



**PEEC**  
Pocono Environmental  
Education Center



Spring Equinox 2019

# Seasons

A Quarterly Publication to Advance Environmental Literacy

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## Sleepy Reptiles

By George Johnson

**“Wakey Wakey!”** The sun is shining, the birds are singing, and the snow is finally melting. It’s that time of the year when the weather starts warming again; meaning that spring is just around the corner and the critters will start stirring. Spring is one of my favorite seasons since many animals will start waking up from their slumber, becoming active again. What’s always interested me, however, is how cold-blooded animals, such as reptiles and amphibians, survive the frigid weather. Unlike humans and other mammals, reptiles and amphibians can’t produce their own body heat to stay warm. Their body temperature will actually match the air temperature of the environment. Warm-blooded animals (or *endotherms*) create heat from the food we eat, which in turn fuels our metabolism that keeps our body active in any weather conditions. In cold-blooded animals (*ectotherms*) though, the process is reversed. A warm environment jumpstarts their metabolism, allowing them to digest the food they’ve eaten. So during the colder periods, the temperature affects their metabolism and causes them to slow down. Many reptiles and amphibians get through the cold times by merely sleeping through it all, but there are a small handful of local species that have some pretty cool adaptations that help them survive the harsh winter. Let’s talk about some of the 3 coolest ones that I’ve come across around here!



*Garter Snake*

**Garter Snake:** First up, I wanted to talk about one of the most commonly found species of snakes out there, the garter snake. These little guys don’t really have a cool or exciting physical adaptation, but they do have a really cool behavioral adaptation. They go through hibernation like any other reptiles/amphibians, except it’s where they go that’s so cool. A lot of reptiles get through the winter by either digging deep into the ground or finding a nice sheltered spot and hanging out there all alone. Garter snakes, however, don’t go off and hibernate alone. Instead, they will gather by the hundreds or possibly thousands in a single location to hibernate together, called a hibernaculum. Then, once spring rolls around, they will all emerge together at once. It’s really an incredible sight to see first-hand. I was lucky enough to see the aftermath of an emergence a few years back. There were snakes everywhere I looked in the immediate area. I’ve never seen that many garter snakes gathered in one place before and I can only imagine how many snakes were all sleeping together throughout the winter.



*Wood Frog*

**Wood Frog:** Next up, we have the wonderful wood frog. These guys are truly amazing during the winter months. Most terrestrial amphibians in the northeast dig down into the ground to avoid the freezing temperatures of winter. Wood frogs, unfortunately, don’t have the right tools to just dig down into the soil. They are forced to remain near the surface and endure the cold. They get so cold though, that they’ll actually freeze and become a miniature frog popsicle.

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PEEC Seasons is a Quarterly Publication of  
the Pocono Environmental Education Center  
Marketing and Development Office.

Design & Layout Niki Jones Agency, Inc.  
Editor Janine Morley

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## Message from the Executive Director



I grew up in a very overprotective suburban household in the 1960s and 70s. My parent's idea of hiking was to first drive into NYC and then walk for hours through the various wings of the American Museum of Natural History, instead of visiting the Met. The one time we went skiing as a family, we never left the bunny hill. My parents were just not particularly outdoorsy, despite my father's years at summer camp. The limiting factor was my mother, who despite many partially planned camping trips and visits to Campmor, ultimately refused to go camping due to the lack of proper flushing of toilets and hot showers. Still, I spent much of my summers outside building forts (to defend against whom, it was never quite clear), riding my bike and practicing for cross-country season. My boney knees were

always covered with Band-Aids, as I was far from the most gifted athlete. Also, let's face it, I did things my parents never would have approved of--climbing trees, jumping off the roof of the garage and hurdling the deck railing to the stone patio several feet below. Despite their over protection, I had a lot of freedom and unsupervised play. Screen time (which meant six black and white broadcast TV channels) was limited to 1 hour per day, which I stretched a bit by turning off the TV during commercials (which means I have seen only the first 15 minutes of most I Love Lucy episodes). Outside play and discovery, combined with a love of science and how things fit together, was a vital part of my youth.

My own children practically grew up in the woods around PEEC and know the trails more intimately than I ever will. When I was a young parent, I had a strong tendency toward my parents' cautious, overprotective behavior toward my children. I remember a very specific hike in the woods with my wife and our three children, when my oldest was no more than five. The three children were enjoying jumping from rock to rock in the stream, seeing if they could make it across without getting too wet. The mantra running through my head was: "One of them is going to slip and crack their head open or break a wrist. This won't end well." My wife saw the anxiety in my face and pulled me aside before I could say something and stop the children's obviously gleeful play. She said, "Don't worry, we are here and if something happens, we can help them or take them to the emergency room (that was not so comforting), but they need to take some risks and, yes, they might fall." As difficult as it was for me to adjust to, she was right. There was some slipping and falling, but no major injuries, just soggy sneakers, and scraped palms. Children need to be outside. They need to play and get dirt under their fingernails. They need to come home with stained clothes and smelly socks and shoes. They should do things that make them a bit uncomfortable, so they learn the extent of their comfort zone. Getting lost is not the worst thing, being unprepared is much worse. At PEEC, we strive to give the next generation an understanding of the wonders and the challenges of the natural world and the skills to deal with both. We also have hot showers and flushing toilets, so maybe even my mom would have enjoyed PEEC!



## Bike-N-Brew

April 27 - 10am • Rain or Shine

Celebrate the great biking in  
our community!

Advanced tickets required.



# The Science of (Maple) Sugaring

By: Derek Scott

Warm weather in Pennsylvania marks more than just the arrival of spring – sugaring season is in full swing! Not everyone is familiar with the process of making maple syrup, so we're going to dive into the science of sugaring below. As winter begins to dissipate, starches within the roots and vascular bundles of trees are converted into sucrose (sugar) by enzymes the tree produces. These sugars will serve as the energy source for the eventual production of flowers and leaves on the tree. In order to spread through the tree, the sugars mix with ground water absorbed by the root system to form sap. Xylem, one of the tissues that make up vascular bundles, is responsible for the transport of water and dissolved nutrients (sap) upward from the roots. It is specifically the xylem sap that we're after when trying to produce maple syrup. What's unique about this sap is how it flows through maple trees during the leafless season.



During winter months when photosynthesis is inactive, maple sap flow is driven by pressure in the trunk caused by alternating cycles of warm days and below freezing overnight temperatures. Cold overnight temperatures create negative pressure in the tree due to the separation of gases in the xylem, which originate from nearby soft tissue. This dissolution of gases mimics the effects of transpiration, causing the roots to absorb water. As temperatures dip below freezing, water on the cell surfaces in the vascular bundle begin to freeze, trapping and compressing gases. As daytime temperatures warm beyond freezing, the gases thaw and expand, creating upward pressure forcing sap to flow. This positive pressure created as a result of gas expansion is ultimately what forces sap to flow out of taps and other holes in the sapwood of maples. But why harvest sap during the early spring instead of the remainder of the year? Simple – the opening of flowers and leaf buds. Besides being mostly sucrose, maple xylem sap also contains glucose, enzymes, salts and a few organic compounds. During the spring though, various hormones and amino acids (among other compounds) are added to the sap to aid in flower and bud growth, which negatively impact the flavor of any syrup made. For this reason, peak sap collection season usually only lasts around 6 weeks – from the time temperatures rise above freezing during the day until buds begin appearing.

We now know how sap flows from the tree and why it's harvested in the early spring, so let's discuss converting sap to syrup. A lot of different environmental factors (sunlight, water availability, etc.) can determine the sugar content of maple sap, but on average it's usually between 2 and 3%. To make syrup, the sap has to be boiled to reduce water content until the sap is about 66 to 67% sugar. If we do the math, that means that at 2% sugar content, it takes roughly 40 gallons of sap to produce a single gallon of syrup! Besides the sheer volume of sap required, making sure sap is boiled at the right temperature is also important. Water boils at 212°F, but because of the sugars in sap, the boiling point for syrup production is actually slightly higher at approximately 220°F. Boiling the sap at this "sweet spot" ensures that water will evaporate until the sugar becomes so concentrated that the boiling point becomes higher than the original threshold. Once the sap stops boiling at 220°F, it has reached approximately 66% sugar content and is now considered syrup.

Now that the sap has finally been converted to syrup, the last step is grading the finished product. The grade of syrup is ultimately determined by the sugar content of the sap as well as fluctuations in temperature, and falls into one of five categories:

**Grade A Golden Color**, Delicate Taste: Produced earlier in the season as sugar content is slightly higher. Smooth flavor is ideal for maple cream and candies.

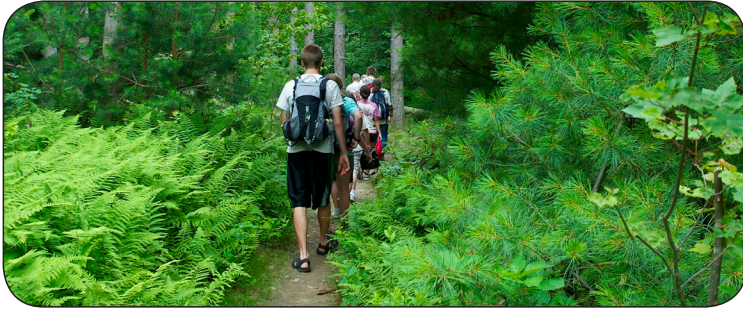
**Grade A Amber Color**, Rich Taste: Produced towards the middle of the season as temperatures begin to warm. Slightly darker than the Golden Color grade with a subtle flavor ideal for table syrup.

**Grade A Dark Color**, Robust Taste: Lower sugar content in sap later in the season means more volume and more time required to produce syrup. The result is a darker, stronger, full-bodied flavor that is fantastic for waffles, pancakes, and glazes.

**Grade A Very Dark Color**, Strong Taste: Produced late in the sugaring season, this dark syrup possesses a strong maple flavor that is incredibly robust. Many chefs prefer this syrup for cooking and baking.

**Processing Grade**: Syrup usually produced as budding season begins. Off flavors make it suitable as an ingredient in food products but it is not permitted for retail sale.

If you're ever interested in seeing the process of sugaring first hand, be sure to keep an eye on our public program calendar for the Sugar Shack Scramble! This year's event took place earlier this month and between the syrup making demonstration and the pancake breakfast, participants had a "sweet" time.



## The Ten Essentials – Part 1

By Nathan Lanan

On any given outing into nature, there are ten things you should carry with you, known, appropriately enough, as the Ten Essentials. These include hydration, nutrition, illumination, insulation, navigation, sun protection, fire, first aid, emergency shelter and a repair kit and tools. In the coming months, I'll be writing articles on different Essentials and my experience with them. For this newsletter, I'll start with two of the simplest, but most often overlooked, aspects of the Ten Essentials: sun protection and illumination.

On cooler days in winter and early spring, it is easy to forget how dangerous the sun can be. Despite being vital for all of our survival, too much sun can be very damaging. Most commonly, people will see this in action with sunburn, a form of first degree burn. Whether it's an irritating itch or peeling skin, sunburn can be hazardous if untreated. Too much sun exposure can also lead to dehydration and, in extreme cases, different types of cancer. Sunscreen is great to keep in your pack, and clothing coverage from long sleeves and pants is effective at protecting your skin from the sun. Remember: your ears can get sunburned just like the rest of your body, so bring a hat! A pair of sunglasses is a lightweight item to throw in your pack, and can do a great deal to help your eyes on snowy days or leisurely trips down the river. Lastly, a bandana (or several) is small, foldable, and has a thousand and one uses, one of which is folding it into a hat to keep the sun off your head, ears, and neck. I always carry sunglasses and bandanas in my pack, often alongside sunscreen depending on where I'm hiking.

It's always safest to go on outdoor adventures during the day, but accidents can happen, and you don't want to be stuck on a trail on a dark night with nothing to light your way. The obvious solution is a flashlight, or a headlamp that can be worn on the head to free up your hands. Modern LED flashlights are lightweight, surprisingly powerful, and have a decent battery life despite often only needing two to three double-or triple-A batteries. An easy way to keep your flashlight alive longer is simply to store the batteries separately from the light in your pack; that way you don't need to worry about it turning on

accidentally or having the batteries leak and ruin your light. Whether you would rather carry a handheld flashlight or a headlamp, nicer models often have waterproofing, rechargeable batteries, a red light function to protect your eyes at night, and/or a strobe function useful for getting attention in an emergency. Depending on how often you would be hiking later in the day or early in the night, a flashlight or headlamp with features like these can be a very good investment. Beware, however, of cheap flashlights that often have dozens of small LEDs. Generally, the cheaper and smaller the light, the less battery life it has and the dimmer the beam will be. I always have a small, rechargeable, waterproof flashlight that doubles as a headlamp on my belt, and in my pack is a portable battery pack I can use to charge my flashlight and other electronic devices and that additionally functions as a flashlight itself! No equipment can function without the right knowledge base to use it, so before packing anything you might be depending on to survive an emergency, always test out the equipment yourself to make sure you know how to use it. Whether that means learning all the functions of your new flashlight or tying your bandana on your head in every way you can, you should be prepared to do so in a potentially stressful situation.

## Smoke Alarm Reminders

By Kirsten Larick



With Daylight Savings right around the corner, I decided I would take this time to remind everyone to change your batteries in your smoke alarms and carbon monoxide detectors. Now that you are thinking about your detectors, when was the last time you replaced them? For me the answer WAS 14 years ago when we moved into our house. I thought about them twice a year when I faithfully changed the batteries, or burnt dinner.

This past Christmas we received a gift card to a big box store. While walking around getting lost in our "to do" list, I came across the smoke detectors. I started thinking, "When do they go bad? I mean I change the batteries, but when do they become less effective?" Here is what I discovered:

Since smoke alarms work to constantly monitor the air 24 hours a day, they may begin to malfunction over time from exposure to accumulated dust, insects, airborne contaminants, and corrosion. Most smoke detectors will have an expiration or replace-by date stamped/printed on them; however, if your smoke alarm does not have a date on it, it is important to replace it once every 10 years. At the end of 10 years, the smoke alarm will have gone through millions of monitoring cycles and the components may have become less reliable. Needless to say we left the store with 3 new smoke alarms and 1 combo smoke/carbon monoxide detector.



## Snakes

By Emma Roth

I recently brought home a pet snake. Apollo is an albino Ball Python, and, in my unbiased opinion is absolutely adorable. I have always loved snakes. I've loved finding them in the wild, watching them slither along looking for food or a patch of sunshine to bask in. They've always seemed so graceful to me, how they seem to flow over the land. But I know that this is not a common opinion, and more often than not, snakes are looked upon with fear and disgust more than anything else. A fear of snakes is completely normal, and has been cultivated in humans through evolution for hundreds of thousands of years. In the parts of the world where we evolved, there are species of snakes that can severely hurt, if not kill us. So, by natural selection, people who were scared of snakes lived longer to pass on that trait. However, in many parts of the world where humans live today, including at PEEC, this fear is largely unfounded.



*Black Rat Snake*

One very common question that students ask me before we go on a hike is “Are we going to see a snake?”, and I always tell them the truth - “Maybe”. This usually leads to some nervous glances from the kids. However, before panic breaks out within the group, I try my best to reduce this fear. The Delaware Water Gap National Recreation Area is home to 14 species of snakes. The most common ones we see at PEEC are garter snakes, northern water snakes, black rat snakes, and milk snakes which are harmless to humans. Yes, they have teeth. Yes, they can bite. They will only bite you if you grab them. If you don't grab the snake, it will leave you alone, and more than likely run away from you. Even if it does bite you, the worst you'll get is a nasty scratch. A simple wash with soap and water and a Band-Aid will be all the treatment you need. Snakes only attack humans in defense, so they will only bite if they feel threatened. This includes the two venomous snakes that call PEEC home: the timber rattlesnake and the copperhead. Humans are much too big for these snakes to go after as prey; they need to be able to swallow their prey whole. That being said, rarely, venomous snake bites can and do happen. However, if you are bitten by a rattlesnake or copperhead, don't panic. When snakes bite in defense, they use very little venom; they try to save as much venom as they can for killing prey. Since 1900, there have only been four recorded snake bite deaths in Pennsylvania. If you are ever bitten by a rattlesnake or copperhead, stay calm and get to a hospital. Most likely, you will be fine; however, everyone reacts to snake venom differently, so it's better to be on the safe side. Snakes are beautiful animals; at least I think they are. They should be respected and left alone, but not necessarily feared. If you see a snake on the trail or by a pond, just leave it alone. The only time you should fear a snake is if you give it a reason to fear you. Watch from a distance, instead, as it slithers along or basks in the sun.

## Sleepy Reptiles

*continued from page 1*

Their heart stops, blood flow slows to a crawl, and their lungs stop breathing. Normally, this would look pretty grim, but this is where their special adaptation comes in to save the day. Once their body reaches a certain temperature, it starts producing a special molecule called glucose. Glucose spreads throughout their body and prevents ice from actually forming around their organs and muscles. To the casual observer on the outside, they'd look and feel as though they've been frozen to death. Luckily that is not the case since, once the weather warms, their body thaws out and functions return to normal as if nothing happened.

**Painted Turtle:** Now, saving the best for last, we have painted turtles. They have one of the best, and also grossest, winter adaptations that I've ever heard. As a painted turtle, you spend almost all of your time in the pond/ lake. You very rarely ever go out onto dry land, and winter is no exception to that. They would rather spend their winter by digging head first into the bottom of the mud. It's actually not so bad down there. The water on the bottom of a pond during winter is actually the warmest part, a balmy 38° F usually. The problem, however, is that being buried face first in the mud makes breathing and obtaining oxygen a bit hard. Turtles, like all other reptiles, need to get oxygen from somewhere in order to live. The only place that's possible is the water itself, but they have lungs, and not gills, meaning that they can't just collect oxygen out of the water like fish can. Instead, they have another means of getting to that necessary oxygen for survival. Remember, the turtles bury themselves face

first into the mud which leaves their rear end hanging out and exposed to the water. What they do next is the gross/awesome part. They'll actually take in water through said rear end and are able to extract the oxygen out of the water by using specialized blood vessels near their intestine. Basically, turtles breathe out of their butts in order to survive the winter! You'll never see turtles the same way again; I certainly don't.

These are just some of the really cool and amazing adaptations that reptiles and amphibians in our area use to survive the winter. There are so many more across the world that I couldn't mention, but I encourage people to go out to discover what they are. Animals have developed some really bizarre and fantastical ways just to live out in the cold. It makes me almost wish that humans could hibernate during the winter too.

## Putting Down Roots to Upcycle Garden

By Stephanie Sherman

The more I stay here at PEEC the more I realize I want to put down roots. Most people think of this saying as meaning to settle down, buy a house, and start a family, which is all true. I may not be entirely ready for the kids of my own, but I've found PEEC to be a wonderful place to start a home and, hopefully this year, a garden! Being in a National Park, we've had to get creative with gardening here since we cannot plant anything directly in the ground. Instead, we've filled tires, dumpster bags, canoes and even an entire swimming pool with top soil in order to garden. Repurposing objects to new uses through upcycling is a great and sustainable way to enjoy the simple pleasures of getting dirty. I found it can also be overwhelming with all of the possibilities if you're just getting started. In case you don't have an extra canoe or swimming pool to spare, let me share my dream for an upcycled garden!

First, think about the space you have and what you're trying to grow. I have a pretty lazy green thumb, so elaborate arts and craft projects for upcycling can be super intimidating. I'm also pretty practical in hoping to grow vegetables in my garden rather than succulents or flowers. Herbs would do great in my kitchen windowsill so maybe I'll consider upcycling old Tupperware containers or even an egg carton as a seed starter this spring before I even reach my backyard. With some quick thinking, an old take-out container or soda bottle can be turned into a terrarium to start seeds now. Mason jars are pretty trendy or even food cans could become a great planter before I toss them into recycling. Those could probably help my little seedlings grow pretty well before transplanting them outside. All of these would definitely fit in my window, so the better question is what am I waiting for? I could probably replant some cut celery or onion ends or an old potato right now to start growing for when the weather is good enough to get outside. Getting outside, there's more project space, but also more places I could probably sink more money than I want

into gardening. Not being too picky about aesthetics, anything with sides to hold soil could work. Old storage bins that don't have lids just need a few holes drilled into the bottom. Milk crates, broken trashcan bottoms, tires, the list can go on and on. The practical me would like to try using wood pallets, cinderblocks or straw bales to make a planter. The impractical me is saying to take my husband's old jeans and shoes and make them into a planter scarecrow. Can you just image a pair of blue jeans growing greens from the top and cut out knees with two sneakers growing herbs? How fun!

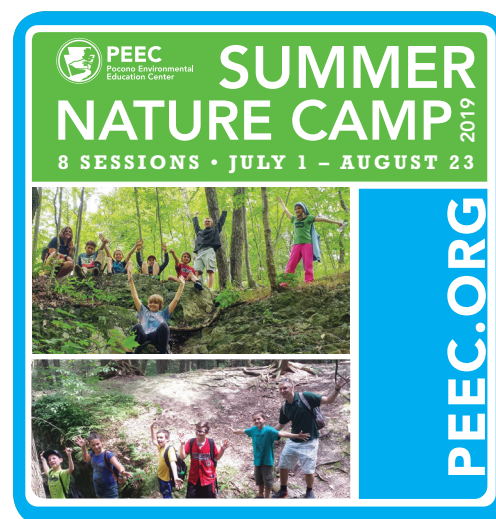
That being said, I'm probably going to need a good bit of soil for my outside garden. Unfortunately shoveling is out of the equation, not only because we are inside a national park, but also being in a rocky location in general. The thought of buying bags and bags of topsoil makes me cringe so composting it is! Old milk crates can be rotating levels of a compost bin, (or a broken storage bin with a lid). My neighbors could probably give me a few cat litter buckets that would work too. Basically I will need anything dark with holes for drainage if I want worms to help me compost. Otherwise, at PEEC, we've created rolling compost bins from barrels or standing bins from pallets that we turn with a pitch fork. A fun mini-composter can be made from a large coffee container with holes in the top. That would be more practical to keep my kitchen scraps in rather than running them out to the compost after every meal.

The next thing to think about is how do I keep my garden watered over the summer? While last summer was pretty rainy, I know that I'm not the best at remembering to water plants. Planting a plastic bottle with pin holes makes an easy way to slowly water plants by just filling the container. If you have any glass bottles, there's also the option for filling the bottle and just submerging it into your planter to slowly drain into the soil. Those will help my plants, but I also don't have a hose close to where I want my garden. I could make a DIY rain barrel by taking an unbroken trash can, put it up on a few cinderblocks, fit it with a hose faucet on the base and drill a few holes in the upside-down lid to catch rain. Bonus, I'm sure there's some old, leaky garden hoses around

I could probably run from my rain barrel to my makeshift planters and just poke a few more holes in it to water the garden for me. Less work in the long run!

A few more garden luxuries to consider when saving money would be using household objects that would normally be disposed of to make other tools. For example, larger plastic jugs can be great hand scoops if you cut the bottom and the side below the handle off. Plastic utensils or straws can be repurposed as sprout markers. Cut the bottom off of another jug and you can guard your sprout from the elements and animals by placing it overtop of them. Maybe you're also like me in the fact that you don't have a home for the nicer hand tools you've invested in, or maybe your seeds. If you happen to find a metal tin or, even better, an old metal mail box, those are the perfect size for storing tools and seeds away safely. The sky's the limit on how minimal or creative you'd like to be. I hope I've inspired maybe even a green thumbnail at the very least with how easy gardening could be. If you're super creative and have plenty of time, go ahead and upcycle all the quirky garden decorations! If not, I hope you don't feel as daunted thinking that gardening has to be a perfect picturesque Home-Shmoe cover photo. It can be whatever you like, just enjoy! For more ideas on getting started, I recommend the Farmer's Almanac as a good starting point.

Sources: <https://www.almanac.com/video/reusing-and-recycling-household-items-gardening#>.







## The Ten Essentials – Part 2

By Nathan Lanan

Fire is one of man's oldest inventions and greatest tools. Many of the other ten essentials can also be covered by fire; it can provide light for illumination and heat for insulation, it can cook food and boil water and even sterilize tools for first aid. One or more items to start a fire are an absolute essential to keep in a pack while outdoors. The simplest fire tool to carry is a lighter. It can provide a flame instantly, and for that reason I always carry one in my pocket. A simple disposable lighter is cheap and will last many trips. Lighters, however, only carry a finite amount of fuel (and it is often difficult to tell how much fuel a lighter has left), and should your lighter get wet in either a bad rain storm or a fall into water, it will be difficult to use for some time. For that reason, a backup source of fire is always a good idea. Matches are easy to use, but simple kitchen matches can easily be ruined by rain, so weather proof matches are a better choice.

A very reliable, long-lasting source of fire that is rapidly gaining in popularity is a Ferrocerium rod, or Ferrosteel for short. It works similarly to a traditional flint and steel that people have been using for hundreds of years (and is often confused for one), but is much easier to use due to the modern materials. By scraping the rod with either the provided striker or any hard metal object, material is quickly removed from the rod. The friction caused by this causes the removed material to catch on fire. A quality Ferrosteel can be used for hundreds of fires and can be used even if it's been soaked. Ferrosteels can be bought at many outdoor retailers, but beware of thinner, cheaper models that make up for generating fewer sparks by having a block of highly combustible magnesium attached to them. A good rod will be able to throw enough sparks that the magnesium isn't necessary, so it is better to invest in a thicker, higher quality, albeit more expensive model in the long run. The only real problem with Ferrosteels is simply that even the best examples and users will almost never be able to produce enough sparks to catch their entire fire, so separate tinder must be used.

Tinder is the smallest material that is used to start a fire. Whether it is paper, dry leaves, or twine, it can catch quickly but it will not burn for long enough to cook or heat anything. However, tinder is necessary

for catching anything larger on the fire. In the woods, the easiest things to find for tinder are dried leaves and pine needles, but a Ferrosteel will typically not be able to light these materials. Instead, while using a Ferrosteel to light a fire with them, carry a form of intermediate tinder that is easy to light. On a nice day, the simplest form of tinder is a ball of twine. Jute works very well as it pulls apart into very thin fibers that the sparks from the Ferrosteel can catch quickly. It is also easy to carry a lot of it in a small space. On a windier day, cotton balls soaked in Vaseline can be pulled apart and burn very much like a candle. If it is very wet outside, a more solid cotton makeup remover pad soaked in paraffin wax will essentially be waterproof, though it is much tougher to light with a Ferrosteel. I carry all three of these items in my pack for different scenarios as even together they don't take up much space and they are very light.

Another useful tool for building fires is a knife. Knives can be used for tasks as simple as cutting twine to use for your Ferrosteel to shaving stick to make kindling to even processing your larger fuel wood. The back of your knife can even be used as a striker for a Ferrosteel, as long as it is ground to be rough enough to scrape material away. A light, durable folding knife or multitool is all that is necessary for cutting twine and kindling, but a sturdier fixed bladed knife is going to be necessary for processing firewood. While wrist-thick wood can be snapped to shorten it with your bare hands or a cleverly placed rock and a stomp, a knife is going to be needed to split it in order to get at the dryer inside or make it thinner. This can be done by placing your knife on the edge of the piece of fuel and hammering it through the wood in an act called "batoning." The reason a fixed blade is needed is because a great deal of stress is placed on the blade doing this and a folding knife can easily break. So, while I carry a multitool to use for most standard tasks, I also carry a fixed bladed knife to help build and start my fires.

And remember: no equipment can function without the right knowledge base to use it, so before packing anything you might be depending on to survive an emergency, always test out the equipment yourself to make sure you know how to use it. Ferrosteels are easy to use once you get the hang of it, but it takes dozens of strikes before you can be sure that you can light tinder on fire. Practicing at home will make it that much easier to light a fire in the field.



## E is for Ear Tufts; F is for Fierce; Long-Eared Owl and Great Horned Owl

By Sheri Bone

This is the fifth installment about the eight kinds of owls that can be found in Pennsylvania. To recap, previous articles examined the Saw Whet Owl (A is for Adorable), the Barn Owl, the Barred Owl (B is for Barn and Barred), the Short-Eared Owl (C is for Country Hunter), and the Screech Owl (D is for Dichromatic). This article will look closely at two more owl species – the Long-Eared Owl (*Asio otus*) and the Great Horned Owl (*Bubo virginianus*).

Here is an interesting fact about both of these owls: Neither one has the traits in their names. The ‘long ears’ of the Long-Eared Owl are feathers that are quite long and stand up, almost resembling rabbit ears. These ear tufts are dark (black) with lighter edges (buff or orangey-colored.) The Great Horned Owl does not have horns. Again, the name reflects the feathers located along the side of the head that look like horns. These feathers can be relaxed, or made erect when the owl is frightened, making him/her look quite fierce.

More about the Long-Eared Owl (LEO): Like a majority of the other owls reported on, the LEO is nocturnal. It can be found in regions of the world other than North America. It is a medium sized owl (about the size of a crow) and its squarish shaped facial disc has orangey colored ‘cheeks’, two white lines stretching down from the forehead to the chin, and yellow eyes. Its beak is black. The feathers on its body are dark, with patterns of lighter colored feathers interspersed.

You might think that with both owls having raised ear tufts that it could be easy to mistake the LEO with the Great Horned Owl (GHO) but there are significant differences in their appearances. The GHO is significantly larger than the LEO. It is in between the size of a crow and a goose. Its coloring is less dark than the LEO, too, and the GHO has a spot of white on its chest.



*Long Eared Owl*

*Photo credit: Kathy Uhler,  
Pocono Wildlife Rehab*

What mostly sets these two owls apart is their prey. Long-Eared Owls usually eat mammals, including voles, many kinds of mice, young rats, and rabbits. Their prey usually weighs up to 1/4 pound, but most often weigh less than 2 ounces. They also sometimes eat small birds, capturing them on the ground. Their hearing is so good, they can capture their dinner as they fly in complete darkness. They swallow their prey whole, and cough up a pellet of indigestible matter, usually one pellet/day.

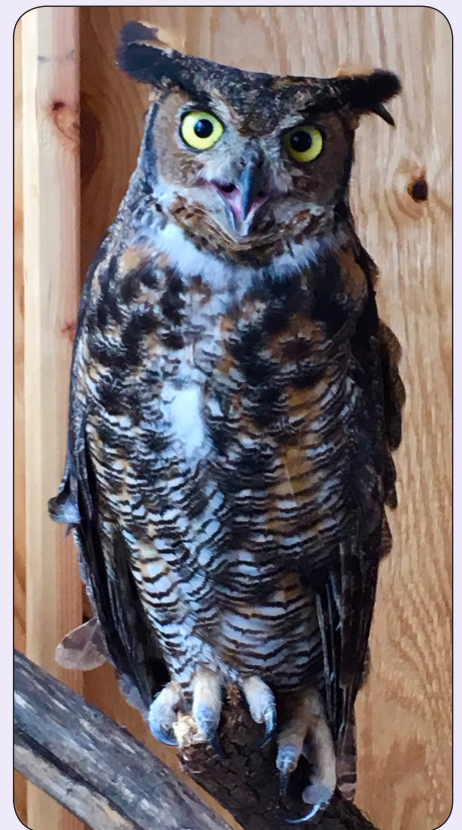
Great Horned Owls, on the other hand, can prey on animals larger than itself. According to the Cornell Lab of Ornithology, “Great Horned Owls have the most diverse diet of all North American raptors. Their prey range in size from tiny rodents and scorpions to hares, skunks, geese, and raptors. Great Horned Owls are fierce predators that can take large prey, including raptors such as Ospreys, Peregrine Falcons, Prairie Falcons, and other owls. They also eat much smaller items such as rodents, frogs, and scorpions.”

Common traits of both kinds of owls include their (mostly) nocturnal lifestyle, their almost silent wings when they fly, and their nesting patterns. Both kinds of owls use old nests made by other birds. While the LEO uses mostly stick nests built by American Crows, Common Ravens, and various hawks, the GHO has been known to take up residence in old nests previously occupied by Red-tailed Hawks, other hawk species, crows, ravens, herons, or squirrels. They usually modify the nest with shredded bark, downy feathers from their chests, fur from other animals, or even their regurgitated pellets.

The GHO is the ‘typical’ owl seen in storybooks and in a vision wear commercial. It’s the one you typically envision when you think of ‘a wise old owl.’ Before I started learning about owls, I had never heard of a Long-Eared Owl. Who’s to say the LEO isn’t wise? Or maybe the Saw Whet Owl? Maybe I will begin to picture a different owl when I think of that saying!

*Great Horned Owl*

*Photo credit: Kathy Uhler,  
Pocono Wildlife Rehab*





# 2019 SPRING PROGRAMS AND GETAWAYS

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

## TO REGISTER:

Call PEEC at 570-828-2319

## APRIL

*Scouts BSA Badge Festival*  
Saturday, April 6 – 9:30am-4:00pm  
\$25 Full Day

Attention all Bears, Webelos and Scouts BSA! Join us for a fun day of badge work and ask us about turning it into an overnight! Bears will work on Fur, Feathers and Ferns. Webelos will work on their Earth Rocks badge. Scouts BSA will work towards their Environmental Science badge (pre-req. 3e. and 3f, bring a camera). Scouts must be supervised at all times by a parent or troop leader. Payment is required at registration. Space is limited - call early! Overnight accommodations with meals are available for \$43/person



*Spring Peeper Search*  
Saturday, April 7 – 7:30pm-9:00pm  
FREE

These tiny tree frogs have thawed out and are active again in our forested wetlands. Listen to the impressive choir made by these vocal amphibians as we carefully catch, study, and release them. Funding for this program provided by the William Penn Foundation. Bring a flashlight for better searching!



*Bridge the Gap: Bike the McDade*  
Sunday, April 14 – 1:00am-4:00pm  
FREE

Join us for a bike ride along the McDade Trail! We will provide all equipment and transportation. Please bring a water bottle and wear sturdy footwear. We will have extra water and snacks available. Funding for this program provided by the William Penn Foundation. Call for details.



*Fiber Arts Workshops*  
*Pocono Knitting Retreat - April 25-28*  
\$280 Full Workshop  
Call us for day rates

In this workshop, led by Patti Shreiner, knit a "Faded Glory" shawl using between 5 and 9 100g skeins of sock/fingering weight yarn in a variety of colors. Other fun activities include dyeing a yarn blank (kit available). Includes lodging and meals!

*Earth Day Festival*  
Saturday, April 27 – 11:00am-4:00pm  
\$5 per car

Help us celebrate the Earth! There will be hands-on learning stations, interpretive hikes, conservation exhibits, crafts, food, music, and much more! Electronics recycling! TVs, monitors, computers & accessories accepted free! Other electronics may be subject to a fee.\* Pre-registration is NOT required.

\*Any items containing Freon will be subject to a \$15 fee per item. Any items not mentioned will be charged based on weight. PEEC reserves the right to refuse certain items.



*Intro to Fly Fishing*  
Sunday, April 28 – 9:00am-12:00pm  
\$10

Learn the basics of fly fishing. Practice knot tying, casting, and other skills with volunteers from the Brodhead Chapter of Trout Unlimited.

*Continued on Page 10*



**Run • Hike • Crawl**

**PEEC 5k Trail Race**

**SATURDAY MAY 4, 2019**

**8:00am - 9:30am - Registration**  
**10:00am - Race begins**

Take a journey through the woods of the Delaware Water Gap National Recreation Area. Our 5k runs through our main campus and a variety of different woodland habitats on two of our gorgeous trail loops. Course has a variety of different surfaces, including pavement, dirt, rock and gravel.

**VISIT US AT PEEC.ORG TO LEARN MORE!**



# 2019 SPRING PROGRAMS AND GETAWAYS

Continued from Page 9

## MAY

### Birds and Brews

May 3-5

\$215

Call for commuter & day rates

Spring migration has begun! Join us for a wonderful weekend of bird watching and beer tasting. Enjoy guided hikes that teach how to identify birds by sight, sound and habitat. Program is geared towards beginners and experts alike. Saturday night we'll provide transportation to one of our local breweries and the 1st round is on us! Includes two nights of lodging and meals from Friday dinner to Sunday lunch.



### Edible & Medicinal Plant Walk

Saturday, May 11 – 10:00am-12:00pm

\$5

Nature provides food & natural remedies for us in the form of many plants. Join us on a hike focused on wild edible & medicinal plants. NO COLLECTING WILL BE DONE IN THE PARK.

 **GUIDED INTERPRETIVE HIKE**  
**MARCH 31, 2019**  
**10:00AM - 12:00PM**

### Plant Sale!

May 11 & 12 – 9:00am-4:00pm

Free admission

Choose from a variety of native and deer resistant flowers and grasses to beautify your yard at our annual plant sale! Sun loving and shade loving plants will be available. Remaining plants will be sold through the following week so stop by to check them out! PEEC Members will be able to join us for a pre-sale on May 10th from 5 – 7pm.



“Spring Fling” Family Camp Weekend  
Memorial Day Weekend: May 24th-27th  
Adults \$225

Child, Commuter, Day Rates Available

Bring your family and friends to experience the best of what PEEC has to offer. Interpretive hikes, animal presentations, canoeing, campfire and more! Includes three nights of lodging and meals from Friday dinner to Monday lunch.

# ANNUAL EARTH DAY FESTIVAL



**APRIL 27**  
**11AM-4PM**

**HELP US CELEBRATE THE EARTH!**



## A Naif in the Forest by Darrell Berger

*Wing Tips to Hiking Boots: Musings of a New, Full-Time Poconos Resident*

“A Forest Rite of Passage”

Violet the Corgi has a perfunctory bark for the UPS van. She has a more annoyed one for any squirrel that attacks the bird feeder on the deck, or any deer grazing in the yard. Twice I have heard a much louder and more urgent report that turned out to be directed to a raccoon at the feeder.

One particular night in late spring I assumed her bark was caused by a considerably larger and more annoying raccoon. I opened the door so she could scare it away, and followed her onto the deck.

I saw the feeder in pieces, the iron rod that had held it bent to a forty-five degree angle. I heard a rustling to my left, at the end of the deck, about ten feet away. Then I saw the bear, and the bear saw me. We locked eyes briefly. He executed a Fosbury Flop over the railing to the driveway below. He disappeared into the night.

In the foyer at PEEC there is a stuffed bear close to his size, 250 pounds or so. In the following days I received much good advice about bears. Don't put out bird feeders in the spring. Keep your garbage cans inside after the snow is gone. Secure garbage cans with bungee cords. Everybody here has a bear story or several.

My wife and I have been weekend people in Dingmans Ferry for seven years, taking our garbage back to the city. Since I retired last fall and moved here full-time, we consider the bears as never before. My first encounter required only a bit of adrenaline, no blood. Violet was proud to have scared the moocher away.

I now feel like a real resident of the forest, no longer a visitor. Though I am a beginner and have much to learn, I have passed the local rite of initiation: I have encountered a bear, eye to eye.

Enjoy this sample from our PEEC Blog. For more of Darrell's thoughts, and other posts, visit <https://www.peec.org/about/blog-peec>