

# Cooks Current

*"To protect, preserve and improve the quality of water, land and life in the Cooks Creek Watershed"*

Volume 18, Issue 3

Newsletter of the Cooks Creek Watershed

Summer 2021

## 2021 Events

### Regular Board Meetings: TBD

Check our website for details

Springtown Fire House- 7:30PM

4<sup>th</sup> Thursday of the month except Nov. and Dec. which is the 3<sup>rd</sup> Thursday; Aug.26, Sept. 23, Oct. 28, Nov.18 (3<sup>rd</sup> Thursday), Dec.16 (3<sup>rd</sup> Thursday)

All Events: TBD please check our website!

**Sept 25, Springfield Community Day.**

**Sept. 11, Seed Propagation workshop,** 10am-12pm at Peppermint Park.

**Oct. 2, Fall Dinner,** 5pm-9pm, Springtown Rod & Gun Club.

**Oct. 3, Walk in Penn's Woods.**

**Oct. 9, Durham Community Day,** 1-4pm, Durham Mill Green. **Nov 13,**

**Fall Clean-Up,** 9-Noon, meet at Old Philadelphia & Rt. 212 & Gallows Hill Rd.



See back for details!

**We're on the web!**  
[www.cooks creekpa.org](http://www.cooks creekpa.org)

Cooks Current is a publication of the Cooks Creek Watershed Association.

### Board Members:

**President:** W. Scott Douglas

**Vice President:**

**Treasurer:** Jim Orben

**Communications Director/  
Recording Secretary/Editor:**  
Lois Oleksa

**Marketing and Public Relations:** Lois Oleksa

**Layout & Graphic Design:**  
Ellie Scheitrum

### Additional Members:

Sarah Snider, Stephen Smith, MD,

## From Across the Board...

This week has been an eye opener to the impacts of climate change. Localized flooding in Bensalem from a summer thunderstorm actually resulted in evacuations, and this week, smoke from fires out west caused air quality alerts here at home. We have the earliest hurricane season on record and the temperatures in Montana have exceeded the 90's for more days since 1904. Record runoff in Germany resulted in hundreds of deaths as summer storms transformed a wadeable creek into a monster. It's pretty scary stuff, and I'm not a weather alarmist. I am worried that the weather really isn't the worst of it though. The changing climate is having an unprecedented impact on living things. Not only are habitats being transformed by fires, floods and record heat, but animals and plants that depend on them are being stressed, lowering breeding success and changing migration patterns. Much more ominous may be the changes to what isn't so easy to see. While we don't know what actually causes viral outbreaks like Covid 19, these outbreaks are becoming more frequent and more deadly. And while Covid 19 likely came from southeast Asia, as have a lot of other viruses, this summer's outbreak of an unknown communicable dis-



*Mini-Monster example with Scott's famous toilet water demo for the children.*

ease in songbirds tells me that hotspots may not be limited to tropical nations in the future.

While climate change may not be something any one person can do a whole lot about, what we can do of course, is be environmentally aware and work locally. Despite the weather, and continuing Covid concerns, our summer agenda is holding up. We had a very successful Mini Monster Mayhem in June and we will be holding a native plant workshop in September. I recently obtained a mini grant from the Heritage Conservancy that will help us defray the cost of our environmental education programs and efforts, including this newsletter. Later in the fall we

will resume our annual fellowship dinner at the Springtown Rod and Gun Club on October 9. We have yet to pick a speaker, but are open to suggestions for someone you all might want to hear from. Regardless, we hope you all can take the time to get together again and share some good food and fellowship. In November, we will be picking up trash on our roadside section along 212 between Springtown and Durham.

In the meantime, stay informed and stay active. If you want to help us out with any of our programs, please drop me a line at [info@cooks creekpa.org](mailto:info@cooks creekpa.org).

Yours in Conservation, W. Scott Douglas, President

## COOKS CREEK WATERSHED ASSOCIATION Annual Report

April 1, 2020 to March 31, 2021

The Cooks Creek Watershed Association, a 501(c)(3) non-profit environmental education and advocacy organization, promotes the protection and conservation of the resources of the Cooks Creek Watershed. The watershed is a 30-square-mile area in Bucks County, Pennsylvania, draining into the Delaware River and encompassing parts of the Springfield, Durham, Williams, Lower Saucon, Upper Saucon, Haycock, Richland and Nockamixon townships.

The CCWA's approximately 125 members are represented by a volunteer board of directors. Meetings are held the fourth Thursday of the month at 7:30 p.m. We meet at the Springtown Volunteer Fire Company on Main Street in Springtown, PA, and meetings are open to the public. Our fiscal year runs from April 1 to March 31.

### 2020-2021 Officers and Board of Directors

W. Scott Douglas, President	James Orben, Treasurer
Lois Oleksa, Communications Director	Sarah Snider
Ellie Scheitrum	Steve Smith

**17<sup>th</sup> Annual Watershed Green-Up Day** - For the past decade and more, CCWA has coordinated a roadside litter pick up on the first weekend in April. This year's (2020) effort was cancelled due to the pandemic, but our section of roadway was cleaned up by our President. Springfield Township was kind enough to take the garbage.

**19<sup>th</sup> Annual Mini-monster Mayhem** - For the first time since we started, we had to cancel the mini monsters due to the pandemic.

**Stop the Pipeline** - This year we continued our fight against the pipelines with letters to FERC and the DRBC and others. The proponents of fracked gas suffered a major setback when the DRBC voted to make the moratorium against fracking in the Delaware watershed permanent.

**Ordinances and Plans** - Again, due to the pandemic, not much news to report on the planning front. We are hoping for more action this year as Springfield is looking to update its Comprehensive Plan. We will continue to position members to work advocating for changes in local policies toward more sustainable practices that will preserve and protect our beloved Cooks Creek.

**Habitat Restoration** - The CCWA partnered with the Durham EAC and Historical Society to plant native perennial plugs in the millrace at the Durham gristmill with funding from the Delaware Wild and Scenic program.

**Educational Outreach** - In October, Scott taught a class on benthic invertebrate collection and identification for five members of the Fry's Run Watershed Association.

**Penn's Woods Virtual Tour 2020** - A 30-minute video documenting *A Walk In Penn's Woods* event in Durham, PA, August-October 2020. Members of Cooks Creek Watershed Association, Durham Historical Society, and the Durham Township Environmental Advisory Council, walked through the area of an abandoned iron ore mine called Mine Hill. The video, constructed by Isaac Danuloff, featured the flora, fauna and history of Mine Hill. See the video at: [https://www.youtube.com/watch?v=t9-A4-j2p\\_c](https://www.youtube.com/watch?v=t9-A4-j2p_c)

**Stream Gauging and Monitoring** - The CCWA continued to work on the monitoring updates funded through the State's Growing Greener grant. The sampling of benthic invertebrates and water chemistry was completed. Hydrographs were developed for the gauges for the first time in many years and were included in a newsletter update. Due to COVID, the PADEP extended the grant through December of 2021. A full report on the project should be out by the end of the summer.

**Watershed Coalition of the Lehigh Valley** - The CCWA continues to represent our members at the meetings of this organization which covers organizations whose watersheds drain to the Lehigh, but also for some reason, includes us (Cooks Creek drains to the Delaware, of course). Opportunities for education happen regularly and this is a good forum for us to keep up with what our neighbors are doing.

**Website** - Our website is being updated regularly again, thanks to the efforts of Jeff Heehs.

**You can check out more information on the web: [www.cookscreekpa](http://www.cookscreekpa)**



## Back to the Past: "The Indian Walk From Red Hill to the Blue Mountains."

BY J. I. CAWLEY, M. D., SPRINGTOWN, PA.\* (Red Hill Church Meeting, Ottsville, Pa., October 4, 1910.)

From: **A Collection of Papers Read Before The Bucks County Historical Society, Volume IV., 1917.**

\* Dr. Cawley was born October 6, 1853; died December 11, 1915 He was serving as Register of Wills for Bucks county at the time of his death.

*A column highlighting the natural history of the Watershed. This is Part 2.*

"This tranquil repose was broken in upon by an English man named George Wilson who came up the creek from Durham some time about 1728. He made himself at home in the meadows, now owned by Henry S. Funk, Esq.

"He built the first house we have any knowledge of, and was the first resident of the place. The plans and specifications of the structure cannot be found; he left no photograph nor description of it to posterity and we are therefore unable to describe the building; but the fact that the land did not belong to him; that carpenters, and saw and planing mills were scarce, and logs plenty, leads us to suppose that it was a log hut of the rudest description."

George Wilson opened a store at once and did a thriving trade with the Indians. All we know of his stock in trade is that he is mentioned in the Bucks county records as a retailer of rum in 1730. On September 19, 1737, he was surprised by the arrival of white visitors. They were the famous walkers of the great "Indian walk." They left Wrightstown at sunrise, came up the Durham road to Stony Point, in Springfield; there they branched off and came through what is now Bursonville, to the residence of George Wilson, not 200 rods from where we are now assembled, where they took dinner. So says George Furness, of Wrightstown, who accompanied the walkers. After dinner the walk was continued through the present town of Springtown to the Lehigh river near Bethlehem.

After this purchase of lands from the Indians by the Penns, settlers came pushing into the township of Springfield very rapidly, so that by 1743 there were about 40 families in the township, and Saucon adjoining.

Edward Marshall, James Yates and Solomon Jennings, all expert walkers, were employed, their recompense was to be a prize of 500 acres of land to be selected by the winners from any lands not already occupied in the purchase, and £5 in money, to the one who reached the most distant point at the termination of the walk. Two of these men, followed by men on horseback and Indian witnesses, strode into Springfield that September 19, 1737. Jennings had already given up the task before reaching Springfield. It did not take them long to strike the first and only house they saw in the township that day. that of George Wilson. It was probably the only house in the township, and Wilson was the only white resident within the borders of Springfield at that time so far as is known.

It is pretty well established that Wilson's shack stood within 100 feet of a large spring about 40 feet from the walls of Funk's flour mills at the eastern end of Springtown. Tradition in the Funk family has that as the location. It is on the route of the Indian trails leading by the ford at Jones' Island toward Durham, toward the great road at Stony Point, and toward the west- ward to the great trail from the country of the Susquehannas to Pennsbury and it stood on the banks of Cook's (now Durham) creek, which was the highway over which Wilson conveyed his merchandise to his place of business, and his pelts taken in exchange, to Durham on their way to market.

It was in a meadow, as all writers agree, and as Marshall himself has affirmed, and was the logical spot for him to locate. This land was sold by the Penns to Caspar Wister, a land speculator and manufacturer of brass buttons of Philadelphia, in 1738. A few weeks later it was sold by him to Stephen Twining, who built a mill and conducted it, besides farming the land, till in 1763 he sold it to Abraham Funk. The property has remained in the Funk family to this day. As it came into their possession at so recent a date subsequent to the walk, and at a time still more recent to the departure of Wilson, who in all probability remained till after the land was sold to Twining, there can be no reasonable doubt but that Abraham Funk knew the exact spot where Wilson

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had lived and that the information transmitted to his descendants from one generation to another is correct.

The late William J. Puck who was on the spot many years ago corroborated the claim. It would be within the province of this society to perpetuate the spot in some way, so that its location may be preserved to posterity.

After a dinner, consuming, it is said, 15 minutes of time, they continued the walk due westward through what is now Springtown, gently toward the north around the base of the hill called Coleberg, till several miles farther on they reached the great trail to Philadelphia at or near Leithsville in Lower Saucon township, Northampton county, about 6 miles from the ford near Bethlehem.

The distance from Stony Point to Springtown was 4 miles, and from there to what is now the line of Northampton county, 2 miles, a total of about 6 miles. The preliminary walk crossed through about 5 miles of Springfield territory over what is now the old Bethlehem road, and through the present hamlet of Pleasant Valley.

The walkers spent but little more than an hour in crossing Springfield, for it is said they were at the ford near Bethlehem at about 1 o'clock. Thence they continued to the Blue Mountains; the Lehigh Gap being generally claimed to have been the objective point, which was reached at the suspension of the walk on the first day.

There are various different claims made as to the course taken after leaving Jones' Island, some claiming they crossed the mountain at Lehigh Gap, others at Smith's Gap, and still others at the Wind Gap, the two last going by way of Nazareth and Bath. A study of the walk on the half day of September 20, is not intended for this paper, but it may be stated that Yates fell into a creek on the west side of the Blue Mountains and was stricken blind and died three days later. Marshall continued the walk till noon and reached Stillwater in Monroe county.

The length of the walk is variously estimated from 60 to 110 miles—"66 1/2 being the nearest correct" (Buck). The surveyors of the route all give the distance from Jones' Island to the Gap, whichever gap they passed through, at 9 4/5 miles. This is certainly not correct, as the distance to either gap from Bethlehem is about 20 miles; so the chances are that the distance is nearer to from 72 to 79 miles.<sup>1</sup> From the terminus of the walk, the return trip to the Delaware was made in a line at right angles with the course of the walk, which reached the river at the mouth of Lackawaxen creek in Pike county, thus securing about 500,000 acres of land through the transaction; while the idea of the Indians was that the line would not reach further north than the Lehigh at Easton. They protested they had been cheated, and many a bloody massacre in Northampton county was the result of the dissatisfaction with the sharp practice of the Penns. Marshall's wife and son were victims of their thirst for revenge, and Marshall on several occasions barely escaped.

The prize which he won he never received. He finally settled on Marshall's island in the Delaware, in Tincum township, and died there at the age of 79 years, in 1789. He was 27 years old when he made the walk and was a native of Bustleton, Philadelphia. Yates was a New Englander and lived at Newtown in Bucks county. Jennings lived on what has for years been known as the Geissinger farm 2 miles above Bethlehem on the south bank of the Lehigh, and died there. I beg to acknowledge valuable assistance received in the preparation of this paper, from George W. and Samuel H. Laubach, of Durham, who has given this subject much careful study. 2

1. There has been much speculation as to the length of this great walk, and some little difference of opinion as to its exact route. It should be no very difficult or costly matter to have a survey of the route made, using the best information available. It would be commendable if the historical societies of Bucks and Northampton counties would, jointly, have the route laid out and marked with appropriate monuments. — B. F. F., Jr.

2. See paper by John S. Williams, Vol. II, page 348.

## Lightning: The Science, Part 2

By: Steve Smith

Of all the ephemeral events one might observe in nature, are any more dramatic or deserving of awe than a thunderstorm, with its towering anvil cloud, accompanying bursts of wind and rain, lightning, and thunder? The recent deaths of thirty-eight people from lightning strikes within forty-eight hours in India underscores the danger of lightning to those exposed to the elements during a thunderstorm. A mere two Amperes of current can be lethal and a lightning bolt not infrequently generates a current of up to eighty thousand Amperes.

The physics of lightning is quite complex and this brief article will mention only what I hope are the most interesting aspects of the phenomenon of the lightning flash. It will focus on “negative” cloud to ground strokes which, while accounting for only 25% of lightning flashes overall, account for about 90% of those striking the ground. Approximately 75% of all flashes are cloud to cloud or intra-cloud flashes. (If you have ever flown through or above an intense lightning storm you will have been treated to a truly unforgettable intra-cloud lightshow).

Worldwide, at any given time, there may be as many as two thousand active thunderstorms with an average global frequency of between forty to a hundred lightning flashes occurring every second. Lightning preserves the net negative charge on the Earth’s surface.

The cumulonimbus or thundercloud can be described as a “giant heat engine” in which the thermal energy derived from solar radiation is converted into the mechanical energy of updrafts and highly energized, locally contained, electric fields. As the sun warms the land the heated air at the surface rises rapidly carrying water in the form of vapor with it. Updrafts over land can approach speeds of fifty meters per second. As the air rises it begins to cool both from the physics of gas expansion (moving into progressively lower atmospheric pressure) and from the gradual cooling at 6.5 degrees centigrade per kilometer in the troposphere (the lowest part of the atmosphere, in which we live).



The troposphere, containing 75% of the air in our atmosphere, ends at about ten kilometers above the earth where the temperature begins to increase at its junction with the stratosphere. Hence the ceiling, the tropopause, results in the flat aspect of the top of a thunder cloud (the “anvil”). The tip of the anvil is caused by high altitude horizontal wind currents. About one gram of water is contained per cubic meter of cloud.

When a critical level, called the “condensation level” is reached, the water vapor in the rapidly rising air in the cumulonimbus cloud begins to convert to “hydrometeors”; tiny droplets (it takes a million droplets to form one raindrop) of super-cooled water and ice crystals. When they combine, soft hail called “graupel” is formed. As the graupel particles grow heavier, and can no longer be held aloft by updrafts, they begin to fall earthward under the force of gravity. When the ice crystals and water droplets collide with the falling graupel, electrons are generated by the friction, leading to the formation of an electric field within the cumulonimbus cloud. These electrons are added to the ten free electrons per cubic centimeter of air already present, generated by radioactive gases from the earth and from high energy cosmic rays. The lifetime of a free electron is quite short, on the order of a billionth of a second, but as rapidly as they are assimilated by oxygen molecules new ones are produced.

The initiation of a lightning stroke is still somewhat a matter of conjecture but it is assumed to necessitate a “preliminary electrical breakdown” localized in the cloud by several possible means. Because air, under normal conditions is a good insulator, it needs to be “conditioned” by a sufficiently strong electrical field so that a spark can be conducted through it. At higher altitudes less energy is required to convert air from an insulator to a conductor. The electric field necessary for breakdown at an altitude of 5 kilometers is approximately 3 million volts per meter, however, the field generated by the collision of the hydrometeors alone, mentioned above, is far below this level and so a local amplification of some type is necessary for the initiation of the lightning flash.

The so called “conventional” view of localized electric field amplification is thought to arise from a condensation of negative charges arising from wind turbulence. Small, highly localized fields are generated as raindrops are being pulled apart by the ambient electric field, and also from the sharp points of ice crystals. The charges producing these fields are thought to be condensed by turbulence. The electric charge condensation process produces charge cones of up to ten meters in length, sufficient to cause the initiation of a discharge

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by raising the local electric field above the threshold of 3 million volts per meter.

A different possible source of charge amplification in the cloud comes from the “relativistic runaway electron avalanche”. In this case the a very high energy cosmic ray collides with an electron causing further collisions resulting in hundreds of highly energized and many lower energy electrons. When a sufficient number of electrons accumulate, on the order of  $10^8$  or  $10^9$ , within a few millionths of a second, the local electric field rises beyond the threshold level for discharge causing an “avalanche to streamer conversion”. The streamer itself, owing to temperatures approaching 2000 K, will generate many more electrons from negative oxygen ions in the air.

There are three charged zones in a cumulonimbus cloud; the upper most region of the cloud is positively charged, the bottom of the cloud negatively charged and then another, smaller, positively charged zone is present beneath the negative zone. As the initial breakdown streamers, formed as described in the preceding two paragraphs, streak from the negative cloud zone to the lower positive zone, a luminous “stepped leader” is initiated. The downward moving negative stepped leader is formed discontinuously, with each “step” being between 10 and 100 meters in length. The time interval between steps is on the order of 10 to 100 millionths of a second and the formation of a step can occur at a rate of up to  $10^8$  meters per second. The average downward speed of a stepped leader is on the order of 300,000 meters per second.

As the initial downward stroke (the stepped leader) approaches the ground to within a few hundred meters a positively charged “connecting leader” is formed, streaking upward at up to a million meters a second to join the tip of the stepped leader. The instant the connection is made a “return stroke” is generated, traveling upward through the residual stepped leader core of conditioned air at a speed of  $10^8$  meters per second. The conducting or discharge channel of the leader, known as the “core”, is about as thick as a human finger. Unlike the stepped leader, the return stroke is continuous, and the current can reach 80,000 Amperes or more. The temperature within the core may reach 30,000 K which is equivalent to over 54,000 degrees Fahrenheit, or six times the surface of the sun, in just a few millionths of a second. The extremely rapid heating to such high temperatures causes a shock wave in the air of up to a hundred atmospheres pressure, resulting in what we perceive as thunder. The return stroke is the most luminous part of the lightning flash.

In just a few hundred millionths of a second the return stroke arrives at the point of origin in the cloud resulting in yet another downward moving stroke called a “dart leader”. The name is derived from the dart-like appearance of the flash seen on special “streak cameras” used to investigate lightning. When the dart leader reaches the ground conditions may be right for yet another return stroke. The average number of downward and return strokes in a cloud to ground lightning flash is usually no more than three to four, with a range of one to seven. Typically, the total duration of the flash is between 0.2 and 0.3 seconds.

This brief discussion of lightning, owing to limitation of space, did not mention the physics behind the branching of lightning which of course is something we have all witnessed and have seen in photographs. Also not discussed are positive flashes which, while much less common than negative flashes, carry up to ten times the charge of a negative flash. It should be mentioned that a lightning flash can strike the ground in more than one place with the separation of strikes being as much a several kilometers. Also not mentioned is the “corona sheath” of charge surrounding the core with a radius of up to ten meters.

No discussion of lightning should go without mentioning Ben Franklin’s famous kite experiment on June 10, 1752, during which he collected an electric charge in a (recently developed) Leyden jar, and observed a spark jumping to his hand from the key and silk ribbon attached to the kite string. This phenomenon demonstrated for the first time that a thunderstorm was an electrical storm, encompassing a powerful electric field in and around the cloud. Despite many artistic renderings of this historic moment, lightning did not strike Franklin’s kite...had it done so it might have been the end of Ben.

The author wishes to thank Dr. Ian J. Thompson, theoretical nuclear physicist at the Lawrence Livermore National Atomic Laboratories for his assistance in obtaining source material for this article.

**Botanical Focus: Purslane (*Portulaca oleracea*)** By: David Oleksa

Anyone who has spent time weeding in a garden has probably run across the subject of this article. Purslane is generally regarded as the strangest “weed” that should be removed from the garden. Not only from the garden but from the multitude of places where it is found; sidewalk cracks, roadsides, construction sites, wood chip piles and just about any other place imaginable. Why the seeming hatred of this plant? Maybe it has to do with its weird appearance. The plant grows profusely with reddish, tubular stems and thick, smooth, fleshy leaves that make it appear as some sort of succulent that would be best displayed in a planter. It appears to almost be extra-terrestrial or if you want to be generous, it looks sort of like a species of cactus without the needles. Now having painted this somewhat unkind picture of this article’s subject, I would hasten to add that by considering it a weed we do it a great disservice.



Purslane is a native of most of the world. For some time, it was thought that it had been brought to the North American continent by Europeans but in 1975 its seeds and pollen were found in a pre-Columbian archaeological site. Thus, it is a native. This is mentioned by Samuel Thayer in his wonderful book Incredible Wild Edibles. Having read the unflattering description of the plant in the preceding paragraph, you are probably wondering why anyone thought that the European settlers would have even had a reason to bring this strange plant with them. The answer is simple. Purslane is one of the most nutritious vegetables that can be found. It plays an important role in many cuisines including Mediterranean, Mexican and Indian. Why it has not become a staple in the American diet is a mystery. Some people think that its mucilaginous (when cooked) property is a turnoff but cooked okra is appreciated by many and it too has that slimy texture. Maybe it doesn’t appeal because of its appearance. It tends to grow in thick mats and gives the impression that anything that is so common can’t possibly be good for you. Au contraire my friend. Purslane is loaded with potassium and iron and it is higher in omega-3 fatty acids than any other vegetable that has ever been tested. The leaves can be eaten raw and they make a healthy snack. The entire plant can be used in salads; the stems can be pickled and all parts of the plant can be used wherever any raw vegetable can be used. They excel as an ingredient in burritos and combined with peppers and onions make a nutritious and tasty stir fry. In Korea, it is used as an ingredient in kimchi.

Harvesting this plant is simple. Just pick it. It has an enviable quality of rarely being tough and although it lies close to the ground, its smooth leaves wash quickly and easily. Some people prefer to pull off the leaves and just use them but the stems are tasty as well and if desired, you can just cut up the entire plant (except for the roots).

Purslane is an annual plant and produces many black seeds. They are difficult to collect but scientists are studying them carefully because preliminary results show that they improve blood pressure ratios and significantly reduce triglycerides, blood sugars and total cholesterol. With all these positives going for it and the fact that you probably have a supply growing in your backyard right now, you should give it a try. You might like it.



***Cooks Creek Watershed Association Fall Dinner***

*October 2, 2021, 5-9 PM. At the Springtown Rod & Gun Club, 3146 Routes 212-412, Springtown, PA 18081*

***Bring a covered dish to share***

*5-6 PM Hors d’oeuvres, 6-7 PM dinner, 7 PM speaker, to be determined*

## Green Tip #51: What on Earth is “plant blindness?”

EarthTalk®; From the Editors of E - The Environmental Magazine

Botanists James Wandersee and Elizabeth Schussler coined the term “plant blindness” in 1998 to describe “the inability to see or notice the plants in one’s own environment, leading to the inability to recognize the importance of plants in the biosphere and in human affairs.” An additional aspect of plant blindness is the “inability to appreciate the aesthetic and unique biological features” of plants and “the misguided, anthropocentric ranking of plants as inferior to animals, leading to the erroneous conclusion that they are unworthy of human consideration.”



Wandersee and Schussler coined the term after years of discussion back and forth about a fundamental problem: if we don’t pay attention to plants and their role in supporting the rest of the lives on the planet including our own, how will we ever agree on the need to conserve them, much less support plant science research and education? Also, letting plants die out poses an existential threat to humanity and the rest of life on the Earth. Researchers believe one in eight plant species around the globe are threatened with extinction as our (plant-dependent) human population continues to swell.

What causes plant blindness? According to Wandersee and Schussler, social and educational biases are definitely a big factor, with so-called “zoo-chauvinistic” educators at all levels tending to use animal (instead of plant) examples to teach basic biological concepts in the classroom, lab or field.

Of course, there is likely more to it than educational biases. Wandersee and Schussler argue in an article in *Plant Science Bulletin* that another major contributor to plant blindness is the nature of the human visual information-processing system, in that our brains can’t possibly process everything around us immediately just because our eyes are open, and we are hard-wired to prioritize certain visual cues (like movement that may signal an animal threat) over others.

One study they cite concludes that over the course of a single second, the eyes generate more than 10 million bits of data for visual processing, but the brain can only extract 40 bits during this timeframe and can only fully process 16 of them that reach our conscious attention. Another study found that participants more accurately detected images of animals than plants in an “attentional blink” study designed to test people’s ability to notice one or two rapid-fire images. And yet another study found that children recognize that animals are living creatures before they can tell plants are also alive, and that they remember images of animals much better than images of plants.

To Wandersee and Schussler, devoting more of our educational resources to teaching kids and adults about plants and their role in supporting life is the key to overcoming plant blindness. Indeed, seeing the plants all around us could be key to our survival on the planet, so it behooves each and every one of us to learn more about the environment around us and start appreciating not just the other fauna we share life with but also the flora that helps make it all possible.

**CONTACTS:** Plant Blindness, [academic.oup.com/bioscience/article/53/10/926/254897](http://academic.oup.com/bioscience/article/53/10/926/254897); “Toward a Theory of Plant Blindness,” [www.botany.org/bsa/psb/2001/psb47-1.pdf](http://www.botany.org/bsa/psb/2001/psb47-1.pdf); “Plant blindness and the implications for plant conservation,” [conbio.onlinelibrary.wiley.com/doi/pdf/10.1111/cobi.12738](http://conbio.onlinelibrary.wiley.com/doi/pdf/10.1111/cobi.12738).

**EarthTalk®** is produced by Roddy Scheer & Doug Moss for the 501(c)3 nonprofit **EarthTalk**. See more at <https://emagazine.com>. To donate, visit <https://earthtalk.org>. Send questions to: [question@earthtalk.org](mailto:question@earthtalk.org).

## Children's Backyard: Artist's Conk Mushroom

*By: David and Lois Oleksa*

When you hear the word "mushroom" you probably picture something that is white and looks like a little umbrella. Or you may think of some brown cooked things that can be put on a steak. The Artist's Conk is a mushroom that doesn't look like either of those things. Rather, it looks like a shelf that is sticking out of the bark of a tree. But, indeed, it is a mushroom. It is not very good to eat but if you grind some of it up and mix it with boiling water you can drink it as a tea. Scientists are also finding that this mushroom may be able to treat some very serious diseases. And people who work with fabrics can use this mushroom to make a beautiful brown dye. The Artist's Conk can be found on living or dead trees as long as they are hardwoods. They will not grow on pine trees. Another thing that makes them different from other mushrooms is their life span. Most mushrooms only last for a few days. The Artist's Conk may live for several years. As a matter of fact, if you take one and cut it in half, you will be able to count the spore layers and determine how old the mushroom is (very similar to how you can count the annual rings on a tree to know its age).

You may be wondering how this mushroom got such an unusual name. The word "Conk" simply means a mushroom growing on the bark of a tree. The word "Artist's" however is more interesting. When you see the Artist's Conk you may be struck by the fact that the top side is a dark brown in color but the underside is a creamy white in appearance. The white side can be bruised very easily so you must be careful when you remove the mushroom from the tree or you will leave ugly spots on the white side if your fingers press on it. If the mushroom is carefully removed, it can be used as an artist's canvas and drawings may be etched into the white side of the mushroom. These drawings will turn brown in color and will stand out from the white background. If you allow the mushroom to dry first, it can be painted. When you remove the mushroom from the tree you will see a flat part (where it had been connected to the tree); this can be used as a natural stand for the art work to be displayed. Once the mushroom has dried, it will last for many years.

These mushrooms can be found in most parts of the world and are very easy to see when you walk by or through a forest. When you see one you may want to try to remove it from the tree. Carefully press down on the dark upper side and move your fingers along where the mushroom is attached to the tree constantly pressing down. After you work with it for a while, you should start to feel it loosening up. Be careful not to let it fall on the ground because its tender white side may be bruised and you will ruin your "canvas". Once you've freed it from its host tree, feel free to use your artistic talents.

(Continued on page 11)

(Continued from page 10)

## Children's Activity: Etching an Artist Conk Mushroom

Before etching the underside of the polypore take a look at the pores.

Notice the difference between gilled mushrooms like the common *Agaricus* mushroom found in the grocery store and the shelf mushroom that has round pores. The shelf mushroom's pores appear as small holes on the underside of the shelf. These holes are really the ends of tubes within the shelf. Spores which are like fungi seeds, are released and they fall down the tube, out the pore, and into the air. Spore arrangement and color are used to identify many mushrooms.

Holding the shelf mushroom upside down, take a sharp stone, thin stick, toothpick or a pointed object (be careful) and etch the surface while holding the shelf at its edges so you do not mark the underside with your fingerprints. Let the shelf dry out and admire your etching.



*Top side of shelf mushroom.*

*Bottom side of shelf mushroom with etched picture.*



## Creature Feature: American Red Squirrel, *Tamiasciurus hudsonicus*

This is 57th in a series on the fauna of the Cooks Creek Watershed.

None of the denizens of my property are as vocal and active as our red squirrels. They scamper about in the Arborvitae, Hemlocks and Juniper bordering my back yard and scold my dogs endlessly. In the summer, their young chase each other through the trees, practicing acrobatic maneuvers that seem to defy gravity. And even in the dead of winter they will come out on sunny days and their “chr-r-r-r, ch-r-r-r” will remind us that they are alive and well - and still angry.



Red squirrels are one of four species of squirrels that we have in Pennsylvania, along with gray squirrels and two species of flying squirrels. The red squirrel is about half the size of the more common gray squirrel but it makes up for its size with twice the attitude. This squirrel is not sociable and will defend its territory vociferously. Red squirrels tend to live in stands of coniferous trees where they collect cones for their seeds. They will also eat berries and other nuts, and even baby birds and eggs. Red squirrels are very active, almost hyperactive, and will collect much more food than they need and store their booty in underground caches. Some of these caches may contain a bushel or more of food! It's not all fun and games though; large raptors, lynx, coyotes, foxes, martins and weasels prey on red squirrels, as do domestic cats. Tree climbing snakes will steal young squirrels from their nests, even though they build them as high as 60 feet off the ground.



Red squirrels have a rather long breeding season; mating can occur anytime between January and September, but it usually peaks in early March and again in July. The couple does not stay together after mating, and the female may mate with more than a dozen other males before her estrus cycle ends. Gestation takes 5-6 weeks and the 4-5 young are born naked and helpless. Squirrels usually build their nests in trees out of leaves and twigs, and line them moss and grass. The female will keep the young in the nest for 6 weeks before allowing them to venture out. They will be weaned shortly thereafter.

They will reach full adult size by 4 months, and usually stay in the family group until fall. Red squirrels will be able to breed the summer after they are born. Typically, red squirrels live for two years or more.

All four of our squirrel species can be destructive. They raid bird feeders, build nests inside sheds, and can create quite a mess. As a rule, I do not kill pests, but I don't let them make a mess of things either. A little creativity and some chicken wire can keep them out of sheds, and I spend the extra money to get squirrel-proof feeders. If they do get into the house, some live traps can easily remove them, but you'll need to figure out how they got in to prevent them from coming right back. Despite this occasional annoyance, I'm still glad they have chosen my backyard.

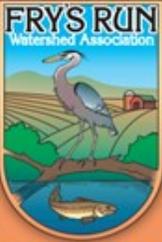
# Current Matters



Native plants put in at Firehouse by C.C.W.A. are doing well.

FRY'S RUN WATERSHED ASSOCIATION

## FRY'S RUN FAMILY FUN

**F.I.S.H. INVESTIGATION**  **ART FOR KIDS**

**NATIVE PLANT SALE** **LEARN ABOUT WATERSHEDS**

AT FRY'S RUN PARK • [WWW.FRYSRUN.ORG](http://WWW.FRYSRUN.ORG)  
**SEPTEMBER 18, 2021 10AM-1PM**  
**WWW.FRYSRUN.ORG**

10AM STREAM LIFE PRESENTATION  
 11AM VISIT A PROPERTY ON FRY'S RUN  
 12:30PM F.I.S.H. FOR KIDS (AND ADULTS)  
 (FIRST INVESTIGATION OF STREAM HEALTH)

**ART** Watershed Arts and Crafts **PARTICIPATE** in water testing **BUY** native plants for your garden



**DONATIONS WELCOME.**

Support Fry's Run Family Fun



A nice crowd for Mini Monster Mayhem at the Douglas's



Elderberry bushes blooming

# Cooks Creek Workshop

“Practicing Conservation through Seed Propagation”



Workshop hosted by Cooks Creek Watershed Association on  
“Practicing Conservation through Seed Propagation”  
*Ripe seed is the genesis of hope.*

- When:** Saturday, September 11th, 2021, 10AM to Noon.  
**Who:** Guest presenters, John Mark Courtney and Victoria Holderer of KindEarth Growers in Ottsville.  
**Where:** This Workshop takes place at Peppermint Park, 1801 Peppermint Road, Springfield Township, Coopersburg, PA 18036.

This workshop will cover the “ins and outs” of native plant seed collection, including how to identify when a seed is ripe for harvest, collection, cleaning, and storage process, as well as stratification and sowing techniques. Join us for this hands-on workshop to learn how to rewild and increase native plant diversity throughout the Watershed with the simple practice of seed propagation.

**Rain or Shine.  
Free but donations will be accepted.**

## Schedules of Local Government Meetings

**Springfield Township:**  
[www.springfieldbucks.org](http://www.springfieldbucks.org)  
 610-346-6700  
 2320 Township Road

**Supervisors:** 4th Tuesday @ 7:30 PM  
**Planning Commission:** 1st Wed. @ 7 PM  
**Environmental Advisory Council:**  
 2nd Thurs. @ 7:30 PM  
**Open Space Committee:**  
 As required  
**Historic Commission:**  
 2nd Wed. @ 7:00 PM

**Durham Township:**  
[www.durhamtownship.org](http://www.durhamtownship.org)  
 610-346-8911  
 215 Old Furnace Road

**Supervisors:** 2nd Tuesday @ 7:30 PM  
**Planning Commission:**  
 1st Tues. @ 7:30 PM  
**EAC:** 3rd Tues. @ 7:30 PM

**Lower Saucon:**  
[www.lowersaucontownship.org](http://www.lowersaucontownship.org)  
 610-865-3291  
 3700 Old Philadelphia Pike

**Council:** 1st and 3rd Wed. @ 7 PM  
**Planning Commission:**  
 4th Thurs. @ 7 PM  
**EAC:** 2nd Tues. @ 7 PM

**Williams Township:**  
[www.williamstwp.org](http://www.williamstwp.org)  
 610-258-6060  
 655 Cider Press Road

**Supervisors:** 2nd Wed. @ 7 PM  
**Planning Commission:** 3rd Wed. @ 7 PM  
**Land Preservation Board:**  
 4th Tues. @ 7 PM

**Richland Township:**  
[www.richlandtownship.org](http://www.richlandtownship.org)  
 215-536-4066  
 1328 California Road

**Supervisors:** 2nd Mon. @ 7 PM  
**Planning Commission:** 3rd Tues. @ 7 PM  
**Preservation Board:** 2nd Wed. @ 7 PM

## Recycle! Local Information

### Durham Township Recycling Center

Location: Municipal Building, 215 Old Furnace Rd, Durham

1st Saturday of every month ( 2<sup>nd</sup> Saturday if 1<sup>st</sup> Saturday is on a holiday weekend)

Hours: 9:00AM – 12:00 noon.

Accepting newspapers, magazines, junk mail, phone books, glass, tin, food grade plastic, aluminum and cardboard. Please note that this facility is just Durham Township residents!

Contact the township building for more info. 610-346-8911

### Springfield Township

Cloth/clothes only at Springfield Fire company.

*Springfield no longer has recycling. Check out Bethlehem or, paper and cardboard recycling at the Southern Lehigh Public Library. Also, check with your local trash hauler who will offer a recycling program.*

See website: [www.springfieldbucks.org](http://www.springfieldbucks.org)

or call 610-346-6700.

### Blinderman & Son

Location: 1320 Whitaker St, Hellertown. 610-838-9221

Hours:  
 7:30AM – 4:00 PM, Monday – Friday

7:30 AM – 11:30AM, Saturday

Accepting cardboard and most metals.

### City of Bethlehem Theis/Cornfeld Recycling Center

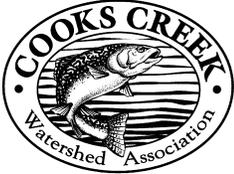
Web site: [www.bethlehem-pa.gov/recycle/services/theis\\_cornfeld.htm](http://www.bethlehem-pa.gov/recycle/services/theis_cornfeld.htm)

Location: 635 Illick's Mill Rd., Bethlehem

Phone: 610-865-7082 Hours: Weekdays: 9AM to 5 PM, Saturday 9 AM to 4 PM, Sunday 11AM to 4 PM

Accepting glass, cans, plastics, newspapers, all books, magazines, catalogs, cardboard, mixed office paper, metals, textiles (clothing, shoes, etc.), large appliances (certified freon-free). Call or go to the web site for specifics.

**Bonus!!** They provide FREE on site shredding services for businesses and private individuals. If you have 4 or more boxes, call 610-865-7082 to schedule an appointment.



Cooks Creek Watershed Association  
P.O. Box 45  
Springtown, PA 18081  
www.cookscreekpa.org

If you hold precious the beauty that surrounds us in the Cooks Creek Watershed area and would like to be actively involved in its preservation, then consider joining our association as a member. Reach out to your community! We would love to hear from you! Please drop us a line at [info@cookscreekpa.org](mailto:info@cookscreekpa.org)

CCWA is a 501 ( c ) ( 3 ) non-profit organization.

Find us on Facebook



## Please Join Us... Cooks Creek Watershed Association-Membership Form

All of us who reside in the area enjoy the beauty of Cooks Creek.

Those of us who are fortunate enough to live here are dependent upon this watershed not only for the beauty of the creek but our wells, the wetlands, the wildflowers and all of the beautiful landscapes in our townships.

It's up to all of us to protect this treasure. The Cooks Creek Watershed Association asks that you become a member and help in the task of protecting this special resource.

Name: \_\_\_\_\_

Other household members: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_ E-mail: \_\_\_\_\_

**Interests: (circle)**

Newsletter	Website	Roadside Cleanup	Event Planning
Membership	Fundraising	Stream Studies	Wherever I'm Needed

Individual Membership Fee: \$ 15.00 per year \_\_\_\_\_

Family Membership Fee: \$ 25.00 per year \_\_\_\_\_

Student Membership Fee: \$ 10.00 per year \_\_\_\_\_

Donation: to legal defense fund: \_\_\_\_\_

Total:

I wish my membership and donation to remain anonymous in our board minutes. Check box.

Please detach and mail to Cooks Creek Watershed Association, (CCWA)

P.O. Box 45, Springtown, PA 18081. **THANK YOU!**

Checks can be made payable to Cooks Creek Watershed Association.

CCWA is a 501 ( c ) ( 3 ) non-profit organization.