UNIVERSITY OF MARYLAND EXTENSION

TPM/IPM Weekly Report

for Arborists, Landscape Managers & Nursery Managers

Commercial Horticulture **April 15, 2022**

In This Issue...

IPMnet
Integrated Pest Management for Commercial Horticulture

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

Coordinator Weekly IPM Report:
Stanton Gill, Extension Specialist, IPM and Entomology for Nursery, Greenhouse and Managed Landscapes, sgill@umd.edu. 410-868-9400 (cell)

Regular Contributors:
Pest and Beneficial Insect Information: Stanton Gill and Paula Shrewsbury (Extension Specialists) and Nancy Harding, Faculty Research Assistant
Disease Information: Karen Rane (Plant Pathologist) and David Clement (Extension Specialist)
Weed of the Week: Chuck Schuster (Retired Extension Educator)
Cultural Information: Ginny Rosenkranz (Extension Educator, Wicomico/Worcester/Somerset Counties)
Fertility Management: Andrew Ristvey (Extension Specialist, Wye Research & Education Center)
Design, Layout and Editing: Suzanne Klick (Technician, CMREC)

Ambrosia Beetles

By: Stanton Gill

On Wednesday, April 13th, Richard Uva sent pictures of beetles captured in his baited alcohol traps in Federalsburg (Eastern Shore). He had the first *Xylosandrus germanus* (black stem borer) show up in his traps.We checked our traps at CMREC on April 14 and we only had *Monarthrum fasciatum*, a native ambrosia beetle, showing up in our traps. Marie Rojas, IPM Scout, found at least 20 *Xyleborinus saxesenii*, fruit-tree pinhole borer, in a trap in Montgomery County on April 14.

Pollen Counts - Out the Roof This Week

By: Stanton Gill

Several people in the nursery industry, including myself and Andrew Ristvey, are suffering from the high pollen counts this week. We entered into the "high pollen count", which is more than 439 pollen grains per cubic meter of air, earlier this week. Andrew reports pines and oaks are producing lots of pollen on the Eastern Shore. It is reported that we will be in the "Very High Pollen" category for this weekend. You might want to dust off that Covid mask you were using this winter and wear it outdoors.

Boxwood Blight, Again!

By: Karen Rane, UMD.

Boxwood blight causing defoliation in the landscape. Photo: John Verbrugge, Arader Tree Service, Inc, Pennsylvania

In the past 2 weeks, several boxwood samples have been confirmed with boxwood blight in the UMD Plant Diagnostic Lab. This disease usually is most active in spring and fall in our area, but the pathogen can be active any time temperatures are moderate (upper 50s to 80s °F) and high humidity or leaf wetness occurs for several hours. The "Trifecta" of symptoms for boxwood blight includes dark leaf spots, dark stem cankers and defoliation (usually starting at the lower branches and moving upward). Because other disorders or insect pests can mimic some of these symptoms, it's important to get a laboratory diagnosis to confirm the disease if you are unsure. Sanitation (such as removal of severely infected shrubs like those in the photo) is a critical step in managing this disease. Protectant fungicide applications (along with sanitation) may be a viable option in some high-value landscapes, but repeated applications are necessary and properties having numerous boxwoods may need to target individual shrubs for this expensive management strategy. Progress has been made in developing boxwood cultivars with a high level of tolerance/resistance to boxwood blight, and these are increasingly available in the trade. A group of scientists have been working diligently to address this disease, and have collaborated with AmericanHort's Horticultural Research Institute to develop a website (boxwoodhealth.org) where some of the most recent research information is posted. Under the "Knowledge Center" tab, they have posted videos, a symptom photo gallery, and extension resources related to boxwood blight and its management. Check it out!

Plum Curculio Flight Starting

By: Stanton Gill

Plum curculio adult
Photo: E. Levine, The Ohio State University, Bugwood.org

Last week, we mentioned plum curculio would be active soon. We placed out baited sticky pheromone traps on April 8 in Lisbon and a second one in Westminster. We have found six in the trap in Westminster. This insect is one of the first of the season that will damage apples, pears, plums, or quince. The adult overwinters in leaf litter so we cannot predict emergence with degree days, but we can use baited pheromone sticky traps to catch the overwintering adults. It is a native pest with one generation per year. The damage shows up later in the season with a crescent-shaped wound on the fruit. When the larvae are fully developed, they will leave the fruit through clean exit holes. No frass or webbing will be evident. Frass is usually found around the calyx end on codling moth damaged fruit. Timing is everything with this pest. Just as the lower petals are dropping, apply your preventative insecticides. Avaunt insecticide has worked well for us in the past two years of trials.

Arizona Cypress

By: Stanton Gill

Three weeks ago, we asked readers of the IPM alert to let us know if they were successfully growing Arizona blue cypress. The Latin name is *Hesperocyparis arizonica,* previously known as *Cupressus arizonica.* First off, thanks to the many e-mails that were sent in letting us know where the plant has been successfully grown in Maryland. It appears it has been established in several landscapes and grown in several nurseries in Anne Arundel, Montgomery, Howard, Frederick, Calvert, and Prince George's Counties. We found out that some Christmas growers are growing this plant and shearing the foliage 4 – 5 times a season to shape it into an attractive Christmas tree. It is also being grown in areas of Pennsylvania.

From Wade Smith, Stauffers Home and Garden

"I would like to reply to the question of growing Arizona blue cypress, While we don't grow it for sale, we had a specimen at our store in Dover, PA for several years and it was looking great until a few years ago a manager cut it down for no apparent reason. It was doing quite well and was in a rather exposed location to winter winds and such. It was probably 10-12' tall when chopped down."

Steve Clancy took us to a landscape in Central Maryland where they had installed Arizona cypress several years ago. The plants were about 14-16 ft tall at this point and had beautiful blue foliage. The one thing I see is you should take off the multiple trunks it tends to develop so it has a single trunk that is less likely to be damaged by heavy snows.

An Arizona blue cypress growing in Central Maryland

We received in this email from P. Eric Wiseman, Associate Professor of Urban Forestry, Dept. of Forest Resources and Environmental Conservation Virginia Tech:

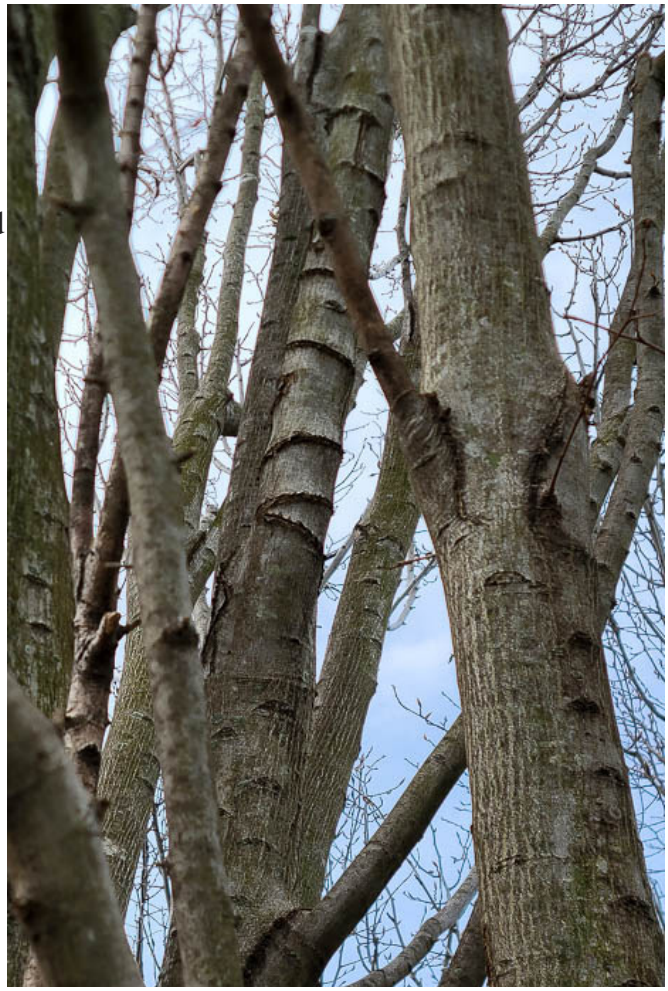
"I'm not in Maryland, but I have an Arizona cypress in a special collection of trees I maintain in the Hahn Horticulture Garden at Virginia Tech. I planted this specimen in 2010 (https://www.plantsmap.com/organizations/452/plants/580) and it has not missed a beat with our cold and humidity (which I had hypothesized might be a limitation). It is growing like a weed. The photos above (on the web page) were taken around 2016, and I suspect that it has nearly tripled in size. In fact, it has gotten so big so fast, that I would be concerned about its use as a screening plant (would outgrow its space on small parcels like we've seen with Leyland over the last 30 years). Probably better suited for a specimen or a screen on large properties."

From what we see of this plant, this looks like a good relatively fast-growing plant that can help diversify plants used for screening in landscapes. It also looks pretty good as Christmas tree if you are willing to shear it multiple times during the year.

Carpinus Problems

By: Stanton Gill

Marie Rojas, Professional IPM Scout, sent in these pictures of *Carpinus* trees with raised ridges in the bark of the branches. This is the *Agrilus carpini* beetle with the larval damage to the branches. We saw this species 15 years ago in Maryland nurseries, then plants started flying out of the nursery rows and into the landscape and the problem seemed to go away. Well, it is back.



Agrilus* beetle damage on *Carpinus fastigiata
Photo: Marie Rojas, IPM Scout

An arborist sent this email this week noting that "Our Gaithersburg office has reported that European hornbeams are getting crushed by these *A. carpini* beetles." I haven't confirmed the species by rearing out the insects but it does seem highly likely. We did rear them out 15 years ago and shot several pictures of the adults which are posted on the web.

David Shetlar, Retired entomologist with The Ohio State University sent this email: "Classic gouty growth caused by the hornbeam *Agrilus*, *A. carpini*. This used to be a subspecies of the two lined chestnut borer, but has now been confirmed to be a distinct species. It has a real affinity for European hophornbeam.

I've seen it repeatedly attack susceptible trees which can cause branch dieback and breaking. Occasionally, it is able to girdle young trees at the base which then causes tree death."

Dan Gilrein, Entomology Specialist with Cornell University sent this email: "It looks a bit regular but still may be an *Agrilus* sp, Here are a couple of photos from *Carpinus* in Manhattan with damage that we attributed to an *Agrilus* sp. When I asked whether this could be from *A. bilineatus/ carpini*, Marc DiGirolomo responded:

"In your area, *Agrilus obsoletoguttatus* is another common species which feeds on *Carpinus*. There are others that aren't quite as common (*champlaini*, *ohioensis, sulcicollis*). I would also consider *Chrysobothris femorata*, another common buprestid with a wide host range that includes *Carpinus*."

***Agrilus carpini* beetle pulled out of a European hornbeam (2009)**
Photo: Stanton Gill

During years with high populations, I have seen *A. bilineatus* attacking recently planted oaks in nurseries, sometimes very heavily. That typically happens after a year or two of spongy (ex gypsy) moth outbreaks, where the borer population rises in weakened trees and I think must be 'spilling over' into susceptible oaks nearby.

Cold Damage on Fruit Plantings

By: Stanton Gill

Well, if you did not get cold damage from 2 weeks ago, you might have it after the serious frost that was reported in the counties of Baltimore, Carroll, Montgomery, Harford, and on the Eastern Shore on April 11 and the morning of April 12. Fruit and flowers were damaged in several areas and even on lilac.

Fertilizer Costs Just Keep Going Higher

By: Stanton Gill

In past years, Russia exported 11% of the world's urea, and 48% of the ammonium nitrate. Russia and Ukraine together export 28% of fertilizers made from nitrogen and phosphorous, as well as potassium, according to Morgan Stanley. It is time to look at ways to cut back on chemical fertilizer inputs until the market settles down.

Tuliptree Scale

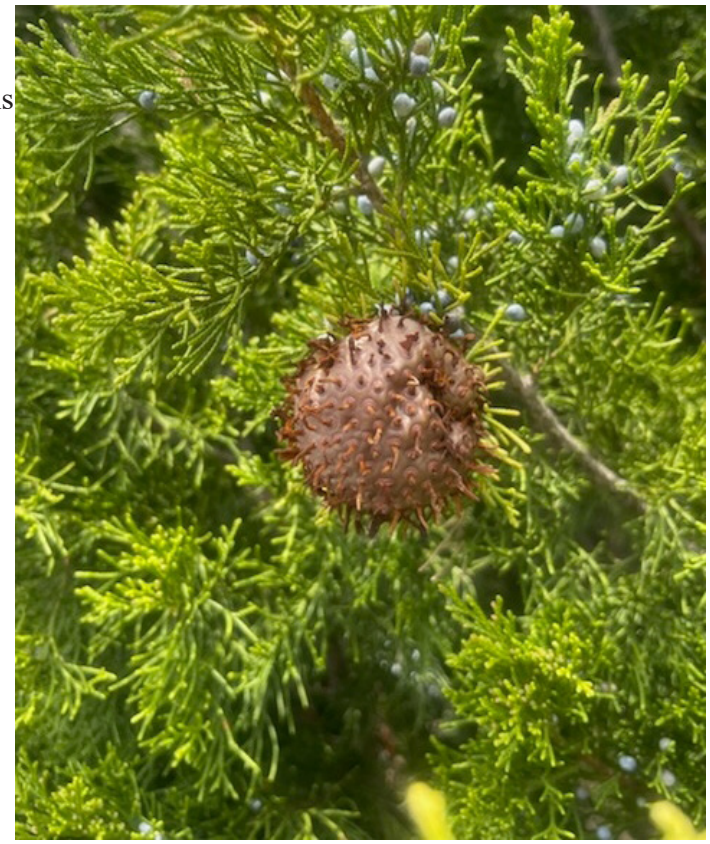
Marie Rojas, IPM Scout, found black immatures (2nd instars) of tuliptree scale on magnolia in Gaithersburg on April 14. This stage will swell up through and mature later in the summer. Look for crawlers in September.

Look for the second instars of tuliptree scale on magnolias and tuliptrees at this time of year
Photos: Marie Rojas, IPM scout

Gymnosporangium Rust Gall

R. Scott Rupert sent in a photo of a gymnosporangium rust gall that he found in Urbana. When the spores become gelatinous, be sure to start your spray applications on susceptible rosaceous plants.

For details on gympnosporangium rusts, see the April 1, 2022 IPM Report.



Monitor gymnosporangium rust galls to see when they become gelatinous and start releasing spores
Photo: R. Scott Rupert

Boxwood Leafminers

John Hochmuth, Jr., sent in a photo of a boxwood leaf opened up to show leafminer pupae within. Look for adults flying over the next few weeks. It's not quite time to apply control measures when they are still in the pupal stage. We will include control options in next week's report.

Boxwood leafminers are reaching the pupal stage in various parts of Maryland. Look for adults to start flying over the next few weeks.
Photo: John Hochmuth, Jr.

Spotted Lanternfly

By: Stanton Gill

The cool, slowly progressing spring is elongating everything. We are at under 150 degree days for much of the state. According to the degree day chart from Penn State Extension, we will not see nymphs until starting at **240 degree days** GDD: 240 - but they continue to emerge up to 1174 Degree days. If you prefer looking at plant stages for indicators, then emergence begins when quince (*Cydonia oblonga*) or saucer bagnolia (*Magnolia x soulangeana*) are blooming which is usually the start of egg hatch.

For an illustration of the life cycle, go to https://www.emilydamstra.com/spotted-lanternfly-illustrations-and-map/. Penn State has a management guide available at https://extension.psu.edu/spotted-lanternfly-management-guide.

Apple Scab

Kari Peter, Penn State Extension, provided management information for apple scab last year. You can find this disesae update at https://extension.psu.edu/2021-disease-update-apple-scab-infection-event-april-24-25.

Eggs of Katydid on Apple Branches

By: Stanton Gill

Lynn Moore, while pruning apple branches, noticed these eggs on some of the apple branches. They are katydid eggs, family Tettigoniidae are commonly called katydids, or bush crickets, that were laid late in the fall. The eggs will hatch this spring. Fortunately, katydids are not a major pest and nothing needs to be done.

Look for katydid eggs lined up along small woody stems

Germination of Japanese Stiltgrass

Mark Schlossberg, ProLawn Plus, Inc., found stiltgrass germinating in Glyndon this week. We will include control options in a future report.

Japanese stiltgrass is starting to germinate in the state Photo: Mark Schlossberg, ProLawn Plus, Inc.

Beneficial of the Week

By: Paula Shrewsbury

What eats spider mites?

Spruce spider mite, *Oligonychus ununguis*, has been active on needled evergreens this season. They feed on 40 species of conifers, and most commonly on needled evergreens such as spruce and hemlock. Spruce spider mite is more of a "cool season" mite and most active in the spring and fall months. They have a sucking type mouthpart that removes chlorophyll from plant cells, and their feeding results in fine yellow spots, referred to as stippling, on the foliage. Fine webbing is also associated with spider mites. The other spider mite that will start to show up soon is the two-spotted spider mite, *Tetranychus urticae*, which are active during the heat of the summer. Two-spotted spider mites are herbivorous mites that feed on a wide range of deciduous trees, shrubs, and herbaceous and annual plants. Two-spotted spider mite is commonly found on the underside of foliage, and also cause stippling damage to plant foliage. We will likely see more activity as the hot weather continues to move in.

A predatory mite (right) in the family Phytoseiidae feeding on a two-spotted spider mite (left).
Photo: Jack Kelly Clark, UC Statewide IPM Program, University of California

Adult *Neoseiulus californicus* predatory mite sucking the contents from a plant-feeging mite egg.
Photo: Jack Kelly Clark, UC Statewide IPM Program, University of California

There are numerous predators of spider mites such as predatory mites, lady beetles, dusty wings, and lacewings. Lady beetles and predatory mites are the most common and likely have the greatest impact on spider mite populations. Several species of **predatory mites** are natural enemies of plant feeding mites. Many of the predatory mites attacking spider mites are in the family Phytoseiidae. Species important to Maryland include *Phytoseiulus*, *Galendromus*, and *Neoseiulus*. Predatory mites have needle-like chelicerae (mouthparts) that they insert into spider mite adults, nymphs or eggs to remove the fluids of their prey. Phytoseiid mites are about the same size as spider mites but their bodies are tear-drop or pear shaped, they tend to be a clear yellow to orange color (depending on species and sometimes prey item), have no spots, and most life stages have 8 legs. Relative to plant feeding mites, phytoseiids have longer legs and run faster. Remember they must forage or hunt for their food and having long legs is helpful. Predatory mites occur in nature and they can be purchased commercially and released (known as augmentation biological control). Most documented success with augmentative release

of predatory mites has been in indoor environments such as green houses or conservatories. If you are going to try releasing predatory mites in outdoor environments be sure you have plenty of prey (mites) on the plants and that you release the correct predatory mite species. In outdoor environments, naturally occurring predatory mites can be very effective biological control agents in ornamental landscapes and nurseries. In addition to plant feeding mites in the Tetranychiidae family, predatory mites also feed on eriophyid and bulb mites, and insects such as eggs and early instars of thrips, whiteflies, and scale insects.

Most important to the success of naturally occurring predatory mites is the selection and use of pesticides that have minimal impact on these predators to help in their conservation and build-up of these natural enemy densities. Many pesticides in the pyrethroid class are known to have long term detrimental impacts on predatory mite populations and should be avoided on plants with spider mites or spider mite prone. Use of some pesticides in the neonicotinoid class have also been shown to result in secondary outbreaks of spider mites (ex. imidacloprid on hemlocks for adelgid control). Other miticides, such as those on the "EPA reduced risk" list (ex. acequinocyl [Shuttle], bifenazate [Floramite], fenpyroximate [Akari], and others) or horticultural oil, have been shown to have reduced or little impact on predatory mites (always follow label instructions). It may take a year or two of "wise" pesticide use to build up effective predatory mite populations. This practice will also help to conserve other natural enemies of spider mites and other pest insects. Select and implement IPM practices that will give these good guys a chance to increase their populations and decrease spider mite densities and damage.

Weed of the Week: Buttercup

By: Kelly Nichols, UME-Montgomery County

Buttercup is best identified by its bright yellow flower. The flowers have not yet made their appearance this year; however, that does not mean buttercup is not there! Now is the best time to control this perennial weed.

Bulbous buttercup, *Ranunculus bulbosus*, is found in turf, nursery and landscape settings in many areas of the United States. It is one of a few *Ranunculus* species that we have in Maryland. It prefers low fertility, poor soils, and soils that remain wet for extended periods of time.

Seedlings develop with leaves divided into three lobes, occurring on petioles. As the plant matures, the central lobe develops on an independent stalk, and the lateral lobe is attached to the main leaf petiole. Leaves are alternate along the stem. Stems will develop between ten and twenty inches in length or height and will be hairy. Yellow flowers with five to seven petals are on stalks at the end of flower stems. The root system has a corm, which is very similar to a bulb. Young plants may only be present with a thickened base on the root system. This plant can be mistaken for corn buttercup, but can be distinguished by the bulbous corm on the root, which corn buttercup will not have.

Figures 1 and 2. Bulbous buttercup is a perennial herb that prefers low fertility and poor soils that remain wet for extended periods.
Photos: Chuck Schuster, UME Ag Agent, Emeritus

Control on bulbous buttercup starts with soil improvement. Take a soil test if you don't have one. Adjust pH and ensure that you have optimum soil fertility levels. Review drainage and improve where possible. Many broadleaf post emergent herbicides work when this weed presents in turf. 2,4-D, MCPP, dicamba, and carfentrazone-ethyl (Speedzone)

and other combination products that have 2,4-D will work well with this weed. Now is the time to apply a post-emergent herbicide (before the flower is present). Be aware of temperature considerations with these active ingredients as some have the ability to volatilize and move to other sites when the weather gets warm. Be cautious of landscape plants nearby. Make sure that the buttercup is actively growing. Post-emergent non-selective products can be used in landscape settings. Buttercups can be manually removed, but this only works if you remove the corms when digging or pulling.

Figure 3. Bulbous buttercup has a corm root system
Photo: Chuck Schuster, UME Ag Agent, Emeritus

Plant of the Week: Virginia bluebells

By: Ginny Rosenkranz

Mertensia virginica or Virginia bluebells are a wonderful native spring blooming flower that thrives in rich, moist, well drained soils in full to part shade. These herbaceous perennials emerge as a clump in the early spring to a height of 1 ½ to 2 feet tall and 1 ½ feet wide. In April, the pink flower buds form on the top of arching stems. As the flowers mature to a nodding elongated bell shape, the flowers turn a sky blue color. Cold hardy in USDA zones 3-9, Virginia bluebells like the coolness of spring because the soft blue-green foliage goes dormant in the heat of mid-summer. It is always a good idea to plant Virginia bluebells with native ferns or other shade loving annuals or perennials to fill in the blank areas. There are no serous pests listed, and the plants are tolerant of rabbit nibbling.

Virginia bluebells do well in full to part shade
Photos: Ginny Rosenkranz, UME

Degree Days (as of April 13)

Aberdeen (KAPG)	94
Annapolis Naval Academy (KNAK)	150
Baltimore, MD (KBWI)	173
College Park (KCGS)	138
Dulles Airport (KIAD)	169
Ft. Belvoir, VA (KDA)	198
Frederick (KFDK)	116
Gaithersburg (KGAI)	131
Gambrils (F2488, near Bowie)	154
Greater Cumberland Reg (KCBE)	108
Martinsburg, WV (KMRB)	108
Natl Arboretum/Reagan Natl (KDCA)	238
Salisbury/Ocean City (KSBY)	252
St. Mary's City (Patuxent NRB KNHK)	268
Westminster (KDMW)	159

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 calculatorThresholds in: Fahrenheit °F Lower: 50 Upper: 95 Calculation type: simple average/growing dds Start: Jan 1

Conferences

Links for more information and to register will be provided when available.

May 17, 2022
MAA and UMD Extension Pest Walk
Location: Brookside Gardens, Wheaton, MD

June 10, 2022
Montgomery County Annual Procrastinator's Conference
The 27th Annual Procrastinator's Pesticide and Urban Nutrient Management Conference will be held on Friday, June 10. This in person meeting will take place at the Montgomery County Extension Office in Derwood. Registration information will be posted on the IPMnet Conference webpage once details are finalized.

June 17, 2022 (Virtual)
Contact: Ginny Rosenkranz, rosenkrnz@umd.edu

June 24, 2022 (Virtual)
Turf Program
Contact: Mark Carroll

June 30, 2022
Greenhouse Biological Control Conference
Location: Maritime Institute, Linthicum Heights, MD

July 28, August 4, and August 11, 2022
Drone Training Program

Commercial Ornamental IPM Information
extension.umd.edu/ipm

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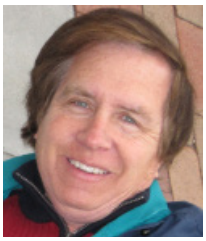

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Photos are by Suzanne Klick or Stanton Gill unless stated otherwise.