

# Plant Health Care Report

Scouting Report of The Morton Arboretum



THE  
CHAMPION  
of TREES

May 12, 2023

Issue 2023.4

For comments regarding PHCR, or to subscribe to email alerts regarding posting of new issues, contact me at [syiesla@mortonarb.org](mailto:syiesla@mortonarb.org).

Our report includes up-to-date disease and insect pest reports for northeastern Illinois. Contact us via email at [plantclinic@mortonarb.org](mailto:plantclinic@mortonarb.org) or by phone at 630-719-2424 (Monday thru Friday, 10 am to 4pm). The Plant Clinic is also open to walk-ins, but a [timed entry](#) and payment of entry fee is required for non-members.

## Quick View

### What indicator plant is in bloom at the Arboretum?

Common lilac (*Syringa vulgaris*) is in full flower (fig. 1)

**Accumulated Growing Degree Days (Base 50) at The Morton Arboretum: 196.5 (as of May 11).**

### Insects/other pests

- Boxwood leafminer
- Boxwood psyllid
- Elm flea weevil
- Euonymus webworm
- Hydrangea leaftier

### Diseases

- Cedar rust diseases

### Weeds

- Bishop's weed



Figure 1 common lilac

## Soil temperatures around Illinois (from Illinois State Water Survey)

This information will be provided all season. For data from other reporting stations, go to <https://warm.isws.illinois.edu/warm/soil/> (you will need to set up an account to access data.)

| Max. Soil temps<br>For 5/11/2023* | St. Charles<br>reporting station<br>(north) | Champaign<br>reporting station<br>(central) | Carbondale<br>reporting station<br>(south) |
|-----------------------------------|---|---|--|
| 2-inch, bare soil                 | 77.2  | 89.5  | 82.4                                       |
| 4-inch, bare soil                 | 79.4  | 78.8  | 75.6                                       |
| 4-inch, under sod                 | 69.2  | 75.3  | 74.2                                       |
| 8-inch, under sod                 | 62.4  | 68.9  | 69.6                                       |

\* This is the maximum soil temperature recorded the day prior to publication of PHCR.

## Degree Days (current and compared to past years) and rainfall

As of May 11, we have 196.5 base-50 growing degree days (GDD) at The Morton Arboretum. The historical average (1937-2022) for this date is 123 GDD<sub>50</sub>. The table below shows a comparison of GDD in different years. We are comparing the GDD<sub>50</sub> reported in this issue with the GDD reported in the first issue of 2022, 2017 and 2016. These years were selected since publication dates of the first issue were within a day or two of each other. Glencoe, and Waukegan (60085) were not used in 2017 and 2016, so there is 'no report' from those stations.

| Location                 | GDD as of<br>5/11/2023 | GDD as of<br>5/12/2022 | GDD as of<br>5/11/2017 | GDD as of<br>5/12/2016 |
|--------------------------|------------------------|------------------------|------------------------|------------------------|
| Carbondale, IL*          | 508                    | 525                    | 703                    | 645                    |
| Champaign, IL*           | 326                    | 315                    | 448                    | 414                    |
| Chicago Botanic Garden** | No report              | 166 (5/11)             | No report              | 110 (5/11)             |
| Glencoe*                 | 85                     | 81                     | No report              | No report              |
| Chicago O'Hare*          | 281                    | 234                    | 239                    | 249                    |
| Kankakee, IL*            | 262                    | 235                    | 297                    | 293                    |
| Lisle, IL*               | 275                    | 241                    | 252                    | 273                    |
| The Morton Arboretum     | 196.5                  | 215.5                  | 186                    | 185.5                  |
| Quincy, IL*              | 387                    | 380                    | 552                    | 503                    |
| Rockford, IL*            | 232                    | 184                    | 201                    | 198                    |
| Springfield, IL*         | 364                    | 35                     | 486                    | 456                    |
| Waukegan, IL* (60087)    | 213                    | 165                    | 147                    | 151                    |
| Waukegan, IL (60085)     | 241                    | 189                    | No report              | No report              |

\*\*Thank you to Chris Henning, Chicago Botanic Garden, for supplying us with this information.

\*We obtain most of our degree day information from the GDD Tracker from Michigan State University web site. For additional locations and daily degree days, go to <https://gddtracker.msu.edu/>

## Seasonal precipitation

| Seasonal precipitation (rain and melted snow) in inches. |                   |                  |                                |
|--|-------------------|------------------|--------------------------------|
|  | 2023              | 2022             | Historical average (1937-2022) |
| Jan  | 2.85              | 1                | 1.935                          |
| Feb  | 4.88              | 2.61             | 1.775                          |
| Mar  | 2.29              | 3.88             | 2.536                          |
| April  | 2.23              | 3.88             | 3.667                          |
| May  | .61 (thru 5/11)   | 6.1              | 4.206                          |
| June   |                   |                  |                                |
| July   |                   |                  |                                |
| Aug  |                   |                  |                                |
| Sept   |                   |                  |                                |
| Year to date   | 12.86 (thru 5/11) | 17.47 (thru May) | 14.12 (thru May)               |

### How serious is it?

Problems that can definitely compromise the health of the plant will be marked “serious”.

Problems that have the potential to be serious and which may warrant chemical control measures will be marked “potentially serious”. Problems that are seldom serious enough for pesticide treatment will be marked “minor”. “Aggressive” will be used for weeds that spread quickly and become a problem and “dangerous” for weeds that might pose a risk to humans.

### Pest Updates: Insects

| Examples of insects that may emerge soon in northern Illinois (based on growing degree days) |  |   |                        |
|--|--|---|------------------------|
| GDD (base 50)  | insect   | Life stage present at this GDD                  | Type of damage         |
| 145-200  | <a href="#">spongy moth</a><br>(formerly gypsy moth) | Caterpillars emerging                           | Chewing leaves         |
| 300-700  | Oystershell scale                                    | Crawlers emerging                               | Feeding on sap         |
| 400-600  | Bronze birch borer                                   | Larvae hatching out and beginning to enter bark | Tunneling under bark   |
| 400-600  | Elm leaf beetle                                      | First generation larvae emerging                | Chewing leaves         |
| 400-600  | Emerald ash borer                                    | Adults beginning to emerge                      | Mating and laying eggs |
| 400-500  | Pine needle scale                                    | Crawlers emerging                               | Feeding on sap         |
| 450  | Boxwood leafminer                                    | Adults emerging                                 | Laying eggs            |

### Boxwood leafminer (potentially serious)

Boxwood leafminer (*Monarthropalpus flavus*) has been a big problem for the last few years, with large populations evident on many boxwoods. They overwinter, as larvae, in the leaves on boxwood. Look for 'blisters' (fig. 2) on the leaves that turn from light green to orange or brown (as the larvae mature). The larvae are inside these blisters. Look carefully, as these blisters are sometimes mistaken for fungal leaf spots. The larva will pupate inside the leaf and emerge as an adult around GDD<sub>50</sub> 450. When the adults emerge, they will be orange and have a mosquito-like appearance.



Figure 2 Spots caused by boxwood leafminer

**Management:** Removing infested foliage now will reduce populations. Insecticides can be sprayed while the adults are emerging.

Good website:

<https://www.canr.msu.edu/news/boxwood-leafminer-a-serious-pest-of-a-favorite-landscape-plant>

### Boxwood psyllid (minor)

Boxwood psyllids (*Cacopsylla buxi*) are showing up around the region and our scouts have found some on the Arboretum grounds. The psyllids overwinter as tiny orange eggs in the bud scales of the boxwood. As the buds open, the psyllids hatch and begin to feed. The nymphs (fig. 3) are about 1/16th of an inch long, yellowish, and partially covered with a white secretion that protects them from parasitoids and chemical sprays. Their feeding causes cupping of the leaves. If your boxwood had this pest last year, the foliage from last year will show cupping. Newly hatched psyllids will cause cupping on new leaves.



Figure 3 Boxwood psyllid nymphs

**Management:** Damage is mostly aesthetic. Pruning boxwoods reduces the population as the insect or the eggs are removed in the process. This physical removal of infested tissue may be enough to keep the problem in check. We sometimes see ladybugs feeding on the psyllids.

Good website: <https://extension.psu.edu/boxwood-psyllid>

## Elm flea weevil (minor)

Our scouts have found elm flea weevil (*Orchestes steppensis*) on Accolade elm. They found the adult weevils (fig. 4) that have overwintered and have now come out to feed and lay eggs. Adult-feeding results in tiny shot holes in the leaves, and heavy feeding can cause newly expanding leaves to wither and turn brown. After feeding, the female weevil cuts a cavity into the leaf mid-vein and inserts an egg. The hatching larvae create blotch-shaped mines at the leaf tips. Larvae feed for about 2-3 weeks, and then pupate within the mined leaf. Very heavy feeding can reduce photosynthetic capacity of the tree, thereby impacting overall tree vitality. Dr. Fredric Miller tells us that “the elm flea weevil, for some reason, prefers Siberian elm and any hybrids that contain *U. pumila* in their genetics.”



Figure 4 Adult elm flea weevil

**Management:** Insecticides are effective in controlling adults when they are present. Depending on the insecticide used, more than one application may be needed. Spraying a large elm may not be practical, especially for a pest whose damage is relatively minor. There are systemic products available, if management is needed.

Good website: <https://mortonarb.org/plant-and-protect/tree-plant-care/plant-care-resources/european-elm-flea-weevil/#overview>

## Euonymus webworm (severity is determined by the amount of defoliation)

Euonymus caterpillars (*Yponomeuta cagnagella*), also known as euonymus webworms for the webbing they make, are feeding on running strawberry-bush euonymus (*Euonymus obovatus*). Last week, our scouts found webbing about the size of a pea and there were four tiny caterpillars inside (fig. 5, look just above Lincoln’s head). The markings on these tiny caterpillars were not as distinct as those seen on the more mature caterpillars in our photo (fig. 6). By now, with the warmer temperatures, the webbing and caterpillars are likely to be bigger and easier to see. Euonymus caterpillar can also attack



Figure 5 very young webworm caterpillars

other species of euonymus including spindle tree (*E. europaeus*) and burning bush (*E. alatus*). Inspect your plants carefully.

These caterpillars are leaf-feeding insects that live in colonies within thin webs at branch ends. The web increases with size as the larvae feed on the leaves and continue to grow. Larvae are pale yellow with black spots, eventually reaching an inch at maturity. The larvae will pupate in cocoons that hang on the branches. The adult moth emerges in June. The moth, known as an ermine moth, is white with black spots.



Figure 6 More mature webworm caterpillars

**Management:** Small populations can be managed by pruning out webs now and destroying them. *Bacillus thuringiensis* var. *kurstaki* (*Btk*) will control young larvae like we are seeing now. This is the value of scouting; find the enemy while he is small. The little guys are always easier to kill. *Btk* is less effective on mature larvae. Thoroughly spray the web and plant with *Btk*, as the insect must eat it in order for it to work.

Good website: <http://bugguide.net/node/view/70367>

### Hydrangea leaftier (minor)

The hydrangea leaftier (*Olethreutes ferriferana*) is an unusual little weirdo that has started showing up in the last few years. Our scouts have found it and we are getting emails about this pest as well. The hydrangea leaftier (as in “one who ties leaves together”) is showing up primarily on ‘Annabelle’ hydrangeas (*Hydrangea arborescens* ‘Annabelle’). This little caterpillar will tie leaves together to form a pouch-like structure (fig.7) at the end of the branch. The caterpillar lives inside. In summer, the caterpillar will go to the ground to pupate. Adult moths will emerge in spring.



Figure 7 Damage done by hydrangea leaf tier

**Management:** Hand removal and destruction of the affected leaves is usually sufficient control.

Good website: <https://bygl.osu.edu/node/1303>

## Pest Updates: Diseases

### **Cedar rust (unattractive, but generally not life-threatening)**

A few days ago, our scouts brought in cedar-hawthorn and cedar-quince rust that are primed to produce spores. All we need is some rain and the right temperatures and the spores will start to be produced. There are three main rusts on juniper: cedar-apple, cedar-hawthorn, and cedar-quince. Cedar-apple rust and cedar-hawthorn rust both form golf ball-shaped galls on junipers. During spring rains, the gelatinous telial horns (fig. 8) expand from the golf ball-like galls. Spores are released from the horns and are blown to a host in the rose family, e.g., apples, crabapples, and hawthorns. Orange leaf spots subsequently develop on the rose family plants, like crabapple and hawthorn, during the summer.



Figure 8 Cedar-apple rust on juniper

Cedar-quince rust is a bit different. Of the three cedar rust diseases, cedar-quince rust can cause the most damage by infecting fruits and twigs on trees in the rose family, especially hawthorns and serviceberries. Although cedar-quince rust spends part of its life cycle on junipers similar to cedar-apple rust and cedar-hawthorn rust, it does not form galls on the junipers. Cedar-quince rust appears as orange ooze that seems to be leaking directly from the twigs and branches of junipers (fig. 9). It is possible for all three diseases to be present on the same host at one time



Figure 9 Cedar-quince rust on juniper

**Management:** The disease is usually not serious on the juniper host. Once the orange jelly horns and ooze stop, the juniper will look fairly normal. No real treatment is needed.

Management is usually more focused on the hosts in the rose family. The best management is to plant resistant varieties of crabapples and hawthorns. Remember, resistance is not the same thing as immunity. Being resistant does not mean that the tree will never get rust. It only means that, in an average year, it is not likely to have much problem with the disease. In a year that is very favorable to the fungus, even resistant trees may show some signs of disease. When considering the purchase of a new crabapple, check with your local

nursery about which rust-resistant cultivars they offer. Chemical control for rose family hosts, if used, needs to start as leaves are emerging and when the telial horns are expanding on junipers. Although the rust diseases will cause orange spots on leaves and infect fruit, actual long-term damage is mostly minor, and may not require treatment. Cedar-quince rust can lead to stem swelling on hawthorn, and those swellings can lead to dieback on infected twig tips. Dead branch tips should be pruned out.

Good web sites: <https://mortonarb.org/plant-and-protect/tree-plant-care/plant-care-resources/cedar-apple-rust/>

<https://extension.umn.edu/plant-diseases/cedar-apple-rust>

## **Pest Updates: Weeds**

### **Bishop's weed (aggressive)**

For many years, Bishop's weed (*Aegopodium podagraria*) was sold as a ground cover and some garden centers still sell it. It was also sold under the name goutweed and ground elder. The variegated cultivar was especially popular (fig. 10). But times change, and the biggest question that the Plant Clinic gets regarding this plant is "How do I get rid of this?"



Figure 10 Variegated Bishop's weed

Why the change? Bishop's weed is a strong grower and is very aggressive, often covering a lot more territory than is desirable. This plant spreads easily underground and can be difficult to control. At this time, Wisconsin is the only Midwestern state that legislates against this plant. That does not mean it is a problem only in that state. It may not fall into the invasive category, but it certainly is aggressive in many gardens.

The leaves of Bishop's weed are compound with up to nine leaflets. The arrangement of the leaves often leads people to mistake it for poison ivy. Leaves of the species are green (fig. 11), but the variegated cultivar has green leaves with creamy margins. The plants will produce clusters of white flowers that resemble Queen Anne's lace, followed by lots of seeds!



Figure 11 Bishop's weed with green leaves



**Management:** Bishop's weed can be difficult to control. Remove flowers before they go to seed to minimize spread through that venue. Control of existing plants is difficult without herbicides because digging the plant seldom removes all the underground stolons. Glyphosate can be used to control this plant, but multiple applications may be needed. It is best to treat the plant when it is small, either at the time it is emerging from the soil or resprouting after being cut down. Glyphosate will be absorbed by the young leaves and transported down to the root system to kill out the entire plant. Glyphosate is a non-selective herbicide and can kill or damage any plant so care must be used to avoid getting it on desirable plants.

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*Bartlett Tree Experts, Presenting Sponsor of the Plant Clinic.*

The Plant Health Care Report is prepared by Sharon Yiesla, M.S., Plant Knowledge Specialist and edited by Stephanie Adams, Ph.D., Plant Health Care Leader; Fredric Miller, Ph.D., Research Entomologist at The Morton Arboretum; and Carol Belshaw, Arboretum Volunteer. The information presented is believed to be accurate, but the authors provide no guarantee and will not be held liable for consequences of actions taken based on the information.

Thank you...I would like to thank all the staff and volunteers that report disease and pest problems when they find them. Your hard work is appreciated. Our volunteer scouts for 2023 are Deb Link, Maureen Livingston, Loraine Miranda, and Molly Neustadt.

Literature/website recommendations:

Indicator plants are chosen because of work done by Donald A. Orton, which is published in the book Coincide, The Orton System of Pest and Disease Management.

Additional information on growing degree days can be found at:

[http://www.ipm.msu.edu/agriculture/christmas\\_trees/gdd\\_of\\_landscape\\_insects](http://www.ipm.msu.edu/agriculture/christmas_trees/gdd_of_landscape_insects)  
[http://extension.unh.edu/resources/files/Resource000986\\_Rep2328.pdf](http://extension.unh.edu/resources/files/Resource000986_Rep2328.pdf)

This report is available as a PDF at The Morton Arboretum website at <https://mortonarb.org/about-arboretum/plant-health-care-report/>

For pest and disease questions, please contact the Plant Clinic. You can contact the Plant Clinic via email at [plantclinic@mortonarb.org](mailto:plantclinic@mortonarb.org). Emails will be answered during business hours Monday through Friday. You can call the Plant Clinic by phone (630-719-2424) or visit in person, Monday thru Friday 10 am to 4 pm. On weekends and national holidays, Arboretum members need [a timed entry ticket](#) to enter the

Arboretum and visit Plant Clinic in person. Non-members need [a timed ticket](#) every day and must pay the entry fee.

Inquiries or comments about the PHCR should be directed to Sharon Yiesla at [syiesla@mortonarb.org](mailto:syiesla@mortonarb.org).

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## 2023 Plant Health Care Report Index



Following is an index of the various subjects in this year’s report. The number after each subject is the report number. For example, using the chart below, Cicadas..... 1 means that it was discussed in the PHCR 2023.01 or the newsletter dated April 7, 2023. The index is updated with the publication of each full issue and is included at the end of each full issue.

|        |          |
|--------|----------|
| 2023.1 | April 7  |
| 2023.2 | April 14 |
| 2023.3 | April 28 |
| 2023.4 | May 12   |
| 2023.5 | May 26   |
| 2023.6 | June 9   |
| 2023.7 | June 23  |

|         |              |
|---------|--------------|
| 2023.8  | July 7       |
| 2023.9  | July 21      |
| 2023.10 | August 4     |
| 2023.11 | August 18    |
| 2023.12 | September 8  |
| 2023.13 | September 22 |

|                                 |      |  |   |
|---------------------------------|------|--|---|
| Bishop’s weed .....             | 4    | Hydrangea leaf-tier .....                    | 4 |
| Black knot.....                 | 2    | Indicator plants, what they tell us .....    | 1 |
| Boxwood blight .....            | 2    | Insects, disease and stress.....             | 1 |
| Boxwood leafminer.....          | 4    | Pine bark adelgid .....                      | 3 |
| Boxwood psyllid .....           | 4    | <i>Rhizosphaera</i> needle cast .....        | 3 |
| Cicadas .....                   | 1    | Rust, cedar .....                            | 4 |
| Crabgrass preventer .....       | 1, 2 | Spongy moth.....                             | 2 |
| <i>Cytospora</i> canker .....   | 3    | Spotted lanternfly.....                      | 1 |
| Deadnettle, purple.....         | 3    | Tools you can use .....                      | 1 |
| <i>Diplodia</i> tip blight..... | 2    | Using growing degree days.....               | 1 |
| Eastern tent caterpillar .....  | 2, 3 | Viburnum leaf beetle.....                    | 2 |
| Egg masses and more .....       | 1    | <i>Volutella</i> blight on pachysandra ..... | 3 |
| Elm flea weevil .....           | 4    | Watch the weather, not the calendar .....    | 3 |
| European pine sawfly.....       | 2, 3 | Weather, climate and water.....              | 1 |
| Euonymus webworm .....          | 4    | Winter weather .....                         | 1 |
| <i>Ficaria verna</i> .....      | 2    |  |   |
| Fungicides, timing .....        | 1    |  |   |
| Gypsy moth .....                | 2    |  |   |