. I went out to the site and identified the maple as a red maple, and noticed in the neighborhood that every other condo had a red maple and all were exhibiting the same brown spots on the leaves, and were dropping leaves. While if you looked at the ground, there was a noticeable amount of leaves on the ground, but if you looked into the canopy, the trees were still full and dense. The photo below shows the full canopy. You will also noticed that there aren't many leaves on the ground as the grass had been recently mowed.

![Image of full canopy](https://bygl.osu.edu/node/1800)

Photo Credit: Amy Stone, OSU Extension - Lucas County

While at the site, I took some photos and collected some leaves that had fallen and some still attached above. My initial thought was anthracnose, a common foliage disease that we see in the spring when weather conditions are favorable. Once back to the office, I began an email response to the person that reached out and was concerned about the trees in her neighborhood. As I was doing some research and finding links to resources that I could provide to the client that could easily be shared with others in her neighborhood, I came across some enlightening information from Michigan State University that covered maple anthracnose, and something called maple leaf blister (see link below). As I read more, I thought that what I was seeing actually fit the description of the maple leaf blister, more than anthracnose, even though I am sure I had called it anthracnose in the past.

Maple leaf blister (*Taphrina* spp.) is a disease of maple leaves that displays symptoms somewhat similar to maple anthracnose and can easily be confused. But with that said, there are some differences. The lesions caused by anthracnose are located between veins and along the leaf margins and often dark in color. Compared to maple anthracnose, the leaf spots of leaf blister are more rounded in shape and contain small, raised blisters. Lesions are a mix of lighter brown to black. The fungus that causes maple leaf blister overwinters in bud scales and attacks developing leaves early in spring. With the right weather conditions, the infection can spread rapidly and cover most of the leaves in the canopy.
Like anthracnose, maple leaf blister is unlikely to threaten a healthy tree, and cultural practices described for anthracnose can reduce spread of the fungus and the risk of serious damage to the tree. Ensuring sufficient water of approximately 1 inch per week will support the tree through the stress of disease and leaf regrowth. And like with many diseases, maintaining sufficient spacing for airflow between trees creates an environment that is less favorable for fungal growth and removing symptomatic leaves after they fall can help reduce the spread of the disease-causing fungi.

It is important to note that anthracnose and leaf blister can occur on a tree at the same time. The only way to be certain if a tree has one or the other or both is to send samples to a diagnostic laboratory and have it confirmed. That is what I did when I sent samples to the OSU's Plant and Pest Diagnostic Lab: https://ppdc.osu.edu/ (https://ppdc.osu.edu/)

Soon after the sample was submitted, I received an email confirmation that the sample had maple leaf blister. And as part of the detailed report sent from the lab, was links to two resources, one from the University of Illinois and one from Michigan State University. The MSU resource was the same source that I came across that got me questioning that actual cause of the leaf drop. We are grateful to have the clinic and the opportunity to send samples for diagnostics and confirmation as needed in the diagnostic process here in Ohio.

If you send samples to the PPDC, be sure that you are sending fresh samples that are shipped or delivered quickly. I have always said - the better the sample, the better the diagnosis will be. Links to forms and additional information can be found on the PPDC website. Additionally, the clinic is listing weekly summaries of what samples were received and the diagnosis made under the tab, weekly summaries. I did learn that a second sample was received from Franklin County with the maple leaf blister last week as well.

If you are seeing what appears to be maple leaf blister, send an email to stone.91@osu.edu with a photo if possible. Happy diagnosing this season and don't forget to use the 20 Questions of Diagnostic FactSheet!
## Monthly Report for Parks and Grounds Division

**April 2021**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Number of trees removed/planted</td>
<td>14/18</td>
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<tr>
<td>Number of trees trimmed</td>
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<tr>
<td>Brush/limbs removed</td>
<td>51.5 hrs.</td>
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<td>Playground equipment repaired</td>
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<tr>
<td>Litter picked up</td>
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<td>Special Events</td>
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<td>Splash pad maintenance</td>
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<td>Treatment with pre-emergent/herbicides</td>
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<td>Flowerbed maintenance</td>
<td>93 hrs.</td>
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<td>Mower Inspector</td>
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<tr>
<td>Snow removal-related activities</td>
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<tr>
<td>Mow with arm tractor or batwing</td>
<td>49.5 hrs.</td>
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<tr>
<td>COVID-19 activities</td>
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</table>