

Commercial Horticulture

March 22, 2024

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IPMnet  
Integrated Pest  
Management for  
Commercial Horticulture  
[extension.umd.edu/ipm](http://extension.umd.edu/ipm)

If you work for a commercial horticultural business in the area, you can report insect, disease, weed or cultural plant problems (**include location and insect stage**) found in the landscape or nursery to [sgill@umd.edu](mailto:sgill@umd.edu)

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Weed of the Week: Chuck Schuster (Retired Extension Educator), Kelly Nichols, Nathan Glenn, and Mark Townsend (UME Extension Educators)

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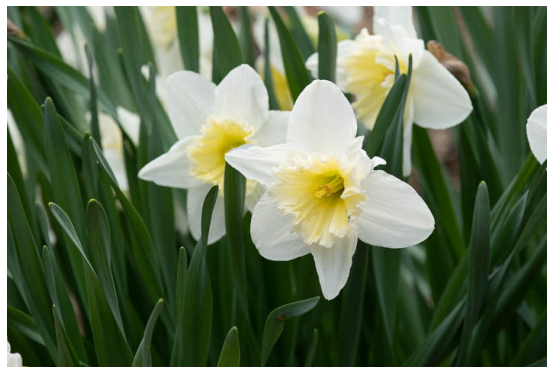
### What Happened This Winter: Any Impact on Plants?

By: Stanton Gill

It was a wet winter with lots of rain and little snow. Other than that, it appears we got through it without really severe, extended cold. We did have some cold periods.

**Here are some we recorded in January of 2024:** In the daytime on January 14, 2024, we had light snow followed by nighttime temperatures that dipped to 19 °F. On January 15, 2024, temperatures dipped to 9 °F nighttime of January 16. On January 17, night temperatures dipped to 19 °F.

As we move into April and May, if you see winter injury on landscape or nursery stock, please shoot some pictures and send them in to us so we can share these with IPM Alert participants.



## Warm Weather of March 13 and 14

By: Stanton Gill

It reached the high 70 °F temperature range last week, and the bugs responded. Brown marmorated stink bugs were coming out of hiding and being found re-entering houses during the day. Landscapers are reporting that boxelder bugs are gathering on sunny sides of buildings and on sidewalks. Steve Arrington reported armyworms in large numbers crossing roadways in Fredrick County. The warm spell is getting everyone excited, including the bugs.

So far this spring, we are about 7-10 days ahead of a "normal" schedule, if such a thing still exists.



In early spring, boxelder bug adults and brown marmorated stink bug adults that overwintered are active.  
Photos: Suzanne Klick, UME

## Spotted Lanternfly 2024

By: Stanton Gill

We should see spotted lanternfly egg masses hatching around 270 degree days, which is not too far off into April. Paula Shrewsbury and I will alternate weeks on articles updating activity of the spotted lantern fly in Maryland. Egg masses found low on trees can be scraped off and destroyed. Horticultural oil at a 3% rate can be sprayed onto egg masses you cannot reach or easily scrape off. Suzanne Klick compiled a summary of our weekly IPM Alerts covering spotted lanternfly activity in 2023. She has published this on our IPMnet website. For the summary, go to: <https://extension.umd.edu/sites/extension.umd.edu/files/2024-03/2023%20Spotted%20Lanternfly%20IPM%20Report%20Summary%20for%20Maryland.pdf>.

## 2024 Expansion of SLF Quarantine Zone in Maryland

### From the Maryland Department of Agriculture:

ANNAPOLIS, MD (March 11, 2024) – The Maryland Department of Agriculture has taken a significant step in its ongoing efforts to control the invasive spotted lanternfly. The department has announced the expansion of its spotted lanternfly quarantine zone to include two new counties – Charles and Garrett – effective immediately. This quarantine restricts the movement of regulated articles that might contain the spotted lanternfly in any of its life stages, including egg masses, nymphs, and adults.

The [full press release](#) is available online.

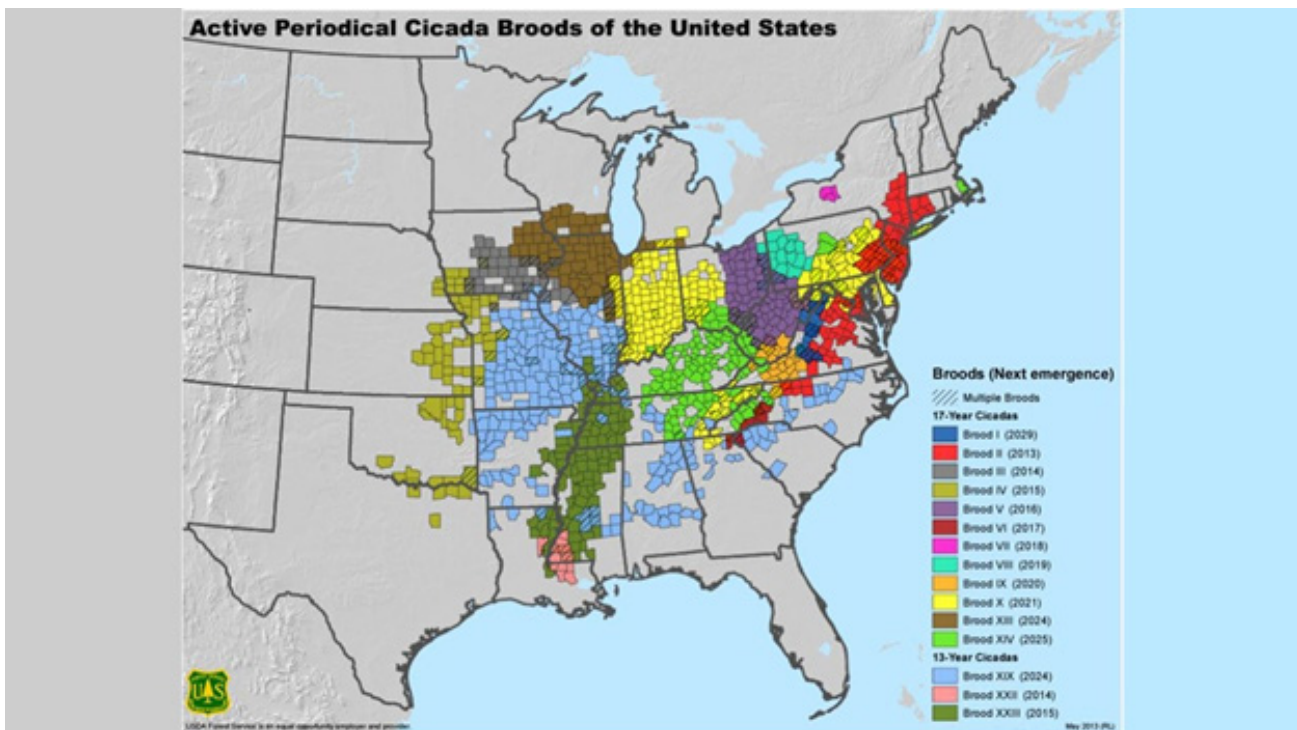
## 2024 and Periodical Cicadas

By: Stanton Gill

Well, many central Maryland nursery growers will remember the Brood X periodical cicadas and the damage they did to nursery plants. Don't worry – the cicadas that are coming in 2024 are not ones that will impact much of Maryland.

You could say that 2024 belongs to the cicadas, at least in the mid-west and southern USA. The eastern part of Pennsylvania will be impacted. This spring, two different broods of cicadas, one that lives on a 13-year cycle, and the other that lives on a 17-year cycle will emerge at the same time from underground in a rare, synchronized event that last occurred in 1803.

This dual emergence event will mainly impact southern and mid-west states and skip Maryland. The spring of 2024 is turning into an exciting time with the spectacular solar eclipse in April, and now this dual emergence event for cicadas. Some are calling this year's dual emergence a once-in-a-lifetime event. While any given 13-year brood and 17-year brood can occasionally emerge at the same time, each specific pair will see their cycles aligned only once every 221 years. What's more, this year's cicada groups, known as Brood XIII and Brood XIX, happened to make their homes adjacent to one another, with a narrow overlap in central Illinois and parts of Indiana. The 17-year Brood XIII is due to emerge in Northern Illinois, and the 13-year Brood XIX will emerge in parts of the southeastern US. Both events are due to begin in late April.



You can view this map online at <https://www.fs.usda.gov/foresthealth/docs/CicadaBroodStaticMap.pdf>  
Map: USDA Forest Service



## Boxwood Pest Activity is Warming Up: Leafminers and Spider Mites

By: Sheena O'Donnell, UME

The warm 70 °F weather last week on the 12th - 15th accelerated development time for boxwood leafminer and spider mites. At our research center in Ellicott City, we are seeing increased activity from boxwood leafminer larvae within the leaves. Marie Rojas, IPM Scout, sent an email on February 29 reporting that at a site in Montgomery County she found larvae starting to become orange. Larvae are bright orange when they are about to pupate. Luke Gustafson, The Davey Tree Expert Company, found active leafminers earlier in the month in Catonsville. He noted that "Variegated cultivars of boxwood certainly hide the damage better, but the insects are still there removing leaf tissue."

**Control Options:** The larval damage has already been done, and they will be molting to adulthood too soon to apply anything that targets larvae at this time of year. The most efficient course of action at this point in time would be to wait for adult emergence, which coincides with weigela bloom (141 Degree-days). At peak adult emergence, you can apply a contact treatment before they lay eggs, but this timing window is relatively small (only a week or two). Alternatively, apply a systemic when the newly hatched eggs enter their first larval stage, but before summer diapause, to attack larvae while they are feeding.

Boxwood spider mites are not yet active in our location, but eggs are present. This mite hatches earlier than many other mites, so you can expect to see hatching soon if the warm weather continues. Thoroughly check petioles and undersides of leaves for eggs. If there are no adults present yet, then you could use a 3% hort oil to treat the egg stage.



**Boxwood leafminer stage on March 5 in Catonsville.**  
Photo: Luke Gustafson, The Davey Tree Expert Company



**A view of boxwood leafminer larvae under the microscope. This leaf was checked on March 18 from our research center site in Ellicott City.**  
Photo: Sheena O'Donnell, UME

## Maryland Weather Station Network

By: Kelly Nichols, UME-Montgomery County Extension Office

[Maryland Mesonet](#) is a new network of weather stations across the state. Currently, there are seven active stations; once complete, the network will have 70 stations across the state. The stations give constant readings on soil temperature (good crabgrass emergence indicator!), air temperature, relative humidity, wind speed, cumulative rainfall, snow depth, and soil moisture. Maryland Mesonet is a collaboration between the University of Maryland and the Maryland Department of Emergency Management.

**Note from Andy Kness, UME-Harford County:** Data from the UMD research and education weather stations are available on the [AGNR website](#).

## Need to Check How Many Pesticide Credits You Have?

By: Kelly Nichols, UME-Montgomery County Extension Office

Not sure how many pesticide credits you still need? There is a way to check! Most states in our region, as well as D.C., have an online database that you can log into to see the status of your license. These websites can also be used to find upcoming meetings that are approved for credits. If you have issues logging in or have questions about your license, reach out to the appropriate agency, also listed below.

### D.C.

Online Database: [D.C. Plants](#)

Department of Energy and Environment: [website](#), 202-535-2600

### Delaware

Online Database: [Delaware Applicators Search](#)

Delaware Department of Agriculture: [website](#), 302-698-4571, amanda.strouse@delaware.gov

### Maryland

Online Database: [Maryland Pesticide Licensing and Certification](#) (Note: your code number can be found on the postcard or the renewal email from a .gov address.)

Maryland Department of Agriculture: [website](#), 410-841-5710, Pest.reg@Maryland.gov

### Pennsylvania

Online Database: [PA Plants](#)

Pennsylvania Department of Agriculture: [website](#), 717-772-5231, pesticides@pa.gov

### Virginia

Virginia Department of Agriculture and Consumer Services: [website](#), 804-786-3798, opsclrt.vdacs@vdacs.virginia.gov

### West Virginia

Online Database: [WV Plants](#)

West Virginia Department of Agriculture: [website](#), 304-558-2209

## Incised Fumewort

By: Sara Tangren

Have you seen incised fumewort (*Corydalis incisa*)? This frilly, little wildflower is surprisingly invasive. Originally from East Asia, this species has been spreading southward along the I-95 corridor from New York since 2005. The first iNaturalist observations of incised fumewort in Maryland were made in the spring of 2018. As of this writing, Maryland contains 259 Research Grade observations. Many gardeners report that the seeds must have been present in potted plants or mulch that they purchased. In our parks, incised fumewort quickly outcompetes native spring wildflowers, and particularly dramatic declines in Virginia bluebells have been observed in the Bull Run floodplain (Northern Virginia).

Incised fumewort came into bloom in mid-March this year and normally continues blooming until early April. Seeds ripen within three weeks of blooming. Ripe seeds are explosively dispersed up to 10 feet away from their parent plants. They may also be dispersed by flowing water, tracked mud. Some reports indicate they are dispersed by ants.



Gardeners and landscape maintenance professionals tell us that manual control is unreliable at best. In some cases, even very persistent, frequent episodes of manual control have failed. Chemical control is more effective, but has its own challenges, such as unintended damage to nearby native plants.

In either case, it helps to understand that the species is biennial. The flowers of second-year plants are easy to see, but seedlings are inconspicuous. If management only targets flowering plants, that can be a viable strategy. But for folks who didn't realize there were also seedlings present, it can be shocking to see that despite all your hard work there are even *more* flowering plants the next year. This gives the impression that management is failing, which may or may not be true. My casual observation is that seedlings (dicotyledons present) germinate in both spring and fall. I suppose the spring germinators go dormant for the summer and re-emerge in fall while the other seeds are germinating. The resulting rosettes are fully evergreen. The rosettes have a small, soil-colored tuber. For those of you doing manual control, make sure to remove it.

Your landscape work helps to protect the properties you manage and your local parks. You can also help by reporting this plant when you see it. You can do that quickly and easily using the iNaturalist app. Just point, click, and upload. There is even a space there where you can leave us some notes. Your observation will contribute to a publicly available map that is used by many land management agencies and their volunteers (Weed Warriors) to prevent new infestations from becoming established.

If you would like to read more about incised fumewort biology, a native look-alike, and making iNaturalist reports, check out this article by the National Park Service.

<https://www.nps.gov/articles/000/incised-fumewort-corydalis-incisa.htm#:~:text=Identification,supported%20by%20a%20tiny%20tuber>.



**Volunteer examining an area where a new clump of incised fumeworts are displacing Virginia bluebells  
Photo: Sara Tangren**



**The distinctive, two-toned purple flowers of incised fumewort  
Photo: chipperbirder, iNaturalist, cc-by-nc**



## Horse Fly

By: Stanton Gill, UME

Kelly Billing, Water Becomes A Garden, sent in a photo of a horse fly larva. Kelly noted that they were free swimming in growing beds in Joppa. Kelly reported that she noticed quite a few last year, however they were smaller. Horse fly larva (Tabanidae, likely *Tabanus*) are aquatic/semi-aquatic predators. They can give a painful jab if held, but otherwise are not a pest (except the adults I guess).



**Horse fly larva were active in aquatic growing beds in Joppa.**

**Photo: Kelly Billing, Water Becomes A Garden**

## Eastern Tent Caterpillars

Ginny Rosenkranz, UME, is finding hatched eastern tent caterpillars that have already started forming their tents in trees in Salisbury this week.

**Control:** Mechanical control works well. Reach into the tent, tear it open, pull out the caterpillars, and toss them in a bag and dispose of them. If necessary, you can also spray foliage with Bt or Conserve which give good control with minimal impact on beneficials.



**Look for eastern tent caterpillar hatch and tent-making this week.**

**Photo: Ginny Rosenkranz, UME**

## **Crape Myrtle – Best Pruning Techniques**

By: Stanton Gill

First off, thanks to all of you who sent in comments, pictures, and published article on how best to prune crape myrtles. I drove over to a shopping mall in Columbia and saw crape myrtles that had been butchered back to major branches. This mal-practice appears to be fairly prevalent throughout the Maryland area.

We are including several comments from professional horticulturists in the landscape and arborist industry. Through education, hopefully, we can clean up this practice of severe pruning.

### **Bruce R Fraedrich Ph.D., Bartlett Tree Research Laboratory, VP/Research (Retired):**

Dr. Ed Gilman published research that evaluated different pruning techniques on flowering and growth of crape myrtle (see attached). Essentially, topping and pollarding was deleterious to flowering and promoted shoot growth which could be viewed as increasing maintenance in the long term. Although the deleterious effects of topping and pollarding crape myrtle have been documented for at least fifteen years, many homeowners and landscape companies have been slow to embrace change. Promoting proper pruning techniques as described in the ISA Best Management Practices for Pruning is as valid for crape myrtle as any other tree species.

You can view the article, ' Pruning Method Affects Flowering and Sprouting on Crapemyrtle' online at <https://hort.ifas.ufl.edu/woody/documents/articles/EFG0905.pdf>.

### **From Jon Cholwek, Pogo Tree Experts:**

Both large and small Crape Myrtle trees should never be topped.

Some landscape companies top their clients' Crape Myrtles every winter in order to make extra money during a slow period. A property owner's budget would be better spent pruning trees and shrubs on their property that actually require it.

To quote Michael Dirr in *The Manual of Woody Landscape Plants*, "The brutal massacre of Crape Myrtles to fist size and larger trunks looks terrible and results in long supple weak shoots which arch and cascade over like a pendulous tree. The Architectural framework and bark of a Crape Myrtle are exquisite and deserve to be preserved by proper pruning."

The correct way to prune Crape Myrtles is to prune out dead branches and thin up to 20%-25% by pruning out interfering trunks, limbs and branches, and raising the branch level if required to clear sidewalks for pedestrians or over a street to clear vehicles. If the Crape Myrtles have unfortunately been topped, corrective pruning can be done one year later and then every other year as needed.

Another option if they have growth too tall and the screening is gone is to perform a crown reduction pruning by reducing all limbs down to approximately 6'. Note make each cut a various height for a natural look. A three-step method should be practiced, and each final cut should be a clean cut at a slight angle. Crape myrtles can also be rejuvenated by pruning down to 12"-18" from the ground. They will produce new growth by mid / late summer and flowers. ISA best practice recommends pruning Crape Myrtles in late winter or early spring, but they also can be pruned after flowering in late summer or fall.

### **From Dave Setliff:**

This is a money maker way to prune the plants. Yearly you have to do a hard prune, after 2-3 years you will have to spray and fertilize every year. In 10 years or so because you have caused the plant to suck extra stored reserves from the roots to regrow what it had already produced the plant will die or flower so poorly it has to be replaced. Stick to pruning off the old flower heads, some thinning in the crown, and rejuvenation on a 3 to 5 year rotation depending on the number of leads the plant has. Oh and an IPM program for insects/disease.

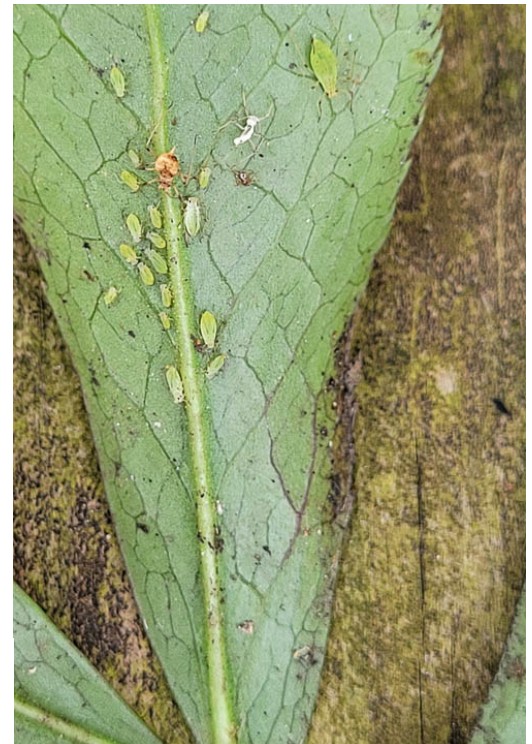




**Before and after photos of a rejuvenated crape myrtle after proper pruning.**  
Photo: Jon Cholwek, Pogo Tree Experts

## **Aphids on Hellebores**

Marie Rojas, IPM Scout, reported that aphids were alive and well and feeding on the undersides of the leaves on *Helleborus orientalis*. She noted that "a number of years back the Hellebore aphids didn't die over winter and just surged early in the season." Monitor plants for these aphids since they can increase in number quickly.. Check plants for aphid mummies to see if wasp parasitoids are active. Also look for syrphid fly larvae and lady beetles.

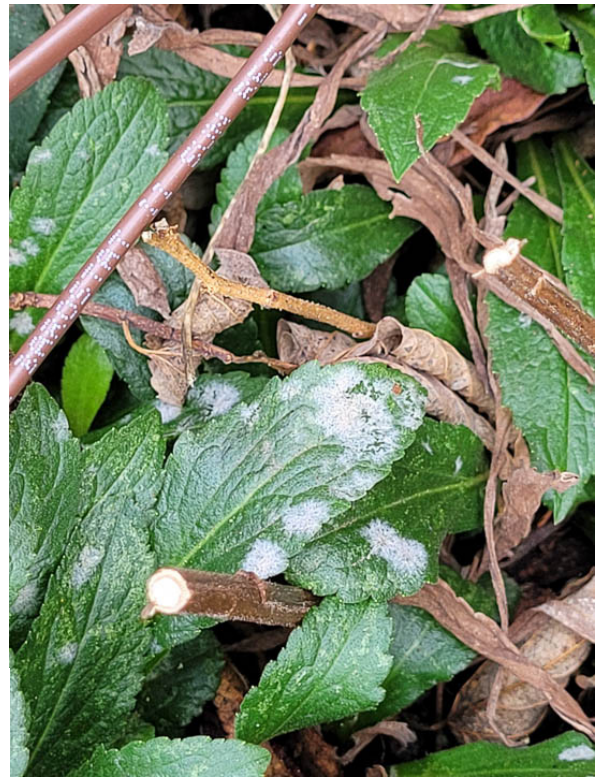


**There is one aphid mummy (tan in color) in the photo indicating some beneficial insect activity among this hellebore aphid population.**  
Photo: Marie Rojas, IPM Scout



## When Leaving Leaves in Place

In January, Marie Rojas, IPM Scout, found powdery mildew on the overwintering leaves of 'Fireworks' goldenrod plants in beds where she had not raked the fallen leaves. She noted that the beds that had been raked out were not affected. Marie also reported the following; "a dwarf Chamaecyparis that I'd had in a bed for 15+ years was completely girdled by voles. Again, this was in a bed where I'd left the fallen leaves. The entire plant was loose and when I grabbed a hold of it, it came right out of the ground!"



**Powdery mildew infecting goldenrod leaves where the area was not raked in the fall.**

**Photo: Marie Rojas, IPM Scout**



**A dwarf chamaecyparis in the ground for over 15 years came out of the ground very easily and revealed heavy vole damage. It was in an area that was not raked in the fall.**

**Photo: Marie Rojas, IPM Scout**



## An Early Season Predator - Orange Assassin Bug

David Freeman, Oaktree Property Care, found an orange assassin bug on a crape myrtle infested with crapemyrtle bark scale in Herndon, Virginia on March 16. The adults overwinter in sheltered locations so they become active during the warm weather in early spring. Both nymphs and adults are generalist predators of insects. Paula Shrewsbury, UMD, covered it as a Beneficial of the Week in the [July 14, 2023 IPM Report](#).



**An orange assassin bug that overwintered as an adult is active in mid March in Virginia.**

**Photo: David Freeman, Oaktree Property Care**

## Beneficial of the Week

By: Paula Shrewsbury

**As you design your landscapes and nurseries, select plants to provide season long food for natural enemies and pollinators**

Happy spring everyone! It is the time of year when we are planning and planting for the season. As decisions are made as to what to plant there are several factors to consider in addition to just aesthetics. Today I will focus on plants and the resources they provide for beneficial insects. Plants provide resources in the form of nectar and pollen for beneficial insects such as pollinators and omnivorous natural enemies, in addition to alternate prey for natural enemies.

Numerous studies have shown that more diverse plantings (more species of plants and greater vegetation complexity) provide a greater diversity of resources and therefore support a greater abundance and diversity of beneficial insects, and biodiversity in general. Greater diversity leads to more resilient and sustainable systems. Research has also documented that urbanization, agriculture



**Syrphid fly (predator) adult on a Shasta daisy flower (Asteraceas) feeding on nectar and pollen. Syrphid fly females require pollen to produce eggs.**

**Photo: P.M. Shrewsbury, UMD**

and certain plant management practices can result in the decline of beneficial insects and their overall diversity and abundance are at risk, along with the ecosystem services they provide (ex. biological control, pollination). One of the simpler ways to mitigate ongoing declines in beneficial insects is to incorporate plants that provide floral resources (nectar and pollen) and alternate prey that will attract and sustain beneficials. Green industry professionals and the public in general should know which plants provide resources that help to conserve beneficial insects. Knowledge on and implementation of these practices can be used to improve profits and quality of life. For example, trees, shrubs, and flowering plants can be marketed at higher prices for their added benefit of supporting beneficial insects (ex. attractive to pollinators; attractive to natural enemies). Secondly, you can be stewards of the environment by recommending and installing plants and / or designing landscapes that favor pollinators and/ or natural enemies. Conservation practices also help to retain ecosystem services provided by insects such as pollination and biological control. "Natural" biological control helps reduce

pest outbreaks and reduces economic and environmental costs (less pesticides are needed) associated with the management of landscapes and nurseries.

One thing to remember is that not all plants are created equal in the nutritional value of their nectar and pollen. Over the past 20 plus years, numerous research studies have been conducted evaluating the attractiveness and nutritional value of flowering woody and herbaceous ornamental plants, both native and non-native, to pollinators and natural enemies. There are several good research-based resources as to which plants are best at conserving pollinators and/ or natural enemies. At the end of this article I provide a list of these resources and their web links. This is not nearly an inclusive list but these are some of the sources I have found to be useful.

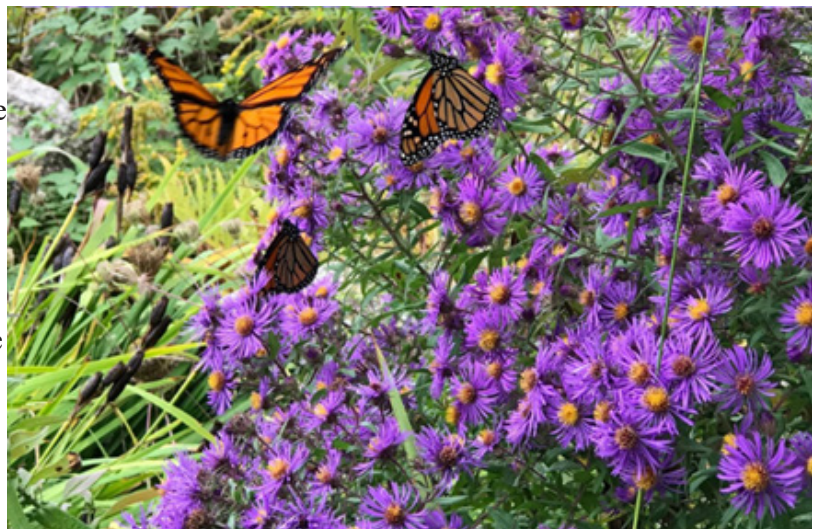
In addition to choosing the appropriate plant species for conserving pollinators and natural enemies, there are several other factors to consider. For example, plants should be selected so at least a few species of plants are in bloom at any given time throughout the entire season. Most challenging are plants that bloom very early in the season (some trees fulfill this niche) or very late in the season. For example, the solitary “tube nesting” mason bees become active around the middle of March in MD. Mason bees began activity last week in Columbia, MD. These early season solitary bees have been seen foraging on maples (*Acer* spp.), witch hazel (*Hamamelis x intermedia* ‘Arnold Promise’), and Oregon grape (*Mahonia aquifolium*) to name just a few early blooming plants. Also, a clump or cluster of the same flower species are more attractive than isolated plants. Flowers should vary in their floral architecture as big flowers (ex. Compositae) will attract different insects than small flowers (ex. Umbelliferae). Choose plants with several colors of flowers. Include native grasses that provide overwintering habitat for some predators. Plant species and floral architecture diversity is good!

Since lack of optimal floral resources are only one of several factors that negatively influence pollinator and natural enemy health, also keep in mind other measures to reduce detrimental impacts on beneficials. Practicing IPM, including implementing management tactics other than pesticides, or selecting pesticides that have been



**Golden alexanders, *Zizia aurea* (Apiaceae), provides early season floral resources for natural enemies and pollinators. The plant is a herbaceous perennial in the carrot family and is native to the U.S.**

Photo from <https://sciotogardens.com>



**New England aster, *Aster novae-angliae* (Asteraceae), is a fall nectar source that research has shown to attract a diversity of pollinators and natural enemies. This plant is a herbaceous perennial and native to the U.S.**

Photo from <https://bagleypondperennials.com>



shown through research to have less detrimental impacts on beneficials, are all part of the “strategy” to protect pollinators, natural enemies, and biodiversity to create resilient and sustainable landscapes and nurseries.

Below are web-based resources on flowering trees, shrubs, and herbaceous plants that have been shown through research to provide optimal floral resources for pollinators and/or natural enemies (note this is not nearly an inclusive list), in addition to other recommendations towards the conservation of beneficials while managing key pest insects (ex. pesticide selection, timing of application, formulation):

- Multistate bulletin on *Protecting and enhancing pollinators in urban landscapes for the U.S. North Central Region*

[http://msue.anr.msu.edu/resources/how\\_to\\_protect\\_and\\_increase\\_pollinators\\_in\\_your\\_landscape](http://msue.anr.msu.edu/resources/how_to_protect_and_increase_pollinators_in_your_landscape)

- The Xerces Society: Conservation of diverse arthropods (ex. pollinators, monarch butterflies, natural enemies)

<http://www.xerces.org/>

- Xerces Society – List of *Pollinator-Friendly Plants – Mid-Atlantic Region* at:

<http://www.xerces.org/pollinator-conservation/plant-lists/>

- Native plants attractive to natural enemies and pollinators (Michigan State University)

<http://nativeplants.msu.edu/>

<http://nativeplants.msu.edu/resources/publications>

- University of Maryland Extension – Home and Garden Information Center (UME HGIC – provide a diversity of information related to horticulture and growing healthy plants.

<https://extension.umd.edu/programs/environment-natural-resources/program-areas/home-and-garden-information-center/>

## Weed of the Week

By: Kelly Nichols, UME-Montgomery County Office

This week’s weed is Italian arum (*Arum italicum*), also known as Italian Lords and Ladies. It is a herbaceous perennial plant that is native to the Mediterranean region and considered invasive in the United States. Italian arum will grow to approximately 18 inches in height and width. It has distinct white-veined, arrowhead-shaped, waxy leaves which are a pale green color (Figure 1). These leaves can be present throughout the winter in milder climates. It will produce a pale yellow hooded-shaped upright spathe that covers a spadix (a group of tightly clustered flowers around a fleshy axis); the spathe will appear in late May to June. Small flies, which assist with pollination, can detect its unpleasant odor. The foliage will die back in summer, before the tight cluster of berries appear. The berries are light green at first appearance, then turning bright orange as they mature in late summer/early fall (Figure 2). Italian arum reproduces through seeds (animals may assist in their spread) and small corms. It is sold for use in landscapes as a cultivated ornamental; however, it can spread into turf.



Figure 1. Italian arum foliage.

Photo: Ansel Oommen, Bugwood.org



Be aware that Italian arum is considered at least a skin irritant, and is considered by some as poisonous. There is limited information on effective herbicides. The waxy leaves make it difficult for herbicides to penetrate the plant. Mechanical removal is another option. If you choose this route, wear gloves and protective clothing to ensure it does not touch your skin. Carefully dig around the plants to remove as many of the corms as you can, but be mindful that some may be left behind which will help with next year's plants. Plants that are removed should be placed in a bag in the trash, and not in compost piles.



**Figure 2: Italian arum berries.**  
**Photo: Kelly Nichols, UMD Extension**

## Plant of the Week

By: Ginny Rosenkranz

*Quercus palustris* also goes by the common names of pin oak, swamp oak and Spanish oak, and is a native tree in Maryland, the Northeast up to south eastern Canada, and north central states. Plants can reach 60-70 feet tall, 25-40 feet wide and are cold hardy up to USDA zone 4. They thrive in full sun and prefers moist, rich, loamy, acidic soils that are well drained. Pin oak is tolerant of occasional wet soils, sulfur, urban conditions and deer, but not tolerant of high pH soils. The leaves will show signs of iron chlorosis which causes yellowing of the leaves in the summer and if not corrected will destroy the tree. One of the distinctive characteristics of the pin oak is that the lower branches hang downwards, the middle are straight out to the side while the upper branches reach upwards. The dark green leaves are alternately placed on greenish brown stems, and are green on both top and bottom, widest in the middle with 5-7 lobes with a small bristle that is an extension of each of the veins. The underside also has a cluster of hairs in the vein axils of each leaf. When young, pin oak is strongly pyramidal with a



**Mature form of a pin oak in the landscape.**  
**Photo: Ginny Rosenkranz, UME**



straight central leader, but becomes more oval-pyramidal as it ages. In the spring the twigs of the previous year bear the yellow pendulous monoecious male flowers called catkins, releasing thousands of tiny pollen particles into the air. The female flowers are produced a bit later on the current year's growth so they do not get fertilized by the same tree. In the autumn the fruit matures into a tan acorn with a thin smooth cap that covers about ¼ of the nut. Once the weather begins to chill, the dark green leaves change to russet, bronze or red. During the summer pin oak is home to a large variety of caterpillars including the imperial moth, lots of hairstreak species, and duskywing caterpillars. Lots of small mammals and deer feast on the acorns in the fall. Some cultivars include 'Crown Right' which has a more upright habit, 'Green Pillar' ("Emerald Pillar") a columnar form and 'Sovereign' that doesn't have the lower branches hanging downwards, instead they are held out horizontally. Pests can include galls, the Spongy moth caterpillar and oak wilt.



Male pin oak flowers starting to open.  
Photo: Ginny Rosenkranz, UME

### Degree Days (as of March 20)

Annapolis Naval Academy (KNAK)	88	Baltimore, MD (KBWI)	101
College Park (KCGS)	91	Dulles Airport (KIAD)	118
Ft. Belvoir, VA (KDA)	114	Frederick (KFDK)	87
Gaithersburg (KGAI)	82	Greater Cumberland Reg (KCBE)	68
Martinsburg, WV (KMRB)	49	Millersville (MD026)	96
Natl Arboretum/Reagan Natl (KDCA)	145	Perry Hall (C0608)	71
Salisbury/Ocean City (KSBY)	121	St. Mary's City (Patuxent NRB KNHK)	160
Susquehanna State Park (SSQM2)	80	Westminster (KDMW)	114

Important Note: We are using the [Online Phenology and Degree-Day Models](#) site. Use the following information to calculate GDD for your site: Select your location from the map Model Category: All models Select Degree-day calculator Thresholds in: Fahrenheit °F Lower: 50 Upper: 95 Calculation type: simple average/growing dds Start: Jan 1

### Pest Predictive Calendar "Predictions"

By: Nancy Harding and Paula Shrewsbury, UMD

In the Maryland area, the accumulated growing degree days (DD) this week range from about **49 DD** (Martinsburg) to **160 DD** (St. Mary's City). The [Pest Predictive Calendar](#) tells us when susceptible stages of pest insects are active based on their DD. Therefore, this week you should be monitoring for the following pests. The estimated start degree days of the targeted life stage are in parentheses.

Euonymus leaf-notcher caterpillar – egg hatch (**37 DD**)

White pine weevil – adult first activity (**84 DD**)

Eastern tent caterpillar – egg hatch (**86 DD**)  
 Boxwood spider mite – egg hatch (**141 DD**)  
 European pine sawfly – larva, early instar (**154 DD**)  
 Woolly elm aphid – egg hatch (**163 DD**)  
 Inkberry holly leafminer – adult emergence (**165 DD**)  
 Spiny witchhazel gall aphid – adult/nymph (**171 DD**)  
 Boxwood psyllid – egg hatch (**184 DD**)

See the [Pest Predictive Calendar](#) for more information on DD and plant phenological indicators (PPI) to help you better monitor and manage these pests.

## Phenology

PLANT	PLANT STAGE (Bud with color, First bloom, Full bloom, First leaf)	LOCATION
<i>Acer rubrum</i> (red maple)	First bloom Full bloom	Ellicott City (March 7) Ellicott City (March 14)
<i>Claytonia virginica</i> (spring beauty)	First bloom	Clarksville (March 16)
<i>Forsythia</i>	First bloom	Columbia (March 12)
<i>Lindera benzoin</i> (spicebush)	First bloom Full bloom	Ellicott City (March 15) Ellicott City (March 20)
<i>Sanguinaria canadensis</i> (bloodroot)	First bloom	Clarksville (March 16)
	First bloom	Ellicott City (March 24)

## Conferences

### April 19-20, 2024

Youth Arboriculture Career Expo  
 Location: Gallaudet University  
 For more info: 202-826-6314

### May 2, 2024

Pest Walk in Salisbury  
 Location: Salisbury University

### May 22, 2024

MAA Pest Walk  
 Location: CMREC, Ellicott City, MD

### June 4, 2024

MNLGA Program: Focus on Garden Centers  
 Location: Ladew Gardens, Monkton, MD

### June 5 and 6, 2024

Biological Control Conference for Greenhouses, Nurseries, and Landscapes  
 Location: Central Maryland Research and Education Center, Ellicott City, MD

### June 14, 2023

Eastern Shore Pesticide Recertification Conference  
 Location: via Zoom



**June 20, 2024**

UMD Extension and MNLGA Technology Field Day  
for Nurseries

Location: Ruppert Nurseries, Laytonsville, MD

**October 9, 2024**

MNLGA Retail Day

Location: Homestead Gardens, Davidsonville, MD

**June 28, 2024**

Procrastinator's Pesticide Recertification Conference

Location: Montgomery County Extension Office,  
Derwood, MD

Go to the [IPMnet Conference Page](#) for links  
and details on these programs.

**September 17 and 18, 2024 (rescheduled from  
March)**

Cut Flower Program

Locations: Central Maryland Research and Education  
Center, Ellicott City, MD and locations in Howard Co.

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