

# Mountains

## How to get your firefly-watching fix



**Frances Figart**  
Guest columnist

Great Smoky Mountains National Park announced Tuesday, April 21, that it has canceled its popular ticketed synchronous firefly viewing event in Elkmont Campground for this year to prevent the spread of novel coronavirus. This presents us with both a challenge and an opportunity.

What happens if a firefly flashes in the Smokies and there's no one there to see it? You might guess, as I did, that a break from the crowds should help strengthen the firefly population for the next year. But, as it turns out, the science is not that simple.

"We think of fireflies as flying creatures, and many species are — as adults," says Will Kuhn, director of science and research with Discover Life in America (DLiA). "However, most fireflies actually spend much of their lives (a year or more) as ground-dwelling larvae, milling about the leaf litter feeding on snails, slugs, worms, and other invertebrates."

This soft-bodied larval form is especially vulnerable. Brevard College's Dalton Professor of Biology and Environmental Science, Dr. Jennifer Frick-Ruppert, says "insect populations are really affected by environmental conditions during their larval stages. A cold snap or very dry period during the larval stage can really hurt a population." Conversely, excellent conditions will allow more larvae to metamorphose into adults.

So, what really matters to the fireflies — which are actually beetles — is not how many people see them, but how many larvae are successful when, at the end of their brief life cycle, they "get their wings" and enjoy one "last hoorah." In the case of *Photinus carolinus*, last year that hoorah attracted more than 28,000 people from all 50 U.S. states and 19 countries to enter the lottery for the shuttle ride to view the fireflies at Elkmont.

"It's wonderful (and rare) that an insect — rather than a bear or other vertebrate — can captivate so many visitors," says Kuhn of DLiA, which manages the All Taxa Biodiversity Inventory cataloging every living species in the Smokies.



Fireflies are part of the wonderfully complex web of life in the Smokies and all around our region. This spring could present a time of rare opportunity for those who are watching — and for the fireflies of Elkmont as well.

COURTESY OF RADIM SCHREIBER OF THE FIREFLYEXPERIENCE

### How to see fireflies this spring

But just because there is no lottery or event in Elkmont this year doesn't mean the lights have to go out on firefly viewing. The options are fairly limitless for those willing to take up the challenge of catching "the lightning bug bug."

Lynn Faust grew up spending her summers at a family cabin in Elkmont.

"Like everyone initially, my family and I thought lightning bugs were all the same," she says. "Now I know better."

Faust would go on to become a leading firefly expert. Her book, "Fireflies, Glow-worms, and Lightning Bugs" features more than 70 species of fireflies, including historical backgrounds, a chart documenting flash patterns, and photos that illustrate distinguishing physical characteristics of these captivating insects.

She told me about many species that will be emerging in the Southern Appalachians in the next few weeks, including three that are visible right now:

**Spring Treetop Flasher (*Pyrractomena borealis*)**

The earliest lightning bug to be seen in

our region, treetop flashers begin to display in late March. You can find their yellowish lights up in the tops of trees about 45 to 90 minutes after dark as the males attempt to attract females with a flash about once every two to four seconds.

**Blue Ghost (*Phausis reticulata*)**

Shining so brightly as to cast a spotlight on the ground, beaoning male blue ghosts seem like curious greeters that will approach humans and can stay illuminated for up to a full minute. During April, look for their greenish-blue glow from 9 to 10 p.m. hovering 18-36 inches above the ground in wooded areas of mountains or valleys.

**Shadow Ghost (*Phausis inaccensa*)**

It's not the male but the female of this species who is enlightened. The dark male shadow ghosts fly at night searching for ground-dwelling flightless females who glow from two tail spots as they perch on low vegetation or leaf litter just after sunset.

Many more species can be seen during summer and into fall. "In the biologically diverse southeast," says Faust, "there are easily seven to 20 species of fireflies present at some point in the

year in many dark, non-chemically-treated intact habitats."

Fireflies are part of the wonderfully complex web of life in the Smokies and all around our region. This spring could present a time of rare opportunity for those who are watching — and for the fireflies of Elkmont as well.

Want to catch the bug? Check out one of the following:

- "Fireflies, Glow-worms, and Lightning Bugs: Identification and Natural History of the Fireflies of the Eastern and Central United States and Canada" by Lynn Faust

- Smokies Life magazine, Spring 2020, with glowing firefly cover

- FireflyExperience.org with images, videos and book by Radim Schreiber

- Netflix series "Night on Earth"

- BBC Nature America, "Seven Worlds, One Planet"

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## NC Republican leader: We won't seek budget veto override

**Gary D. Robertson**  
ASSOCIATED PRESS

RALEIGH — North Carolina Senate Republicans won't try any more to override Democratic Gov. Roy Cooper's budget veto from last summer, the chamber's leader said, citing state government's precarious fiscal situation due to COVID-19.

The GOP-controlled legislature had attempted for months to cull enough votes to complete the override and approve its two-year spending plan despite Cooper's objections. But without veto-proof majorities, GOP leaders have needed help from Democrats.

With sales and income taxes drying up or deferred because of the national economic downturn, Sen. Phil Berger told The Associated Press this week the state can't afford to do the level of spending in that vetoed budget. North Carolina will remain under Cooper's stay-at-home order for at least two more

weeks.

The legislature returns on Tuesday for a few days to approve emergency coronavirus spending and policies, with plans to reconvene later in the spring to address regular business. "The Senate will not either next week or in the short session take up the veto override because of the uncertainty in terms of revenue is concerned," Berger said in an interview. "The ability to actually fund all of the things that are in the budget that was vetoed ... is questionable."

While the House succeeded at an override last September during an unexpected vote in which dozens of Democrats were absent, the Senate failed as recently as January to bring over the one or maybe two Democrats they needed. At that time, North Carolina coffers were flush and prospects for another surplus likely. Berger said then that the override could still happen in 2020.

The General Assembly's chief staff economist told Senate budget-writers a

few weeks ago that the state could see overall revenue fall as much as \$2.5 billion below previous collection forecasts for the two-year budget otherwise ending in June 2021.

State government had at least \$3.6 billion in reserves and other cash entering the coronavirus crisis at their disposal to close any gap. But Berger said Thursday he was concerned about covering basic government operations and wanted to avoid the kinds of austerity measures that legislative Democrats had to initiate after the 2008 recession. That included layoffs, furloughs and tax increases.

The Senate's top budget writers wrote to Cooper on Friday asking him to direct his agencies to voluntarily hold back funds equal to 1% of their budgets, or about \$250 million, to provide an additional cushion.

"While the state has built substantial reserves, we do not presently know how severe the economic downturn will be or

how long it will last," GOP Sens. Harry Brown, Kathy Harrington and Brent Jackson wrote. "In other words, we know we're falling off a cliff, but we don't know when we'll hit the ground below."

The vetoed budget bill, which would have spent \$25 billion this year and \$26 billion next year, contained hundreds of millions of dollars for construction expenses for K-12 schools, University of North Carolina and community college system campuses and government buildings. The veto means that money was set aside.

State government is now operating at 2018-19 spending levels with some increases through several noncontroversial funding expansions that Cooper and the GOP agreed to separately from the budget.

Cooper vetoed the budget last June, citing the lack of robust teacher pay, the absence of Medicaid expansion and presence of corporate tax cuts.

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