

# Bluffviews

a quarterly newsletter by Clifftop

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## Do Bees Sleep?

Have you ever taken an early morning walk in a native wildflower garden and discovered a bee just sitting there? You might wonder what it is doing and why it is not busy gathering nectar or pollen. Look closely, it may just be sleeping!

Female bees retreat to their nests to rest. If they are social bees like honeybees, that nest will be a colony or hive. Most of our native bees are solitary bees. Solitary bees don't belong to a colony. Each female makes her own nest and stores pollen inside to feed the larvae that will hatch from her eggs, each in its own nest cell. She will shelter in her nest overnight and while resting between foraging trips.

Solitary male bees have to rough it. They shelter at night and in the rain or cold wherever they can find cover, often right in the flowers that provide them with food or clamping their mandibles onto stems of vegetation. Editor's note: I observed this phenomenon early one morning in 2013 when I went out to feed the birds (see photo below). The bees looked so comfy resting on the flowers.

After finding a suitable roosting site at dusk, the bee will enter a state of suspended animation until the next morning when the sun's warmth makes it possible to fly again.



This poor guy was sopping wet after spending the night clamped onto this stem during a rain storm. Photo courtesy Laura Schaefer.



These sleepy bees provide a wonderful way to get a close look at the beauty of our native bees. You won't hear them snoring, so keep a sharp lookout for them the next early morning you find yourself in a flower patch.



A sleeping bee clinging to *Monarda fistulosa* (bee balm). Photo courtesy Joann Fricke



## Plants of Concern

By Christopher David Benda

The biological heritage of Illinois is rich. Yet, many plant species are in peril. Species that were once common are now relegated to areas that are too steep, too wet, or otherwise unsuitable to farm, graze, or log. These areas comprise the natural areas of Illinois and contain many natural community types that range from prairie, to wetland, to forest, with many types in between.

In 1979, a pioneering project called the Illinois Natural Areas Inventory determined that just 0.07% of the land in the state was considered pristine natural habitat. As a result of this loss of habitat, plants that once occurred throughout the state are now rare. Take the Eastern Prairie Fringed Orchid for example. This beautiful orchid (photo, right) was once draped across the Illinois prairie, as far as one could see, in every direction. Now, most of the prairie is gone, converted to farmland, and so too are most of the Eastern Prairie Fringed Orchids.



But while some plants are gone from the Illinois landscape, all is not lost. Some plant species persist, although they live a precarious existence. They need protection for long-term survival and one program that exists to monitor these rarities is called Plants of Concern.

Originating at the Chicago Botanic Garden, the program relies on volunteers to monitor rare plant populations and has been in place in northeast Illinois since 2001. One of the successes of the program relates to the white lady slipper orchid (pictured below, left). Over time, data collected by volunteers showed that the species has recovered and is stable in appropriate habitat at protected sites, leading to its delisting. Recently, the program was expanded to include southernmost Illinois, and I was hired to coordinate the project through the Plant Biology department at Southern Illinois University Carbondale.



After completing online training and signing a confidentiality agreement, volunteers are tasked with monitoring a rare plant species at a specific location. Population size, reproduction, and threats such as invasive species are shared with land managers to develop the best conservation and management practices to support rare plants and their habitat. The goal is to track changes to the populations over time to ascertain their status as stable, threatened, or endangered in Illinois. This information guides the review process by the Illinois Endangered Species Protection Board (IESPB), which is mandated to occur every 5 years. Currently, there are 266 endangered plant species and 67 threatened plant species in Illinois and a complete list of all the threatened and endangered species in Illinois can be found at the IESPB website:

<https://www2.illinois.gov/dnr/ESPB/Documents/ET%20List%20Review%20and%20Revision/Illinois%20Endangered%20and%20Threatened%20Species.pdf>

With threats like invasive species and anomalous weather events due to climate change, plants need our help now more than ever. We owe it to

all those who came before us and to all those who will follow, to ensure that the biological heritage of the great state of Illinois persists, and hopefully thrives. To become involved with the Plants of Concern program, please visit the website at [www.plantsofconcern.org](http://www.plantsofconcern.org).

Editor's note: The following State threatened/endangered plant species were recently discovered by the Plants of Concern team in Monroe County.



Climbing milkweed (*Matelea decipiens*)  
Photo courtesy Joann Fricke.



Crested coralroot orchid (*Hexalectris spicata*)  
Photo courtesy Travis Neal.



Squirting cucumber (*Melothria pendula*)  
Photo courtesy Travis Neal



Bluehearts (*Buchnera Americana*)  
Photo courtesy Joann Fricke



THIS JUST IN: The eScrip program at Schnucks has ended. You can no longer donate to Clifftop via the eScrip card.



# Citizen Science is the Bee's Knees!

Text and photos by Laura Schaefer

Shutterbee is a Citizen Science project of Webster University, St Louis University, the St Louis Zoo and Missouri Botanical Garden with additional support by Missouri Department of Conservation and the Living Earth Collaborative. It seeks backyard gardeners and bee enthusiasts of the St Louis region to monitor their flowers throughout the summer for bee abundance, diversity and behavior. Participants are given 4-6 hours of initial training and conduct 25-45 minute bi-weekly photographic surveys of the bees and flowers of use in their yards. Data and pictures are uploaded to iNaturalist where it is reviewed by professional and amateur entomologists. Assistance with bee and plant identification is provided.

The collective data of all participants is then gathered into one database where patterns are considered. The overall goal is to understand how landscape features and land management decisions affect bee diversity and behavior. With 227 participants by year two, already 108 different species of bees have been observed with a total of 16,762 observations! That just shows you the power of Citizen Science. Can you imagine how difficult it would be for 1 scientist to make over 16,000 observations in 227 different yards?



Pruinose Squash Bee, *Peponapis pruinosa*, is a specialist bee requiring pollen from squash family plants (Cucurbits).



Louisiana Painted-Dark Bee, *Stelis louisae*, is a cuckoo bee.

The highlights of participating in Shutterbee have been many-fold. While looking for bees I have noticed, photographed and learned about many other insects on the plants in my yard, including pollinating wasps, beetles and flies. After learning that two different wasps I observed needed sand to nest in it occurred to me that there is a pond near me with human-made sandy beaches. My neighbors are unknowingly providing nesting sites, while I am providing their food. One of the wasps is a predator of stink bugs. Being a gardener, I appreciate this wasp for helping me protect my zucchini plants through organic pest control. Another exciting find includes seeing two different kinds of cuckoo bees. Cuckoo bees are parasitoids, which means they are only parasitic during their larval stage of life. Females lay their eggs in another bee's nest.

The cuckoo larva consumes the host larva and the food provisions the host parent has collected for their baby. In addition, cuckoo bees are selective of what species of host bee they parasitize and in my case the bees they desire are also selective in needing pollen from very specific native plants. What all of this means is - if I didn't have a healthy population of a particular native wildflower, I would not have a healthy population of the specialist host bee that collects from it and therefore I would also not have the cuckoo bee.

In other words, cuckoo bees can be indicators of a healthy ecosystem. And lastly, for me it's the bee's knees to find specialist bees. Specialist bees only feed from selective wildflowers. To support a healthy population of specialists means having a good number of plants available for them to feed their babies the pollen they need to grow. It isn't unlike Monarch caterpillars requiring milkweed. You always hear how diversity is good, but providing an abundance and diversity of flowering plants throughout the growing season has been supported by the diversity and abundance of bees I have found in my yard and that has made all of my efforts worthwhile.

Registration and training for the 2021 season has closed, however interested participants can email [shutterbee@webster.edu](mailto:shutterbee@webster.edu) to get on a listserv with updates about the project. More information, including what you can do to help bees can be found at <https://sites.google.com/view/millerstruttmann/shutterbee> You can also follow Shutterbee on Facebook and Instagram.



**Make a Gift Through Your Will, Trust, Retirement Account or Life Insurance Policy**

In the October issue of Bluffviews, we will learn more about charitable giving from Clifftop members who are experts in the field. Please keep this in mind for your year end charitable contributions, when considering your insurance beneficiaries or preparing your will.

**Prairie Tours – Saturday, August 28 and September 25**  
9:00 – 10:00 a.m. Paul Wightman Subterranean Nature Preserve  
3325 G Road, Fulst. Enjoy the beautiful grasses and wildflowers of the restored prairie while learning about the ecology of the plantings on this guided tour by Clifftop Board member and SWIC Biology Professor, Laura Schaefer. This event is free and open to the public, no registration required. Meet at the pavilion near the parking lot.



Please be sure to notify us of your new address. Send updates to [cliffmbr@htc.net](mailto:cliffmbr@htc.net) or call 618-935-2542



# Scenes from Members' Day 2021

