UNIVERSITY OF MARYLAND EXTENSION

TPM/IPM Weekly Report

for Arborists, Landscape Managers & Nursery Managers

Commercial Horticulture **June 4, 2021**

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:
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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)

Cold Spring Continues

By: Stanton Gill

We were going for a record cold spring, and it continued through the Memorial Day weekend with temperatures in the mid 50s °F on Saturday and Sunday. The cold weather slowed cicada activity in many parts of the state. The cold spring has delayed flower opening on our hardy kiwis to June 2nd. This is the latest I have seen these plants bloom in any season. We had wet springs in 2018, 2019, and 2020. Now, we have a cold spring with interesting impact on plant development. It is now predicted to shoot up into the 90s in the next week.

Pollen – Extremely Heavy This Season

By: Stanton Gill

Pollen counts over the last couple of weeks have been ridiculously high in 2021. We are getting a lot of reports of people leaving their cars parked in a spot for one day, and a thick coating of pollen has formed. Some people are reporting a coat of pollen inside their car on the dashboard and radio faces. The weather has been perfect for pollen production this spring, and hence the heavy pollen layers on everything.

From the Huffington Post: "Unfortunately, we are seeing an increase in pollen counts on a yearly basis, and this **is** due to global warming and an increase in CO_2, which we know plays a role in higher pollen counts," said Payel Gupta, an allergist and immunologist and medical director of the at-home allergy clinic.

What are Brood X Periodical Cicadas doing this week… The Cicada-palooza is underway!
By: Paula Shrewsbury

In many areas of MD and VA, the big party is happening in the treetops with music, romance, and reproduction all going on. In the last week or so, I have heard chorusing trees in three MD counties (Howard, Frederick, and Montgomery) and had reports of chorusing from northern VA.

Brood X periodical cicadas mating
Photo: P.M. Shrewsbury, UMD

I have received several questions regarding these “very loud trees”. What you are hearing are likely two different species of cicadas (there are 3 species of 17-year cicadas). The higher pitched "pulsing” sound are *Magicicada cassini*. The almost background "whir" sound is from *Magiciada septendecim*. With the decims, you will also here a call that sounds sort of like "pha...roah, pha...roah" which is what the male does when a female is close and the male is really trying to impress her (courtship song). Decim is the most common species followed by *M. cassini*. The third species, *M. septendecula*, is less common and more of a repeated chirp call. What you are hearing are choruses in a tree made up of thousands of cicadas. The way it works is a few males of a species start singing in a tree and attract other males of the same species, all with the ultimate goal to attract females to share their genes. You end up with lots of males of a species "chorusing" in a tree. I have not seen data on this, but I would predict the louder they get, the more attractive they are to females. If you notice when an airplane flies overhead the choruses get louder, like they are competing to be the loudest and most attractive to a female. Each species not only has its own unique song, but within a species there are different songs (ex. courtship, distress). You can hear recordings of the different species and their different songs at this link: https://www.cicadamania.com/cicadas/cicada-songs-audio-sounds-noise/

Female Magicicada septendecim ovipositing into a branch. Note her ovipositor inserted into the wood.
Photo: P.M. Shrewsbury, UMD

In the last few days, I have noticed MANY more cicadas flying in general, but also flying between trees, and on and off the same tree. If you watch closely, you will see cicada flight and landing synchronized with their chorusing. It’s thought that the cicadas sing, often in unison, and when a female does not respond, the male alights from its branch and lands on another branch or tree. Some friends and I have been measuring the sound level of the cicada choruses. In my yard, they were averaging around 75 decibels, in No. VA the chorus hit 84 decibels. For perspective, most lawnmowers are around 85 decibels. There are reports of choruses reaching up to 100 decibels… time for ear protection.

I have seen lots of mating and oviposition (egg laying) underway on trees. The females use their ovipositor to make egg nests (small slits) in pencil-sized twigs where they deposit 20-30 eggs per egg nest and often several egg nests in a row. Often distal to the site of the egg nests a branch you will see branch dieback or flagging. I have not seen any flagging damage on trees YET.

If you live in areas that are a little cooler, be patient. If you had cicadas in 2004, you should have them again this year. Go outside, enjoy and learn from this amazing event happening in your own yard.

Remember as you see cicadas, please upload pictures and ***help us track Brood X periodical cicadas with the Cicada Safari App!***

If you see and/or have images of **birds eating cicadas**, please report birds feeding on cicadas at this link.

For more information on Periodical Cicadas see:
- Cicada Crew UMD website
- Cicada mania website

Egg nests recently laid by a periodical cicada. Each egg nest (slit) has about 20-30 cicada eggs.
Photo: P.M. Shrewsbury, UMD

Infected Cicadas

On June 3, Todd Armstrong, The Davey Tree Expert Company, found a cicada with a white abdomen which indicates the cicada is infected with an entomopathogenic fungi called *Massospora cicadina* in Towson. It is the fungal mycelium growing out of their body.

This periodical cicada is being killed by the entomopathogenic fungus, *Massospora cicadina*
Photo: Todd Armstrong, The Davey Tree Expert Company

Cicadas – Statewide Update

By: Stanton Gill

Cicada adults finally showed up in Westminster on May 31. We checked with people in Washington County and Garrett County, and they just started seeing adult activity June 1st as it warmed up a bit. There is not a lot of activity yet, but it has begun in these western counties.

This week, Marie observed periodica cicadas laying eggs on sweet gum in Gaithersburg this week. She also found broken stems due to egg-laying injury on dogwoods in Beallsville.
Photos: Marie Rojas, IPM Scout

Is this another way to eat a cicada?
Photo: Amanda Laudwein

2021 MDA Pesticide Container Recycling Program

See the brochure for dates and locations

Pulvinaria floccifera – Cottony Camellia/Taxus Scale Update

By Nancy Harding and Paula Shrewsbury

In the May 7th and May 28th IPM Alerts, we reported finding ovisacs (white cottony sacs filled with eggs produced beneath and behind the female scale) of the cottony camellia/Taxus scale) on hollies and yews. This week, crawlers (egg hatch) were found on a 'Dragon Lady' holly located in Olney. The accumulated degree days on June 3rd were **719DD.**

Look for the crawlers of cottony camellia/ Taxus scale

Cottony camellia/Taxus scale tends to be limited to camellia, *Taxus*, Chinese holly, and jasmine, although it can infest English ivy, euonymus, hydrangea, maple, mulberry, pittosporum, and rhododendron. This scale has become very widespread in Maryland on *Taxus* and Chinese holly.

Check the degree day accumulations in your area, if they are close or above **719DD**, you should look for active crawlers. If crawlers are present and the populations are high, now is the optimal time to apply a control. There are several control options available including use of Distance or Talus. The systemic insecticides such as dinotefuran, Altus, and Mainspring all work well on this scale.

For more information on Cottony camellia/taxus scale go to:

https://bugoftheweek.squarespace.com/blog/2013/1/8/flocked-hollies-cottony-%20camellia-scale-pulvinaria-floccifera

https://extension.umd.edu/resource/cottony-camellia-scale-shrubs

Red Thread in Turf

Mark Schlossberg, ProLawn Plus, Inc., sent in a photo of red thread in turf that he stated was the worst infection he has ever seen. This disease is known to thrive in low N-fertility areas. Supplying N-fertility during infection periods may help to alleviate some of the symptoms, but keep in mind that red thread is very persistent in the spring months.

Red thread thrives in low nitrogen areas
Photo: Mark Schlossberg, ProLawn Plus, Inc.

Japanese Maple Scale

By: Stanton Gill

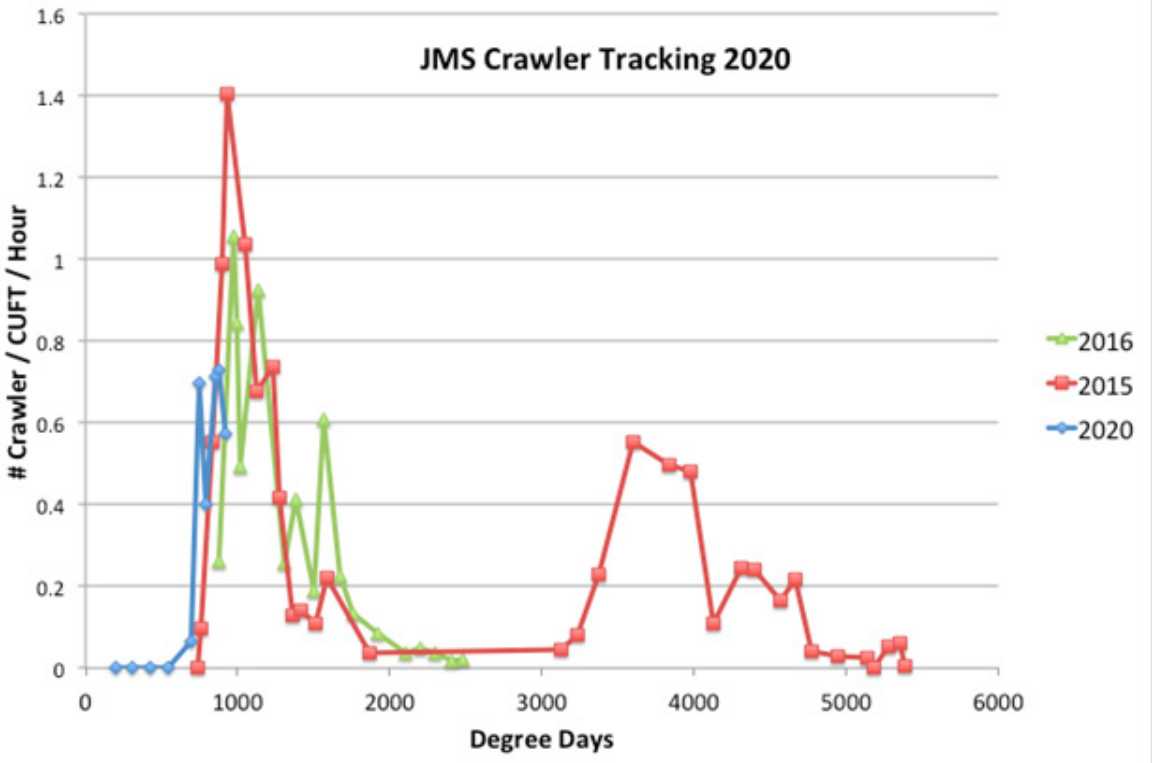
Heather Zindash sent in photos of a *Tilia americana* that had several branches dying back from the top of the tree. The tree is heavily infested with Japanese maple scale, *Lopholeucaspis japonica.* When Heather flipped over the female scale covers, she found a large number of purple eggs on May 31. Heather also reported finding adults, pupae, and larvae of twice-stabbed lady bird beetles. It is still too early for Japanese maple scale hatch, so hold back on spraying at this point.

Tree dieback on this *Tilia americana* is due to an heavy infestation of Japanese maple scale Photo: Heather Zindash, The Soulful Gardener

This especially nasty scale infests a wide range of host plants (45 genera in 27 families). It infests some of the most common nursery and landscape plants including heavily used plants in the landscape such as American red maple, Japanese maple, zelkova, dogwood, American holly, Japanese holly, and boxwood. YES – boxwood. Unfortunately, with all of the excitement over the last 1.5 years when everyone was planting like crazy many scale infested plants went out into the landscape.

You can get a complete list of potential host for this scale with great pictures and descriptions by vising our website at http://Extesnion.umd.edu/IPM.

We have a chart of the crawler activity for 2020, and you can see the peak crawler activity is around 1000-1100 degree days and 3500 degree days for the second generation.



Japanese maple scale eggs turn purple when they are close to hatching
Photo: Heather Zindash, The Soulful Gardener

Twice-stabbed lady bird beetle adults and larvae are feeding on the Japanese maple scale on this linden
Photo: Heather Zindash, The Soulful Gardener

Lecanium Scale and Calico Scale

Marie Rojas, IPM Scout, found lecanium scale and calico scale hatching out on June 2 in Beallsville. She noted that the crawlers were still under dead female covers. Many of the lecanium scale crawlers will migrate out onto small twigs and leaves of the oaks in late May to early June. Newly hatched calico scale crawlers are oval-shaped that start off white to pink, then turn yellow. They will move from the trunk and twigs to the leaves of the host plant where they will settle and feed near the leaf vein for the summer. Talus or Distance are good control options for both scale insects.

Boxwood Psyllids

Mark Harrison, Blades of Green, found boxwood pysllids in Silver Spring on May 24. There is only one generation per year. Damage is rarely significant enough to warrant treatment. Materials such as Avid, Endeavor, Altus, or Acephate all control this insect.

Boxwood psyllids are still active at this time of year
Photo: Mark Harrison, Blades of Green

Storm Damage on May 3

We received report of lightning damage from the storms that passed through the area on May 3. A Japanese pagoda tree (*Styphnolobium japonicum*) was hit by lightning around 5:30 p.m. in Olney yesterday.

This Japanese pagoda tree was struck by lightning in last night's storm
Photo: Helen Guilfoyle

Bagworm Hatch

Marie Rojas, IPM Scout, found bagworms starting to hatch out on white pines in Gaithersburg on June 2. Check infested trees for hatch before treating. There is only one generation per year, so it is important to treat early in the season. Bt and Spinosad are two good materials that will control this insect at this stage.

Now is the time to look for egg hatch of bagworms
Photo: Marie Rojas, IPM Scout

Exobasidium Gall

Steve Clancy, Town Creek Landscaping, found exobasium galls on azalea this week. For more information on these galls, see the May 29, 2020 IPM Report.

Exobasidium galls do not impact the overall health of the plant so control is usually not necessary
Photo: Steve Clancy, Town Creek Landscaping

Galls on Hickory

A lot of different galls have been reported this year. Sam Hamner, Good's Tree and Lawn Care, found these galls on a hickory tree in Palmyra, PA. Aphids were also found on this small tree which is in decline.

Galls are covering this young hickory tree
Photo: Sam Hamner, good's Tree and Lawn Care

Pine Bark Adelgid

Annette Cormany, UME, received a photo of pine bark adelgid this week. She noted that the white fluff from their waxy coating had covered the trunk. Trees can generally tolerate relatively high levels of this pest.
Control: Pine bark adelgids are often kept at low populations by a number of different generalist predators (flower fly larvae, lady beetles). Horticultural oil can be applied now or at most times of the year to reduce populations of adelgids. The horticultural oil should help conserve the natural enemies to help prevent adelgid populations from returning to high levels. Wait for egg hatch if you decide to apply a chemical.

Pine bark adelgids do little damage ot healthy trees; look for the presence of predators
Photo: Shanaberger

Potato Leafhoppers

By: Stanton Gill

We are getting reports of nymphs of potato leafhoppers active in several nurseries this week. They are mainly on American red maples and golden raintree foliage.

Nymphs of potato leafhopper are active now

More Aphids

Reports of problems with aphids continue to come in this spring. Marie Rojas, IPM Scout, found a very high population of this colorful aphid on one *Nyssa sylvatica* in Bealsville. Marie is also noticing a lot of aphids on various oaks, *Liriodendron*, as well as several *Tilia* species.

Many aphids are feeding on the stem and foliage of *Nyssa sylvatica*
Photo: Marie Rojas, IPM Scout

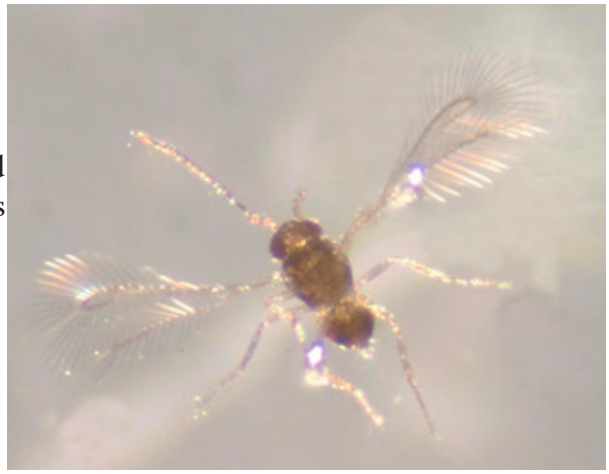
A mating pair of lady bird beetles are on an oak leaf with a lot of aphids
Photo: Marie Rojas, IPM Scout

Beneficial of the Week

By: Rebeccah Waterworth and Paula Shrewsbury, UMD

Mymarid wasps – A group of VERY tiny parasitoids

Mymarid wasps are sometimes referred to as fairyflies or fairy wasps (Order: Hymenoptera). These insects are *not* true flies. They are tiny parasitic wasps in the family Mymaridae. In North America, there are about 145 species of mymarids, and body sizes of most of these are between 0.5 – 1.0 mm long. A mymarid that is considered to be very large 2.5 mm! Moreover, the world's smallest known insect is a mymarid wasp, *Dicopomorpha echmepterygis*, with a body length of only 0.139 mm (0.0055 in.)!



A mymarid adult parasitoid depicting the "feather-like fringe" of hairs on their wings.
Photo: Susan Leach Snyder, BugGuide.org

Unlike closely related parasitic wasps, mymarids do not have a metallic sheen and all are matte yellow, brown, or black. In addition to being extremely tiny, other important diagnostic characters (viewable with a high magnification hand lens) include relatively long antennae that are at least as long as the head and half of the thorax combined, and females have a club-

like segment at the tip. Secondly, the hindwings of mymarids are stalked or narrow at the point they meet the body, unlike most other insects with wings that are broadly attached to the body. Usually, a fringe of long setae (hairs) surrounds the wing tips, giving them a feathery appearance (see image).

All mymarids are egg parasitoids of other insects, and especially of eggs that are concealed or inserted in plant tissue or soil. For example, in the April 30, 2021 IPM Newsletter I discussed the mymarid parasitoid, *Anagrus takeyanus*, that attack the eggs of lace bugs which insert their eggs into leaf tissue. Scientists have been able to determine the host insect of many species of mymarid wasps. The most common hosts (45%) of mymarids based upon verified host records are the eggs of cicadas, leafhoppers, planthoppers, treehoppers, and froghoppers (=spittlebugs). Both armored and soft scale eggs as well as the eggs of plant bugs and lace bugs are the next most frequently attacked. Relatively few eggs of insects that undergo complete metamorphosis, or holometabolous development, are attacked, however, of those the most common families include weevils and predaceous diving beetles.

There are many examples of the deliberate importation of mymarid wasps to areas invaded by serious exotic agricultural pests. This method of pest management is referred to as classical biological control. In a recent case, glassy-winged sharpshooter (a large leafhopper that feeds on xylem sap) had invaded Tahiti and threatened agriculture and native biodiversity. Densities of nymphs and adults were so large in trees that their excretions literally "rained from the sky". A local French name for this pest was *mouche pisseuse* or 'pissing fly.' After the introduction of a mymarid wasp imported for its control, populations of sharpshooters declined by 90% within six months of the final release (Grandgirard et al. 2008). Now that's good biological control! Closer to home, mymarids are also primary parasitoids of potato leafhopper. While this species is a key pest of nurseries, it also is a significant problem in alfalfa. Work with mymarids in July 1994 demonstrated that nearly 70% of leafhopper eggs were parasitized (Lovinger et al. 2000). Female wasps located eggs by walking along alfalfa stems and laying a single egg within the egg of the leafhopper. The developing larvae of the wasps then feed on the contents of the egg, and leafhopper nymphs fail to hatch. Adult mymarid wasps have short life times, usually only a few days.

So remember, sometimes you have to look closely (very closely in the case of mymarids), to see some species of important biological control agents. Click here to see a mymarid wasp parasitizing a leafhopper egg.

Plant of the Week

By: Ginny Rosenkranz

Cornus kousa 'Weaver's Weeping' is a cultivar of the *Cornus kousa* or Kousa dogwood and is a wonderful 4 season plant. It grows 8-10 feet tall and wide with a graceful arching of the branches. *Cornus kousa* are more resistant to anthracnose and other diseases that can be problems for *Cornus florida,* and is far more tolerant of growing in full sun to partial shade. The plants grow best in organically rich, moist but well drained soils and are cold tolerant in USDA zones 5-8. In the spring, the dark green glossy oval-shaped foliage emerges. Later in the spring, the bright white star-shaped bracts surround the fertile flower button in the center, spreading 3-5 inches across. *Cornus kousa* 'Weaver's Weeping' is known for its excellent display of a large number of 'flowers' (actually bracts) each spring that last for 2-4 weeks depending on the weather. The fertile flowers mature into reddish pink rounded drops that sometimes resemble strawberries. Butterflies are attracted to the late spring blooming flowers and birds enjoy the fruit when ripe in the fall. Autumn also brings a burgundy–purple to scarlet color to the leaves when the temperatures turn crisp and chilly. Winter shows off the mottled, exfoliating bark and the graceful weeping silhouette. During the heat of summer, the leaves can scorch unless they are watered at least once a week. There are no serious insects or diseases, and the trees are said to be deer resistant.

Birds feeds on the fruit of *Cornus kousa* 'Weaver's Weeping' in the fall
Photos: Ginny Rosenkranz, UME

Pest Predictive Calendar "Predictions"

By: Nancy Harding and Paula Shrewsbury

In the Maryland area, the accumulated growing degree days (**DD**) this week range from about **589 DD** (Cumberland) to **959 DD** (Reagan National Airport). 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.

- Bagworm – egg hatch (**602 DD**)
- **Cottony camellia / taxus scale – egg hatch / crawlers (649 DD)**
- **Juniper scale – egg hatch / crawlers (694 DD)**
- **Calico scale – egg hatch / crawlers (765 DD)**
- **Oak lecanium scale – egg hatch / crawlers (789 DD)**
- **Japanese maple scale – egg hatch / crawlers (829 DD)**
- **European elm scale – egg hatch / crawlers (831 DD)**
- **Cottony maple scale – egg hatch / crawlers (872 DD)**
- **European fruit lecanium scale – egg hatch / crawlers (904 DD)**
- **Mimosa webworm – egg hatch 1st gen (1002 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.

Degree Days (as of June 2)

Aberdeen (KAPG)	589
Annapolis Naval Academy (KNAK)	778
Baltimore, MD (KBWI)	804
Bowie, MD	833
College Park (KCGS)	694
Dulles Airport (KIAD)	743
Ft. Belvoir, VA (KDA)	761
Frederick (KFDK)	706
Gaithersburg (KGAI)	695
Greater Cumberland Reg (KCBE)	589
Martinsburg, WV (KMRB)	602
Natl Arboretum/Reagan Natl (KDCA)	959
Salisbury/Ocean City (KSBY)	808
St. Mary's City (Patuxent NRB KNHK)	878
Westminster (KDMW)	834

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

Conferences (Recent CDC guideline changes for Covid-19 have reduced restrictions of in-person programs)

Eastern Shore Procrastinators Pesticide Conference on June 8, 2021 - On-line Program
https://www.eventbrite.com/e/2021-eastern-shore-procrastinators-pesticide-conference-tickets-150763609013
Once the attendees pay via evenbrite, they will be emailed the link to the zoom conference.

Greenhouse Program
July 8, 2021
Location: Catoctin Mountain Growers, Keymar, MD

IPMnet
Integrated Pest Management for Commercial Horticulture

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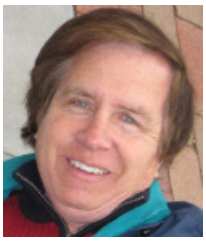

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Photos are by Suzanne Klick or Stanton Gill unless stated otherwise.