

# THE PURDUE LANDSCAPE REPORT

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## Tracking Tornadoes Over Time

(Beth Hall, [hall556@purdue.edu](mailto:hall556@purdue.edu))

Indiana has already experienced several tornadoes this year with more certainly to come. Of course, this is not unusual since Indiana is often considered on the far northeastern edge of “Tornado Alley”. Tornadoes get their energy from the battle between the cooler, drier Canadian air moving southeastward and the warmer, more humid air coming north from the Gulf region. The greater the contrast in both temperature and humidity, the more likely winds and energy will be generated to develop those nasty weather events. This is why tornadoes are most common in our spring and in recent years autumn tornadoes have occurred with greater frequency.

The Midwestern Regional Climate Center (MRCC) provides a Tornado Tracks Tool (<https://mrcc.purdue.edu/gismaps/cntytor>) where users can view the estimated tracks of tornadoes from 1950 through 2023 (Figure 1). Official tornado data from the federal Storm Prediction Center (SPC) is released annually, and 2024 data should be released soon. The tool allows filtering by tornado magnitude, year range, months, and whether there were any documented injuries and/or fatalities. Clicking on a tornado provides further information. Do you remember a tornado from your past that you still tell stories about? Use that tool to explore what official records have to say about it!

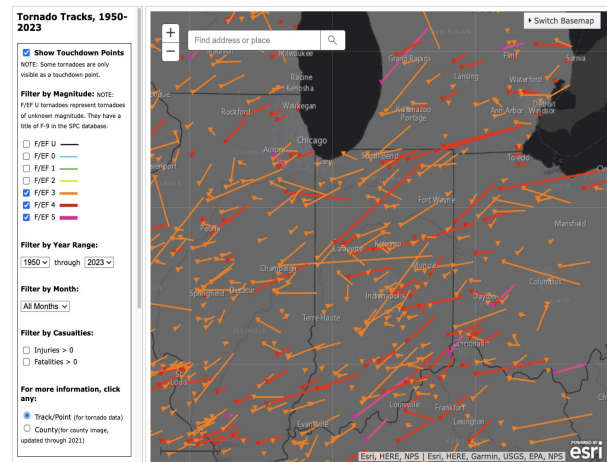


Figure 1. Snapshot of the MRCC's Tornado Tracks tool depicting tornadoes greater than or equal to an EF3 on the enhanced Fujita scale from 1950 through 2023.

The National Weather Service provide a nice tool for looking at the climatology of a broader range of events (e.g., tornadoes, hail, wind)

(<https://experience.arcgis.com/experience/170541dee33b48b7b88514b8f65e601f>). Similar to the MRCC tool, this tool only has data through 2023.

For more recent storm reports, the Southern Regional Climate Center (SRCC) provides an interactive tool similar to the MRCC Tornado Tracks tool but includes recent storm report data from the SPC (Figure 2). This tool includes a much broader range of storm types such as drought, flood, fire, hail, hurricanes, thunderstorms, and tornadoes. Users can select a period, zoom into their area of interest, and select which types of storm events to view. A table below the map provides additional information about each event.

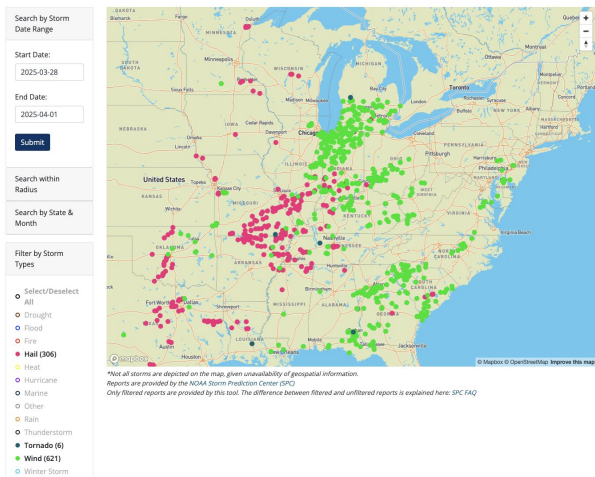


Figure 2. Snapshot of the SRCC storm reports tool showing hail (red), tornado (blue), and strong wind (green) reports from March 28 through April 1, 2025.

Extreme weather events are nothing to take lightly, and safety should always be the priority during the event. However, once the event has passed and it can be shared as an memory or anecdote, using these tools can be a fun way to see how your event stacks up to other events nearby.

## Tips for Dealing with Storm-Damaged Trees

(Ben McCallister, [bmccalli@purdue.edu](mailto:bmccalli@purdue.edu))

*April showers bring May Flowers.* Many of us were taught this little rhyme to describe the weather of Spring. April has arrived along with the beginning of the Spring storm season and damage to and from trees is a topic of concern on many minds. Depending on the intensity of the storms and the condition of the trees, damage from high winds, heavy rainfall, and lightning can be quite severe. Cracked or broken branches, stem failure, and root failure are some of the main concerns, but also the risk and liability of damage to people and property.



Figure 1. Storm season is upon us. There are a number of resources from Purdue to help dealing with storm-damaged trees.

If your tree is damaged, there are some steps to deal with the situation. First and foremost, consider the safety of yourself and others around you. Inspect the tree from a distance first, looking for the following:

- Heaving of the ground, indicating potential root failure
- Damage to limbs and/or the trunk of the tree
- Hanging branches can fall to the ground, resulting in injury or death
- Be aware of utility and power lines. Trees can become charged by coming in contact with live wires. All utility lines should be considered energized and dangerous.

If you find your trees damaged from a storm hiring an International Society of Arboriculture (ISA) Certified Arborist to perform a risk assessment will help guide your decision of how to manage your tree. To find an arborist near you and verify credentials, use the link at [Find an Arborist](#), Trees are Good, International Society of Arboriculture (ISA). For more information, you can also view the publication [Trees and Storms](#), located in The Education Store, Purdue Extension's resource center.

### Resources:

[Find an Arborist](#) video, Trees are Good-International Society of Arboriculture (ISA)

[Trees and Storms](#) - The Education Store, Purdue Education's resource center

[Caring for storm-damaged trees/How to Acidify Soil in the Yard](#) - In the Grow, Purdue Extension

[Moist soil and rotten roots makes it easy for trees to come crashing down](#) - Fox 59 News

[Expert: Some storm damage can be easily prevented](#) - Fox 59

[Why Is My Tree Dying?](#) - The Education Store

[Tree Risk Management](#) - The Education Store

[Mechanical Damage to Trees: Mowing and Maintenance Equipment](#) - The Education Store

[Trees and Electric Lines](#) - The Education Store

[Tree Defect Identification](#), The Education Store

[Planting Your Tree](#), video, The Education Store

[Tree Installation](#), The Education Store

[Tree Wound and Healing](#), Got Nature? Blog, Purdue Extension - Forestry and Natural Resources

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[Ben McCallister](#), Urban Forestry Specialist

## Cylindrocladium Root Rot

(John Bonkowski, [jbonkows@purdue.edu](mailto:jbonkows@purdue.edu))

Plants that show little growth, are stunted, or are wilted and in active decline are all hallmarks of root stress. Some of the more prominent pathogens that cause root rot include *Fusarium*, *Phytophthora*, *Pythium*, and *Rhizoctonia*, but there is another fungus which can cause just as much damage in the right situation that does not get as much press: *Cylindrocladium*. The

name *Cylindrocladium* is used for the asexual stage of the fungus *Calonectria*, so if you see either name, they are used for the same organism.

There are a lot of *Cylindrocladium* species which have been observed to cause disease in over 300 plant species throughout the world. The diseases *Cylindrocladium* can cause range from leaf spots, cankers, and stem blights to root, crown, and cutting rots (Figure 1, 2, 3). Symptoms may vary between hosts and the fungus can potentially infect every plant part of some plant species. Boxwood blight is another specific example of a disease caused by a *Calonectria* species. I will be sticking to the roots here, so if you would like to read more on boxwood blight, please see the links below in Additional Resources.



Figure 1. Pieris plant with *Cylindrocladium* root and crown rot. Brown to black lesions can be observed at the base of the plant. After incubating the stem tissue, spores produced by the fungus can be observed growing from the stem surface. Photo Credit: PPDL



Figure 2. Pine seedlings growing in a nursery are dying due to *Cylindrocladium* root rot.



Figure 3. Nursery grown azalea with *Cylindrocladium* infection. Photo Credit: Penn State Department of Plant Pathology & Environmental Microbiology Archives, Penn State University, Bugwood.org

When a plant is infected by *Cylindrocladium*, dark gray, almost black, lesions can develop on the affected tissue (Figure 4,5). In woody plants, seedlings, saplings, and smaller trees are usually infected more frequently. Infections can begin on the tap root or at the root collar. Vertical cracks may develop along the length of the lesions, creating a rough, fissured appearance (Figure 5). The initial lesion can spread and eventually girdle individual roots or the main stem of the seedlings, which can eventually kill the tree. If the lesion is low enough on the main root, you may see new roots begin to develop above where the lesion occurs.



Figure 4. Black walnut-Black discoloration of the root system of a black walnut seedling caused by *Cylindrocladium* Photo Credit: Paul A. Mistretta, USDA Forest Service, Bugwood.org



Figure 5. Tulip poplar black lesions with vertical fissures in Tulip poplar roots caused by *Cyindrocladium*. Photo Credit: Edward L. Barnard, Florida Department of Agriculture and Consumer Services, Bugwood.org

*Cyindrocladium* produces microscopic clusters of rod-shaped conidia in crystalline bundles that are highly sticky. They disperse primarily by water splash dissemination, so rainfall or overhead irrigation can increase disease spread, however, since the spores are so sticky, they can be easily transferred by contaminated tools. Conidia can be produced throughout the growing season, so repeat infections occur very frequently. We typically see *Cyindrocladium* root and crown rot problems in nurseries, but infected plants can be transferred to the landscape, transporting the fungus to a new location. It can survive in plant debris or in the soil for 15 years or more because it produces survival structures called microsclerotia which can withstand extreme weather conditions and germinate when the weather becomes conducive for growth.

Management of this disease issue can be difficult for a number of factors:

- Repeat infection cycle means continuous management throughout the season
- Broad host range which can lead to potential transfer from one host in a nursery setting to another nearby, yet different plant species
- Fungicides may not provide adequate control or cannot provide curative benefits to stem and root infections.
- Microsclerotia can survive for a very long time in the site, so once it present, you will not be able to easily get rid of it.

Management Strategies:

- Start clean and stay clean: always choose healthy plants or return plants that have dead stems, are turning yellow, or in decline.
- When propagating, do not take cuttings from stressed or wilting plants
- Quarantine plants when you first receive them and monitor for disease development before moving into your normal growing area or into the location it will be installed.
- Cull diseased plants or remove and destroy infected plant parts. Use disinfectants on pruners and other cutting tools to reduce the risk of spreading the pathogen from an

infected plant to healthy plants.

- Avoid overhead irrigation, where possible, to reduce the potential for pathogen dispersal
- Increase plant spacing, if possible, to help slow down disease spread; this affects humidity and airflow between plants but also increases the distance water droplets need to travel to get to another plant.
- Fungicides can be used in conjunction with cultural management strategies to reduce disease spread and slow down disease progression, but it can be very costly in a landscape and even in some nursery settings.

Additional Resources and References:

Root Rot – Purdue Landscape Report

<https://purduelandscape.org/article/root-rot/>

Cyindrocladium Root Rot – Purdue Plant Doctor

<https://purdueplantdoctor.com/factsheet/tree-406>

Diseases of Trees and Shrubs (Sinclair and Lyon); page 220-221.

Root rots and blights caused by *Cyindrocladium* and *Cyindricladiella*

<https://www.cornellpress.cornell.edu/book/9780801443718/diseases-of-trees-and-shrubs/#bookTabs=1>

Impact of Calonectria Diseases on Ornamental Horticulture:

Diagnosis and Control Strategies

Aiello et al. 2022:

<https://apsjournals.apsnet.org/doi/epdf/10.1094/PDIS-11-21-2610-FE>

Boxwood Blight:

<https://purduelandscape.org/article/boxwood-blight-be-on-the-look-out/>

<https://www.extension.purdue.edu/extmedia/BP/BP-203-W.pdf>

<https://purdueplantdoctor.com/factsheet/tree-404>

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## Purdue Horticulture Society Explores Louisville’s Botanical Scene

(Kyle Daniel, [daniel38@purdue.edu](mailto:daniel38@purdue.edu))

The Purdue Horticulture Society embarked on the annual spring trip on March 28-30. This year the club picked Louisville to explore a botanical garden and arboretum. This annual trip provided members with an opportunity to expand their knowledge of horticulture and appreciate the beauty of diverse plant collections.



Figure 1. Purdue Horticulture Society at Waterfront Botanical Gardens in Louisville, KY.

On **March 29**, the group visited the **Waterfront Botanical Gardens**, a vibrant, urban oasis dedicated to sustainable gardening and environmental education. Situated on a former landfill site, the gardens exemplify how revitalized spaces can become thriving centers of biodiversity. Students marveled at the

lush plantings, innovative landscape designs, and eco-friendly initiatives aimed at conservation and education.

On **March 30**, the group traveled to the renowned **Bernheim Arboretum and Research Forest**, a sprawling 16,000-acre natural preserve that blends art, science, and conservation. With its extensive collection of trees, wildflowers, and diverse ecosystems, the students were able to immerse themselves in the collections available at the arboretum. Highlights of the visit included a hike through the arboretum's scenic trails, encounters with the famous Forest Giants art installation, and early blooming trees and shrubs.

The trip was made possible through funding from the **Purdue Horticulture Society's annual Spring Plant Sale**, held during **Spring Fest**. This fundraiser provides essential support for club activities, including educational trips like this one. The **2025 Spring Plant Sale** will take place on **April 12**, offering annuals, houseplants, and succulents grown by students. Proceeds from the sale help fund future club events and hands-on learning opportunities.

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Editor: Kyle Daniel | Department of Horticulture and Landscape Architecture, 625 Agriculture Mall Dr., West Lafayette, IN 47907