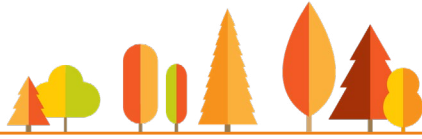




**PEEC**  
Pocono Environmental  
Education Center



# Autumnal Equinox 2023 Seasons

A Quarterly Publication to Advance Environmental Literacy

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Pocono Environmental  
Education Center  
538 Emery Road  
Dingmans Ferry, PA  
570 • 828 • 2319  
peec@peec.org  
www.peec.org

## What Creeps out the Creepy Crawlies?

By George Johnson

What keeps up the spiders at night? What could make them so afraid of leaving their webs? The answer may surprise you: fungus.

Before moving forward, I want to note that spiders do not actually fear fungi. They have not displayed higher levels of emotion. However, if I was a spider, I would be terrified of the fungus *Engyodontium aranearum*. This fungus doesn't have a common name so we can just call it "Ghost Fungus" for now (you'll see why in a minute).

Our "Ghost Fungus" isn't like the other mushrooms you see around the forest. Mushrooms like hemlock varnish and chicken of the woods are decomposers. They gain their nutrients and food from dead organic material. You can find them along the trails at PEEC and they will grow directly out of dead logs. Our mushrooms are very ecologically important since they are breaking down and recycling the nutrients that are trapped inside downed trees. They contribute to the creation and fertilization of soil.

"Ghost Fungus", conversely, belongs to a special family of fungi that are parasitic. They do not wait for their food to die first before growing on them. Their spores will float around the air before attaching to the exoskeleton of cellar spiders. Once attached, they will start growing and eating away at the exoskeleton. It grows so much that it will eventually cover the spider entirely in its white film. Once fully eaten, the mold will send out more spores in search of more cellar spiders.



Cellar Spider (Arachnid Family)



What does the spider do in all of this? It surely must try to do something to fight the mold's growth. Well, it doesn't actually do anything at all. Infected spiders will continue with their days as if nothing is wrong. They'll move in their webs, catch and eat prey, and just hang around without a care in the world. The spiders don't even seem to realize that the fungus is slowly eating away at their tissues. Eventually, the "Ghost Fungus" will end the spider's life.

*Continued on page 5*



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**Design & Layout** Niki Jones Agency, Inc.  
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### Contributing Writers

Susie Chamberlain, Kelly Daly, George Johnson, Sara Neral, Derek Scott, Patti Shriener

### Contributing Photographers

PEEC Staff Photos, George Johnson, James Maloney

## Message from the Executive Director



## NASA Globe Goes to Camp

By Kelly Daly

At the American Camp Association Conference in the spring of 2023, Tina Harte Ballinger, **NASA Globe Goes to Camp** Project Manager enthusiastically engaged youth professionals and encouraged them to bring science literacy into camp settings. I could not wait to learn more about how to bring NASA Globe to PEEC.

NASA Globe offers children the opportunity to participate in citizen science investigations to explore nature, while fostering environmental stewardship and science literacy. PEEC's Junior and Senior Naturalist campers collected

data on land cover, water quality, tree cover, and soil characteristics and uploaded it to GLOBE's data center. We could then make hypotheses about how PEEC fits into the US and the planet Earth. Watching the campers explore the data being collected here, by other GLOBE Camps and members of the GLOBE community, encouraged them to think critically about the world. This helped to expand our campers understanding of how PEEC relates to other areas of the US and the world. Each week we participated with NASA Globe, the campers got to Zoom with a NASA scientist to ask questions, share observations, and learn how NASA uses this data to understand the planet Earth.

PEEC will continue to incorporate NASA Globe programming throughout our education and outreach programs.



*Kelly Daly*



Thanks to our partnership with the Pocono Mountain Visitors Bureau, we now have a virtual tours link on the PEEC website!

TAKE A  
**LOOK AROUND!**

Check out several of the trails, as well as the PEEC campus, at [www.peec.org](http://www.peec.org).



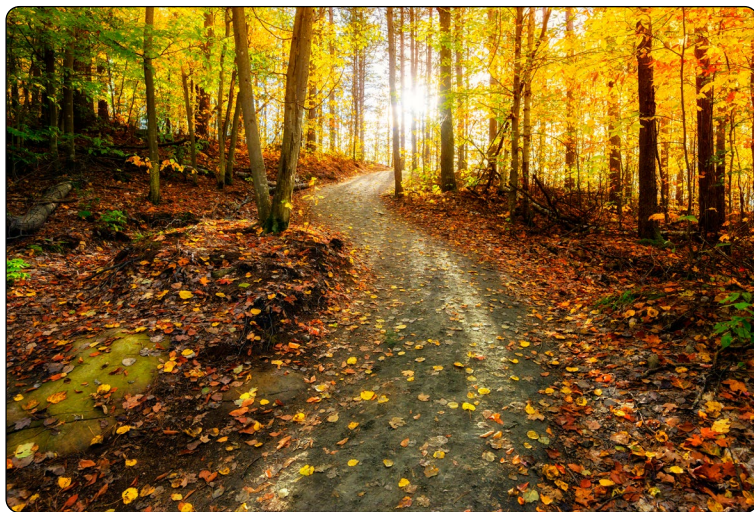
# Colors of Autumn

By Derek Scott

Every year, people across the country are mesmerized by the beautiful colors of autumn. Oranges, yellows, and reds are everywhere you look, but have you ever stopped and wondered why this amazing phenomenon occurs? Yes, the leaves are getting ready to drop from their trees for the season but there is much more to it than that.

Throughout the growing season of spring and summer, leaves spend most of their time producing food for the tree. The green pigment that we associate with leaves comes from the chlorophyll inside; a chemical capable of converting sunlight into chemical energy. Sunlight is absorbed by the chlorophyll and mixed with carbon dioxide and water to yield carbohydrates in the form of sugar and starch.

In the fall, as the days grow shorter and temperatures begin to drop, the trees stop making food and begin preparing for winter. The chlorophyll in the leaves begins to break down resulting in other pigments within the leaves becoming visible. Carotenes and xanthophyll, which are present year-round in the leaves, begin to show their oranges and yellows without being masked by chlorophyll. Around the same time, anthocyanin is produced in the leaves to help draw out the remaining nutrients, resulting in the red pigment associated with fall colors. The chemical compositions within each leaf vary between tree species and can often result in a variety of oranges, yellows, and reds.



Mt. Tammany

Photo Credit: James Maloney



Weather can also play a big factor in the colors of fall from year to year. Late summer droughts will often result in color changes later in the season. Early frosts can cause a rapid turn-over, turning most leaves brown before they truly show their beauty. Warm, wet weather can really dull the colors while cool, overcast conditions make them extremely vibrant.

Unfortunately, all good things must come to an end at some point and the leaves eventually fall from the trees. After all the nutrients have been salvaged, the leaves form thin cell layers between their petiole and the tree, which cuts off the support system of the leaves. While this is happening, the trees will also produce a similar seal along the branch. Once wind knocks the leaf off the tree under its own weight, the result is sealed over area which we refer to as a leaf scar. It is important to note that while most trees will lose their leaves this way, some species, such as the American Beech, will keep the dead leaves until the new growth appears the following spring.

Fall is the time of year when nature really gets a chance to show off its beauty. For most regions, color changes often occur in the early weeks of October. The spectacle doesn't last for very long though, so make sure you get out and enjoy it while you can because it only comes once a year!

Content Credit: SUNY ESF Environmental Information Series



**PEEC**  
Pocono Environmental  
Education Center

Fall in love with  
**FALL**

**HARVEST FESTIVAL**  
SATURDAY, OCTOBER 14, 2023 • 11AM - 4PM





**\$5**  
PER CAR







**PEEC**  
Pocono Environmental  
Education Center

**13<sup>TH</sup> ANNUAL  
GAME DINNER**

SATURDAY, NOVEMBER 18 • 6PM - 8PM

**\$45/PERSON • CALL EARLY!**

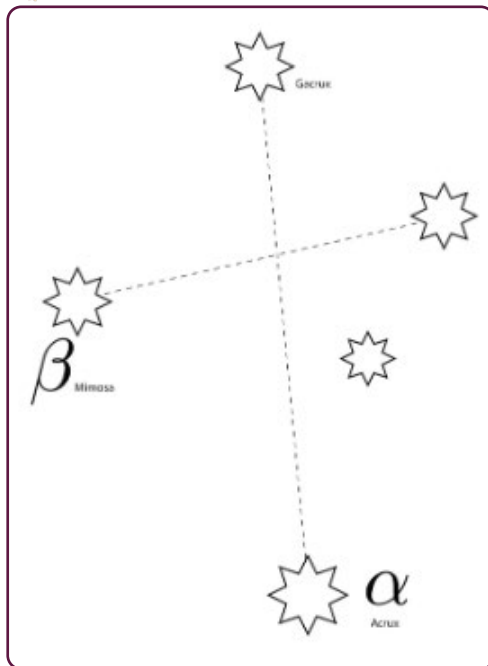


# The Sky and its Stories – Part 3

By Sara Neral

A constellation is a group of stars forming a recognizable pattern in the night sky. Throughout history, people have used constellations to tell stories of their beliefs, experiences, creation, or mythology. Our own creativity combined with stories about local legends and myths has created a diverse set of constellations. Even though the stars do not change, people have found many different shapes in the same sky. From humans to animals, to objects, and even abstract concepts, I will be covering some of the different stories that make up the stars that we all see in the night skies.

Of all the associations you can make with the Autumnal season, harvest is one of the most common. Today stories from the sky come from cultures all over the world celebrating a successful growing season and prepping for a looming cold season.



**The Great Emu** Origin: Aboriginal Australian

The Crux constellation (Southern Cross) represents the head of the Great Emu. The rest of the constellation can be traced in the dark dust lines of the Milky Way. The Crux itself is featured on the Australian flag.

The Emu holds important ceremonial and resource meanings depending on the time of year and its position within the night sky. In August when the Emu faces south, it signifies it is time to begin planting ceremonies for the summer. When the emu dips close to the earth, it is thought to be sitting in a watering hole created by the spring rains.



**Purra** Origin: Boorong Clan

Yuree and Wanjel were two brothers on a hunt. During the hunt, the boys pursue Purra, the red kangaroo. When they catch and kill the kangaroo, it is the commencement of the great heat (summer). They roast Purra in the great fire, and cause Coonortoorung (smoke & mirage). When the smoke clears Weeit (Autumn) begins.

All of these descriptions are brief summarizations of important cultural stories. If you would like to learn more, a great starting place is *Figures in the Sky*, a digital collection of the stars that make up the night.



**Gah Hahat'ee** (Rabbit Tracks) Origin: Dine (Navajo People)

The pattern of stars depicts the tracks of a rabbit running and leaping. When the constellation turns in the sky, it signifies that young deer are old enough to survive without their mothers. This heralds the beginning of the hunting season in early fall.



**\$35**  
PER PERSON



**PEEC**  
Pocono Environmental  
Education Center

**CREATE  
YOUR OWN  
WALKING STICK**  
**SUNDAY, OCTOBER 22**

**CALL PEEC: 570.828.2319**  
\*Pre-registration required



## From the Archives...

### ON THE TRAIL OF TRACKS – Originally Printed in Winter Solstice 1994

By Patti (Kaufmann) Shriener

I went hiking with a group of families who were visiting PEEC one morning this past October. With us was Jake, an intrepid tracker who brought not only his keen eyesight, but also a set of “ranger” tools, special sticks he used to point out the tracks we found. On our excursion we identified a few dog tracks, a chipmunk trail, and many tracks of the biggest predator in the woods that day: humans! Not only did Jake find tracks, but he also found other signs of animal visitors, including trees chewed by beavers, acorns gnawed by squirrels, and a turkey feather. Jake was three years old. Often it is the young explorers who look at everything, big and small, without prejudging, who make the best trackers.

Tracking is the art of following the impressions of an animal’s feet and paws, and sometimes stomachs and tails, plus scat and any other signs or marks an animal has left behind. Tracks are usually followed to learn about an animal’s behavior or to determine its location. If you open your eyes to the many small signs around you, you may discover the presence of animals you never expected to find.

A bird feeder on a snowy winter day is a wonderful place to start your tracking adventures. Check the ground around the feeder for the prints of wild visitors. You are likely to find the tracks of blue jays, cardinals, sparrows, chickadees, mice, chipmunks, and squirrels. Birds leave easy to follow tracks when they land in an impressionable spot. Cardinals hop in search of seeds, crows walk across the yard. Chickadees perch on small twigs and turkeys have a long stride. If you live in a heavily wooded area, you may be lucky enough to find bear tracks where your feeder used

to be. Other frequent mammalian feeder visitors are the skunk, raccoon, opossum, flying squirrel, fox, deer, dogs, and cats.

You can expand your tracking beyond the bird feeder in all types of weather and in as many locations as there are types of animals. While there is greater biodiversity in rural areas, there are many types of creatures to be found even in the heart of the city. During dry summer weather, scout dusty and sandy areas. Frequently you can find the tracks left by sparrows that dust bathe in spots like these. Wet weather in the autumn and spring creates lots of muddy spots, which capture wonderfully distinct impressions of passing creatures. In the winter, snowy days are best for finding the tracks of resident winter birds and mammals.

Wherever you are, search for even the faintest sign of a track. Frequently there will be many more signs nearby, leading away for the spot you have found. When you find a print, or even a partial impression, look at its size, overall shape, the placement of toes, and the presence of claws. Measure the stride – the length between steps – and the distance between the right and left print, which is called the straddle. With the help of a good tracking guide, this information will help you identify the maker of the tracks.

There are many resources available to help you learn more about tracking. PEEC will soon have a new tracking display that will give you the chance to make a few tracks of your own. There are also many useful field guides, including *A Guide to Nature in Winter* by Donald W. Stokes, *A Guide to Animal Tracking and Behavior* by Donald and Lillian Stokes, and most of the books written by Tom Brown.

Throughout the year, keep an eye to the ground, and have fun trying to discover evidence of your non-human neighbors!

## What Creeps out the Creepy Crawlies?

By George Johnson - Continued from Page 1

Thankfully, the “Ghost Fungus” only seems to infect cellar spiders. Humans, and other spiders, are not affected by it. However, you might be able to see the fungus in action in your own home. Like the cellar spiders, the fungus prefers dark and humid areas. Basements are a prime habitat for both of them to thrive. Just keep an eye open the next time that you head downstairs. You might just see the fungus eating the poor spiders alive.



## 2024 Overnight Summer Camps

By Susie Chamberlain

There is some new and exciting news regarding 2024 summer programming.

We will be offering two new Overnight Residential Camp programs!

Overnight camp programs help foster personal growth, friendship building, independence, and skill development, all in a safe nurturing environment.

### Programs:

#### July 7-12: Ages 10-12 & Age 13-16

- **PEEC into Space:** Come stay with us and enjoy the night sky! Do you like to stay up late and look up at the stars? This program would be perfect for you. Campers will get the opportunity to sleep in late in the mornings, and stay up late at night. They will have all of the camp's fun activities during the day. Then at night, they will get to look up at the stars and get to explore being an astronomer and astrologist.

#### July 14-19: Ages 10-12 & Age 13-16

- **Summer Survivor:** Do you have what it takes to survive in the wilderness? Our new program will offer campers the opportunity to learn more about the outdoors and see how well they can survive in the wilderness. Campers will learn about backpacking, purifying water, building shelters and fires, edible plants, animals to avoid, fishing, and enjoy an overnight cookout/sleepout!



### Accommodations:

- Campers in our 10-12 age range will get to stay in our cabins. Each cabin has a private shower / bathroom.
- Campers in our 13-16 age range will get to stay in our yurts. The yurts utilize a nearby bathhouse for bathrooms and showers.

Our overnight programs of up to 10 campers will be supervised by our wonderful summer camp staff. Each group will have at least two counselors with them and the counselors will be with the campers continuously throughout the week.

### Activities:

- Activities include: Ecozone, hiking, boating, science experiments, arts and crafts, tie-dye, outdoor living skills, and much more!

Campers will try their hands at campfire cooking each week for one dinner. During the rest of the meals, campers will receive prepared meals in our dining hall.

Throughout the evenings, campers will enjoy a s'mores' night, large all-camp activities, and a fun closing campfire to celebrate the end of their week at PEEC.

Thank you for your continued support. We look forward to welcoming your camper to unplug and have fun with us all week long at PEEC!

**July 7 -12: PEEC into Space - \$900**

Two age groups: Age 10-12 & Age 13-16

**July 14 - 19: Summer Survival - \$900**

Two age groups: Age 10-12 & Age 13-16

\***Early Bird Special - 10% off** the current price. Camp registration will open in October; watch for notification emails or contact Susie: [schamberlain@peec.org](mailto:schamberlain@peec.org).

\*Deposits of **\$100** for overnight camp must be paid by **November 23** to lock in Early Bird Pricing.



**PEEC**  
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**SCOUT BADGE FESTS**  
9:30AM - 4PM

**GIRL SCOUTS**  
\$25 Full Day • October 28

**BSA SCOUTS**  
\$25 Full Day • November 4



**PEEC**  
Pocono Environmental  
Education Center

**HAWK WATCH**

SATURDAY, OCTOBER 21 • 8AM - 4PM

BRING A LUNCH, CAMERA, & WARM CLOTHES



**\$20/PERSON • MAX 18 SPACES!**



# AUTUMN PROGRAMS 2023 AND GETAWAYS

**PRE-REGISTRATION REQUIRED**  
Unless otherwise indicated.

**TO REGISTER:**  
Call PEEC at 570-828-2319

## OCTOBER

*Nature Photography*  
Sunday, October 1st

\$5 per person \* 10am-12pm  
Learn some beginner techniques on how to frame a picture and then apply those skills on our trails. Great for children and those starting from scratch. Participants will need a camera for pictures, even a phone camera will do! **Please call to register.**

*Harvest Family Camp Weekend*  
October 6th - 9th

Adults \$240 \* 10% off ages 11-13  
25% off ages 7-10 \* 50% off ages 4-6  
Free 3 & under

Bring your friends and family to experience PEEC in the splendor of autumn. Animal presentations, canoeing & kayaking, nature hikes, crafts, campfire and more! Price includes three nights of lodging and meals from Friday dinner to Monday lunch. **Call for details.**

*Harvest Festival*

Saturday, October 14th

\$5 per car \* 11am-4pm

Celebrate Fall at PEEC's 13th annual Harvest Festival! Enjoy animal presenters, arts & crafts, hands-on activities, conservation exhibits, live music, local food, old-timey activities, & more! Bring your family & friends to this great event!

*Ecozone Discovery Room!*

Sunday, October 15th

\$2 per person \* 1pm-4pm

Climb into a bald eagle's nest, crawl into a bat cave, explore a beaver lodge, and dig in a fossil pit! Explore this indoor discovery room and enjoy hands-on exhibits on natural history, sustainability and the local environment. **No registration required.**

*Hawk Watch*

Saturday, October 21st

\$20 per person \* 8am-4pm

Join us on a trip to observe migratory hawks in our region. Bring a lunch, camera & warm clothes. **Call to reserve a seat in the van – Maximum of 18 spaces.**



*Nature Photography*

Sunday, October 22nd

\$5 per person \* 10am-12pm

Learn some beginner techniques on how to frame a picture and then apply those skills on our trails. Great for children and those starting from scratch. Participants will need a camera for pictures, even a phone camera will do! **Please call to register.**

*Create Your Own Walking Stick*

Sunday, October 22nd

\$35 per person \* 12pm-3pm

Spend the afternoon with us as we create handcrafted walking sticks. Wood, tools, gloves, and aprons will be provided, as well as suggestions and pointers on how to personalize your work.

**Pre-registration required.**

*Girl Scout Badge Festival*

Saturday, October 28th

\$25 Full Day \* 9:30am-4pm

Attention all Girl Scouts! Come to PEEC for a fun day of hands-on badge work. Brownies will work to complete their Senses & Eco Friend Badges. Juniors will work to complete their Animal Habitat Badge. Cadettes and Seniors will work to complete their Girl Scout Ranger patches.

**Payment is required at registration. Space is limited - call early!**

*Signs of Fall Hike*

Sunday, October 29th

\$5 per person \* 10am-12pm

Take a hike with us and discover the science behind the wonderful season of fall. We'll discuss changing animal behavior, why leaves change color, and why it's the best season to be out and about! **Please call to register.**

*Ecozone Discovery Room!*

Sunday, October 29th

\$2 per person \* 1pm-4pm

Climb into a bald eagle's nest, crawl into a bat cave, explore a beaver lodge, and dig in a fossil pit! Explore this indoor discovery room and enjoy hands-on exhibits on natural history, sustainability and the local environment. **No registration required.**

## NOVEMBER

*BSA Scouts Badge Festival*

Saturday, November 4th

\$25 Full Day \* 9:30am-4pm

Attention all Bears, Webelos and Scouts! Join us for a fun day of badge work! Bears will work to complete their Fur, Feathers, & Ferns badge. Webelos will work to complete their Into the Wild badge. Scouts will work to complete their Mammal Study badge. Scouts must be supervised at all times by a parent or troop leader. **Payment is required at registration. Space is limited - call early!**

*Wacky Science Adventures*

Sunday, November 5th

\$5 \* 10am-12pm

Put on your lab coats and prepare to conduct some crazy experiments! You'll get to create your very own slime, oobleck, and attempt to launch a rocket into space. **Please call to register.**

*Ecozone Discovery Room!*

Sunday, November 5th

\$2 per person \* 1pm-4pm

Climb into a bald eagle's nest, crawl into a bat cave, explore a beaver lodge, and dig in a fossil pit! Explore this indoor discovery room and enjoy hands-on exhibits on natural history, sustainability and the local environment. **No registration required.**

